GUAM ENVIRONMENTAL PROTECTION AGENCY • *AHENSIAN PRUTEKSIÓN LINA'LA' GUÅHAN*
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WALTER S. LEON GUERRERO • ADMINISTRATOR | MICHELLE C. R. LASTIMOZA • DEPUTY ADMINISTRATOR

OCT 2 6 2020 35GL-20- 2341
Speaker Tina Rose Muña Barnes

OCT 27 2020
Time 11:00 XAM ( )PM
Received By

Honorable Tina Muña Barnes
Speaker
I Mina'trentai Singko Na Lihesturan Guåhan
Guam Congress Building
163 Chalan Santo Papa
Hagatna, Guam 96910

RE: This is a Transmittal to I *Liheslaturan Guåhan* of Proposed Rules and Regulations pursuant to the Administrative Adjudication Law.

Buenas yan Hafa Adai Madam Speaker,

The Guam Environmental Protection Agency (Guam EPA) hereby transmit the proposed Underground Storage Tank (UST) Rules and Regulations in compliance with the requirements of the Administrative Adjudication Law (AAL), and with Guam EPA's statutory authority to promulgate rules. Pursuant to 5 Guam Code Annotated (GCA) §9303(a)(1) of the AAL, as amended by Public Law 34-032 (July 13, 2017) and 10 GCA, Chapter 76, Article 1, §76104(a).

Guam EPA hereby submits pursuant to 5 GCA §9303(a)(3) a copy of the proposed UST Rules and Regulations in printed and identical electronic (PDF and Word) version and other supporting information and documents for your review and approval:

(1) Guam EPA's Board of Directors Resolution # 19-002;
(2) Posted at Guam EPA's website at www.epa.guam.gov;
(3) DOA Letter for concurrence and approval;
(4) Fact Sheet;
(5) Ads for the Notice of Public Hearing and Public Comment and Review Period for the proposed UST Rules and Regulations. The Ads were posted in the Guam Daily Post on August 5 and August 30, 2019, pursuant to 5 GCA §9301(a);
(6) Guam EPA's Economic Impact Statement and EPA's Assessment of the Potential Costs, Benefits, and Other Impacts of the Final Revisions to EPA's UST Regulations;
(7) Public Hearing Transcript;
(8) Guam EPA's cover letter to the Attorney General dated December 17, 2019;
(9) Attorney General's Letter of Approval dated September 17, 2020;
(10) Guam EPA's cover letter to the Governor of Guam dated October 14, 2020; and
(11) Governor's Letter of Approval as to Policy dated October 19, 2020.

The Agency looks forward to your review and approval of the Proposed UST Rules and Regulations. Should you have any questions, please feel free to contact our office at 300-4751 or email me at walter.leonguerrero@epa.guam.gov.

Sincerely,

WALTER S. LEON GUERRERO
Administrator

REVISED

GUAM ADMINISTRATIVE RULES AND REGULATIONS (GAR)

TITLE 22

GUAM ENVIRONMENTAL POTECTION AGENCY

CHAPTER 50

GUAM UNDERGROUND STORAGE TANK REGULATIONS

ATTN: Office of the Attorney General, Solicitors Division

REFERENCE NUMBER: 19-0744 GEPA

RE: REVISED 22 GAR Chapter 50

DATE: August 4, 2020

RECEIVED
MANUEL FEJERAN
OFFICE OF THE ATTORNEY GENERAL
ADMINISTRATION
8.4.20 10:22AM

GUAM ADMINISTRATIVE RULES AND REGULATIONS (GAR)

TITLE 22

GUAM ENVIRONMENTAL POTECTION AGENCY

CHAPTER 50

GUAM UNDERGROUND STORAGE TANK REGULATIONS

Doc. No. 35GL-20-2341.

GUAM ADMINISTRATIVE RULES AND REGULATIONS (GAR)

TITLE 22

GUAM ENVIRONMENTAL PROTECTION AGENCY (Guam EPA)

CHAPTER 50

GUAM UNDERGROUND STORAGE TANK REGULATIONS

Article 1. Scope and Installation Requirements for Partially Excluded UST Systems
Article 2. UST Systems: Design, Construction, and Installation
Article 3. General Operating Requirements
Article 4. Release Detection
Article 5. Release Reporting, Investigation, and Confirmation
Article 6. Release Response Action
Article 7. Out-of-Service UST Systems and Closure
Article 8. Financial Responsibility
Article 9. Lender Liability
Article 10. Operator Training
Article 11. Reserved
Article 12. Permits and Variances
Article 13. Enforcement

ARTICLE 1
SCOPE AND INSTALLATION REQUIREMENTS FOR PARTIALLY EXCLUDED UST SYSTEMS

§ 50101 to § 50109. [Reserved]
§ 50110. Applicability
§ 50111. Installation requirements for partially excluded UST systems

§ 50112. Definitions
§ 50113. Installation requirements for partially excluded UST systems--codes of practice
§ 50114 to § 50119. [Reserved.]

§ 50101 to § 50109. [Reserved]

§ 50110. Applicability.

(a) The requirements of this chapter apply to all owners and operators of an UST system as defined in § 50112 except as otherwise provided in this section.

(1) Airport hydrant fuel distribution systems, UST systems with field-constructed tanks, and UST systems that store fuel solely for use by emergency power generators must meet the requirements of this chapter as follows:

(A) Airport hydrant fuel distribution systems and UST systems with field-constructed tanks must meet all applicable requirements of this chapter, except that those installed before October 13, 2015 must meet the applicable requirements of Articles 4, 8, 10, and 12 no later than one year after October 13, 2015.

(B) UST systems that store fuel solely for use by emergency power generators must meet all applicable requirements of this chapter except that those installed before October 13, 2015 must meet the applicable requirements of Article 4 no later than one year after October 13, 2015.

(2) Any UST system listed in subsection (c) must meet the requirements of § 50111.

(b) Exclusions. The following UST systems are excluded from the requirements of this chapter:

(1) Any UST system holding hazardous wastes listed or identified under 10 Guam Code Annotated (GCA), Chapter 76, Underground Storage of Regulated Substances, or the

rules adopted thereunder, or Subtitle C of the Solid Waste Disposal Act, or a mixture of such hazardous waste and other regulated substances;

(2) Any wastewater treatment tank system that is part of a wastewater treatment facility regulated under Section 402 or 307(b) of the Clean Water Act;

(3) Equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks;

(4) Any UST system that contains a de minimis concentration of regulated substances; and

(5) Any emergency spill or overflow containment UST system that is expeditiously emptied after use.

(c) Partial Exclusions. Articles 2, 3, 4, 5, 7, 10, and 12 do not apply to:

(1) Wastewater treatment tank systems not covered under subsection (b)(2);

(2) Aboveground storage tanks associated with:

(A) Airport hydrant fuel distribution systems; and

(B) UST systems with field-constructed tanks;

(3) Any UST systems containing radioactive material that are regulated under the Atomic Energy Act of 1954 (42 U.S.C. 2011 and following); and

(4) Any UST system that is part of an emergency generator system at nuclear power generation facilities licensed by the Nuclear Regulatory Commission and subject to Nuclear Regulatory Commission requirements regarding design and quality criteria, including but not limited to 10 C.F.R. Part 50.

(5) Owners and operators of oil-water separators and decontamination tanks must notify the Agency and obtain a permit to install a new flow through process and decontamination tank in accordance with Article 2, as applicable. Owners and operators of flow-through process tanks and decontamination tanks are not required to obtain, renew, or pay for an annual fee to operate the tank and are not required to comply with Articles 3, 4, 5, and 10.

(6) Owners and operators of oil-water separators and decontamination tanks shall pay for a fee to install and close the system, and to conduct site assessment upon closure in accordance with §§ 50171 and 50172 of Article 7; and

(7) Owners and operator of oil-water separators and decontamination tanks that are installed after October 13, 2018, must be designed, constructed, and installed in accordance with Article 2, unless directed otherwise by the Agency.

§ 50111. Installation requirements for partially excluded UST systems.

(a) Owners and operators must install an UST system listed in section 50110 (c)(1), (3), or (4) storing regulated substances (whether of single or double wall construction) that meets the following requirements:

(1) Will prevent releases due to corrosion or structural failure for the operational life of the UST system;

(2) Is cathodically protected against corrosion, constructed of non-corrodible material, steel clad with a non-corrodible material, or designed in a manner to prevent the release or threatened release of any stored substance; and

(3) Is constructed or lined with material that is compatible with the stored substance.

(b) Notwithstanding subsection (a), an UST system without corrosion protection may be installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life. Owners and operators must maintain records that demonstrate compliance with the requirements of this subsection for the remaining life of the tank.

§ 50112. Definitions.

When used in this Article, the following terms have the meanings given below:

(a) "Aboveground release" means any release to the surface of the

land or to surface water. This includes, but is not limited to, releases from the aboveground portion of an UST system and aboveground releases associated with overfills and transfer operations as the regulated substance moves to or from an UST system.

(b) "Airport hydrant fuel distribution system" (also called "airport hydrant system") means an UST system which fuels aircraft and operates under high pressure with large diameter piping that typically terminates into one or more hydrants (fill stands). The airport hydrant system begins where fuel enters one or more tanks from an external source such as a pipeline, barge, rail car, or other motor fuel carrier.

(c) "Ancillary equipment" means any devices including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps used to distribute, meter, or control the flow of regulated substances to and from an UST.

(d) "Belowground release" means any release to the subsurface of the land and to groundwater. This includes, but is not limited to, releases from the belowground portions of an underground storage tank system and belowground releases associated with overfills and transfer operations as the regulated substance moves to or from an underground storage tank.

(e) "Beneath the surface of the ground" means beneath the ground surface or otherwise covered with earthen materials.

(f) "Cathodic protection" is a technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell. For example, a tank system can be cathodically protected through the application of either galvanic anodes or impressed current.

(g) "Cathodic protection tester" means a person who can demonstrate an understanding of the principles and measurements of all common types of cathodic protection systems as applied to buried or submerged metal piping and tank systems. At a minimum, such persons must have education and experience in soil resistivity, stray current, structure-to-soil potential, and component electrical isolation measurements of buried metal piping and tank systems.

(h) "Class A operator" means the individual who has primary responsibility to operate and maintain the UST system in accordance with

applicable requirements established by the agency. The Class A operator typically manages resources and personnel, such as establishing work assignments, to achieve and maintain compliance with regulatory requirements.

(i) "Class B operator" means the individual who has day-to-day responsibility for implementing applicable regulatory requirements established by the agency. The Class B operator typically implements in-field aspects of operation, maintenance, and associated recordkeeping for the UST system.

(j) "Class C operator" means the individual responsible for initially addressing emergencies presented by a spill or release from an UST system. The Class C operator typically controls or monitors the dispensing or sale of regulated substances.

(k) "Compatible" means the ability of two or more substances to maintain their respective physical and chemical properties upon contact with one another for the design life of the tank system under conditions likely to be encountered in the UST.

(l) "Connected piping" means all underground piping including valves, elbows, joints, flanges, and flexible connectors attached to a tank system through which regulated substances flow. For the purpose of determining how much piping is connected to any individual UST system, the piping that joins two UST systems should be allocated equally between them.

(m) "Consumptive use" with respect to heating oil means consumed on the premises.

(n) "Containment sump" means a liquid-tight container that protects the environment by containing leaks and spills of regulated substances from piping, dispensers, pumps, and related components in the containment area. Containment sumps may be single walled or secondarily contained and located at the top of tank (tank top or submersible turbine pump sump), underneath the dispenser (under-dispenser containment sump), or at other points in the piping run (transition or intermediate sump).

(o) "Corrosion expert" means a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and

mathematics acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Such a person must be accredited or certified as being qualified by the National Association of Corrosion Engineers or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control of buried or submerged metal piping systems and metal tanks.

(p) "Dielectric material" means a material that does not conduct direct electrical current. Dielectric coatings are used to electrically isolate UST systems from the surrounding soils. Dielectric bushings are used to electrically isolate portions of the UST system (e.g., tank from piping).

(q) "Dispenser" means equipment located aboveground that dispenses regulated substances from the UST system.

(r) "Dispenser system" means the dispenser and the equipment necessary to connect the dispenser to the underground storage tank system. The equipment necessary to connect the dispenser to the underground storage tank system includes check valves, shear valves, unburied risers or flexible connectors, or other transitional components that are underneath the dispenser and connect the dispenser to the underground piping.

(s) "Electrical equipment" means underground equipment that contains dielectric fluid that is necessary for the operation of equipment such as transformers and buried electrical cable.

(t) "EPA" means the United States Environmental Protection Agency.

(u) "Excavation zone" means the volume containing the tank system and backfill material bounded by the ground surface, walls, and floor of the pit and trenches into which the UST system is placed at the time of installation.

(v) "Existing UST system" means an UST system for which installation commenced on or before December 22, 1988.

(w) "Exposure assessment" means a determination regarding the extent of exposure of, or potential for exposure of, individuals to regulated substances from a release from an UST or tank system. An exposure assessment shall be based on factors such as the nature and extent of

contamination, the existence of or potential for pathways of human exposure (including ground or surface water contamination, air emissions, dermal exposure, soil ingestion, and food chain contamination), the size of the community or communities within the likely pathways of exposure, an analysis of expected human exposure levels with respect to short-term and long-term health effects associated with identified contaminants, and any available recommended exposure or tolerance limits for the contaminants.

(x) "Farm tank" is a tank located on a tract of land devoted to the production of crops or raising animals, including fish, and associated residences and improvements. A farm tank must be located on the farm property. Farm includes fish hatcheries, rangeland, and nurseries with growing operations.

(y) "Field-constructed tank" means a tank constructed in the field. For example, a tank constructed of concrete that is poured in the field, or a steel or fiberglass tank primarily fabricated in the field is considered field-constructed.

(z) "Flow-through process tank" is a tank that forms an integral part of a production process through which there is a steady, variable, recurring, or intermittent flow of materials during the operation of the process. Flow-through process tanks do not include tanks used for the storage of materials prior to their introduction into the production process or for the storage of finished products or by-products from the production process.

(aa) "Free product" refers to a regulated substance that is present as a non-aqueous phase liquid (e.g., liquid not dissolved in water).

(bb) "Gathering lines" means any pipeline, equipment, facility, or building used in the transportation of oil or gas during oil or gas production or gathering operations.

(cc) "Hazardous substance" means a hazardous substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 as amended, except any substance regulated as a hazardous waste under Subtitle C of the Solid Waste Disposal Act.

(dd) "Hazardous substance UST system" means an underground storage tank system that contains a hazardous substance or any mixture of

such substances and petroleum, and that is not a petroleum UST system.
(ee) "Heating oil" means petroleum that is No. 1, No. 2, No. 4—light, No. 4—heavy, No. 5—light, No. 5—heavy, and No. 6 technical grades of fuel oil; other residual fuel oils (including Navy Special Fuel Oil and Bunker C); and other fuels when used as substitutes for one of these fuel oils. Heating oil is typically used in the operation of heating equipment, boilers, or furnaces.
(ff) "Hydraulic lift tank" means a tank holding hydraulic fluid for a closed-loop mechanical system that uses compressed air or hydraulic fluid to operate lifts, elevators, and other similar devices.
(gg) "Liquid trap" means sumps, well cellars, and other traps used in association with oil and gas production, gathering, and extraction operations (including gas production plants), for the purpose of collecting oil, water, and other liquids. These liquid traps may temporarily collect liquids for subsequent disposition or reinjection into a production or pipeline stream, or may collect and separate liquids from a gas stream.
(hh) "Maintenance" means the normal operational upkeep to prevent an underground storage tank system from releasing product.
(ii) "Motor fuel" means a complex blend of hydrocarbons typically used in the operation of a motor engine, such as motor gasoline, aviation gasoline, No. 1 or No. 2 diesel fuel, or any blend containing one or more of these substances (e.g., motor gasoline blended with alcohol).
(jj) "Noncommercial purposes" with respect to motor fuel means not for resale.
(kk) "On the premises where stored" with respect to heating oil means UST systems located on the same property where the stored heating oil is used.
(ll) "Operational life" refers to the period beginning when installation of the tank system has commenced until the time the tank system is properly closed under Article 7.
(mm) "Operator" means any person in control of, or having responsibility for, the daily operation of the UST system.
(nn) "Overfill release" is a release that occurs when a tank is filled beyond its capacity, resulting in a discharge of the regulated substance to the environment.

(oo) "Owner" means:

1. In the case of an UST system in use on November 8, 1984, or brought into use after that date, any person who owns an UST system used for storage, use, or dispensing of regulated substances; and
2. In the case of any UST system in use before November 8, 1984, but no longer in use on that date, any person who owned such UST immediately before the discontinuation of its use.

(pp) "Permit" means written authorization, as provided for in 10 GCA, Chapter 76, § 76117, from the Administrator to install or operate an UST or tank system. A permit authorizes owners or operators to install and operate an UST or tank system in a manner, or to do an act, not forbidden by 10 GCA Chapter 76, or by this chapter, but requiring review by the Administrator.

(qq) "Person" means an individual, trust, estate, firm, joint stock company, corporation (including a government corporation), partnership, association, commission, consortium, joint venture, commercial entity, the state or a county, the United States government, federal agency, interstate body, or any other legal entity.

(rr) "Petroleum" means petroleum, including crude oil or any fraction thereof, that is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

(ss) "Petroleum UST system" means an underground storage tank system that contains petroleum or a mixture of petroleum with de minimis quantities of other regulated substances. Such systems include those containing motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

(tt) "Pipe" or "piping" means a hollow cylinder or tubular conduit that is constructed of non-earthen materials.

(uu) "Pipeline facilities" (including gathering lines) means pipe rights-of-way and any associated equipment, facilities, or buildings.

(vv) "Regulated substance" means hazardous substances, petroleum, and any other substance designated by the agency that, when released into the environment, may present substantial danger to human health,

welfare, or the environment. The term regulated substance includes but is not limited to petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons, such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

(ww) "Release" means any spilling, leaking, emitting, discharging, escaping, leaching, or disposing from an UST system into groundwater, surface water, or subsurface soils.

(xx) "Release detection" means determining whether a release of a regulated substance has occurred from the UST system into the environment or a leak has occurred into the interstitial space between the UST system and its secondary barrier or secondary containment around it.

(yy) "Repair" means to restore to proper operating condition a tank, pipe, spill prevention equipment, overfill prevention equipment, corrosion protection equipment, release detection equipment or other UST system component that has caused a release of product from the UST system or has failed to function properly.

(zz) "Replaced" means

(1) For an underground storage tank – to remove an underground storage tank and install another underground storage tank; or

(2) For connected piping – to remove 50 percent or more of connected piping and install other piping, excluding connectors, connected to a single underground storage tank. For underground storage tanks with multiple piping runs, this definition applies independently to each piping run.

(aaa) "Residential tank" is a tank located on property used primarily for dwelling purposes.

(bbb) "Secondary containment" or "secondarily contained" means a release prevention and release detection system for a tank or piping. This system has an inner and outer barrier with an interstitial space that is monitored for leaks. This term includes containment sumps when used for interstitial monitoring of piping.

(ccc) "Septic tank" is a water-tight covered receptacle designed to receive or process, through liquid separation or biological digestion, the sewage discharged from a building sewer. The effluent from such receptacle is distributed for disposal through the soil and settled solids

and scum from the tank are pumped out periodically and hauled to a treatment facility.

(ddd) "Storm water collection system" or "wastewater collection system" means piping, pumps, conduits, and any other equipment necessary to collect and transport the flow of surface water run-off resulting from precipitation, or domestic, commercial, or industrial wastewater to and from retention areas or any areas where treatment is designated to occur. The collection of storm water and wastewater does not include treatment except where incidental to conveyance.

(eee) "Surface impoundment" is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials) that is not an injection well.

(fff) "Tank" is a stationary device designed to contain an accumulation of regulated substances and constructed of non-earthen materials (e.g., concrete, steel, plastic) that provide structural support.

(ggg) "Temporary closure" or "temporarily closed" means that owners and operators do not deposit regulated substances into the UST or tank system nor dispense regulated substances from the UST or tank system for sixty days or longer, except for UST systems that store fuel solely for use by emergency power generators and UST systems with field-constructed tanks. For UST systems that store fuel solely for use by emergency power generators and UST systems with field-constructed tanks, "temporary closure" or "temporarily closed" means that the UST or tank system is empty, as defined in section 50170(a), and owners and operators do not deposit regulated substances into the UST or tank system for sixty (60) calendar days or longer.

(hhh) "Under-dispenser containment" or "UDC" means containment underneath a dispenser system designed to prevent leaks from the dispenser and piping within or above the UDC from reaching soil, groundwater, and surface water.

(iii) "Underground area" means an underground room, such as a basement, cellar, shaft or vault, providing enough space for physical inspection of the exterior of the tank situated on or above the surface of the floor.

(jjj) "Underground release" means any belowground or below water release.

(kkk) "Underground storage tank" or "UST" means any one or combination of tanks (including underground pipes connected thereto) that is used to contain an accumulation of regulated substances, and the volume of which (including the volume of underground pipes connected thereto) is ten (10%) percent or more beneath the surface of the ground. This term does not include any:

(1) Farm or residential tank of one thousand one hundred gallons or less capacity used for storing motor fuel for noncommercial purposes;

(2) Tank used for storing heating oil for consumptive use on the premises where stored;

(3) Septic tank;

(4) Pipeline facility (including gathering lines):

(A) Which is regulated under 49 U.S.C. chapter 601; or

(B) Which is an intrastate pipeline facility regulated under state laws as provided in 49 U.S.C. chapter 601, and which is determined by the Secretary of Transportation to be connected to a pipeline, or to be operated or intended to be capable of operating at pipeline pressure or as an integral part of a pipeline;

(5) Surface impoundment, pit, pond, or lagoon;

(6) Storm water or wastewater collection system;

(7) Liquid trap or associated gathering lines directly related to oil or gas production and gathering operations; or

(8) Storage tank situated in an underground area (such as a basement, cellar, mine working, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

The term underground storage tank or UST does not include any pipes connected to any tank which is described in paragraphs (1) to (8).

(jjj) "Upgrade" means the addition or retrofit of some systems such as cathodic protection, lining, or spill and overfill controls to improve the ability of an underground storage tank system to prevent the release of

product.
(kkk) "UST system" or "tank system" means an underground storage tank, connected underground piping, underground ancillary equipment, and containment system, if any.
(lll) "Variance" means a special written authorization from the Administrator to own, install, or operate an UST or tank system in a manner deviating from, or to do an act that deviates from, the requirements of this chapter that are more stringent than 40 C.F.R. Part 280.
(mmm) "Wastewater treatment tank" means a tank that is designed to receive and treat an influent wastewater through physical, chemical, or biological methods.

§ 50113. Installation requirements for partially excluded UST systems--codes of practice.

(a) The following current codes of practice may be used as guidance for complying with § 50111:

(1) NACE International Standard Practice SP 0285, "External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection";

(2) NACE International Standard Practice SP 0169, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems";

(3) American Petroleum Institute Recommended Practice 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems"; or

(4) Steel Tank Institute Recommended Practice R892, "Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems".

§ 50114 to § 50119. [Reserved.]

ARTICLE 2
UST SYSTEMS: DESIGN, CONSTRUCTION, AND INSTALLATION

§ 50120. Performance Standards for UST Systems
§ 50121. Upgrading of UST Systems
§ 50122. [Reserved.]
§ 50123. Tank and Piping Design for Hazardous Substances UST System
§ 50124. Secondary Containment Design
§ 50125. Under-Dispenser Containment
§ 50126. Performance Standards and Design for UST System – Code of Practice
§ 50127 to § 50129. [Reserved.]

§ 50120. Performance Standards for UST Systems.

(a) In order to prevent releases due to structural failure, corrosion, or spills and overfills for as long as the UST system is used to store regulated substances, owners and operators of UST systems must meet all applicable requirements of this Article. UST systems must meet the requirements of this section as follows:

(1) UST systems installed after December 22, 1988, other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must meet the requirements of this section, except as specified in this Article.

(2) Airport hydrant fuel distribution systems and UST systems with field-constructed tanks installed after October 13, 2015 must meet the requirements of this section.

(b) Tanks. Each tank must be properly designed, constructed, and installed, and any portion underground that routinely contains product must be protected from corrosion, in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

(1) The tank is constructed of fiberglass-reinforced plastic; or

(2) The tank is constructed of steel and cathodically protected in

the following manner:

(A) The tank is coated with a suitable dielectric material;

(B) Field-installed cathodic protection systems are designed by a corrosion expert;

(C) Impressed current systems are designed to allow determination of current operating status as required in § 50131(3); and

(D) Cathodic protection systems are operated and maintained in accordance with § 50131 or according to guidelines established by the agency; or

(3) The tank is constructed of steel and clad or jacketed with a non-corrodible material; or

(4) The tank is constructed of metal without additional corrosion protection measures provided that:

(A) The tank is installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life; and

(B) Owners and operators maintain records that demonstrate compliance with the requirements of subparagraph (A) for the remaining life of the tank; or

(5) The tank construction and corrosion protection are determined by the agency to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than paragraphs (1) to (4).

(c) Piping. The piping that routinely contains regulated substances and is in contact with the ground must be properly designed, constructed, installed, and protected from corrosion in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

(1) The piping is constructed of a non-corrodible material; or

(2) The piping is constructed of steel and cathodically protected in the following manner:

(A) The piping is coated with a suitable dielectric material;

(B) Field-installed cathodic protection systems are designed by a corrosion expert;

(C) Impressed current systems are designed to allow determination of current operating status as required in § 50131(3); and

(D) Cathodic protection systems are operated and maintained in accordance with § 50131 or guidelines established by the agency; or

(3) The piping is constructed of metal without additional corrosion protection measures provided that:

(A) The piping is installed at a site that is determined by a corrosion expert to not be corrosive enough to cause it to have a release due to corrosion during its operating life; and

(B) Owners and operators maintain records that demonstrate compliance with the requirements of subparagraph (A) for the remaining life of the piping; or

(4) The piping construction and corrosion protection are determined by the agency to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than the requirements in paragraphs (1) to (3).

(d) Spill and overfill prevention equipment.

(1) Except as provided in paragraphs (2) and (3), to prevent spilling and overfilling associated with product transfer to the UST system, owners and operators must use the following spill and overfill prevention equipment:

(A) Spill prevention equipment that will prevent release of product to the environment when the transfer hose is detached from the fill

pipe (for example, a spill catchment basin); and

(B) Overfill prevention equipment that will:

(i) Automatically shut off flow into the tank when the tank is no more than ninety-five (95%) percent full;

(ii) Alert the transfer operator when the tank is no more than ninety (90%) percent full by restricting the flow into the tank or triggering a high-level alarm; or

(iii) Restrict flow thirty (30) minutes prior to overfilling, alert the transfer operator with a high-level alarm one minute before overfilling, or automatically shut off flow into the tank so that none of the fittings located on top of the tank are exposed to product due to overfilling.

(2) Owners and operators are not required to use the spill and overfill prevention equipment specified in paragraph (1) if:

(A) Alternative equipment is used that is determined by the agency to be no less protective of human health and the environment than the equipment specified in paragraph (1)(A) or (B); or

(B) The UST system is filled by transfers of no more than twenty-five (25) gallons at one time.

(3) Flow restrictors used in vent lines may not be used to comply with paragraph (1)(B) when overfill prevention is installed or replaced after October 13, 2015.

(4) Overfill prevention methods that rely on the use of alarms must have the alarms clearly labeled "overfill alarm" and located where the delivery person can clearly see and hear the alarm in order to immediately stop delivery of the product.

(5) Spill and overfill prevention equipment must be periodically

tested or inspected in accordance with § 50135.

(e) Installation. The UST system must be properly installed in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and in accordance with the manufacturer's instructions.

(f) Certification of installation. All owners and operators must ensure that one or more of the following methods of certification, testing, or inspection is used to demonstrate compliance with subsection (e) by providing a certification of compliance on the "Certification of Underground Storage Tank Installation" form prescribed by the Administrator and in accordance with § 501325(d).

(1) The installer has been certified by the tank and piping manufacturers;

(2) The installer has been certified or licensed by the agency;

(3) The installation has been inspected and certified by a licensed professional engineer with education and experience in UST system installation;

(4) The installation has been inspected and approved by the agency;

(5) All work listed in the manufacturer's installation checklists has been completed and the checklists maintained; or

(6) The owner and operator have complied with another method for ensuring compliance with subsection (e) that is determined by the agency to be no less protective of human health and the environment.

(g) Secondary containment.

(1) UST systems installed after April 11, 2016, other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must be provided with secondary containment that meets the requirements of § 50124, except for suction piping that meets the requirements of § 50141(b)(6).

(2) Airport hydrant fuel distribution systems and UST systems with field-constructed tanks must be provided with

secondary containment that meets the requirements of § 50124, except for:

(A) Suction piping that meets the requirements of § 50141(b)(6);

(B) Piping associated with UST systems with field constructed tanks greater than 50,000 gallons; and

(C) Piping associated with airport hydrant systems.

§ 50121. Upgrading of UST Systems.

(a) All UST systems must comply with one of the following requirements:

(1) UST system performance standards in § 50120(b) to (d);

(2) For airport hydrant fuel distribution systems and UST systems with field-constructed tanks installed on or before October 13, 2015:

(A) The system performance standards in § 50120(b) and (c); and

(B) Not later than October 13, 2018, the system performance standards under § 50120(d); or

(3) Closure requirements under Article 7.

§ 50122. [Reserved.]

§ 50123. Tank and Piping Design for Hazardous Substances UST System.

Owners and operators of hazardous substance UST systems must provide secondary containment for tanks and underground piping that meets the requirements of § 50124

§ 50124. Secondary Containment Design.

(a) Secondary containment systems must be designed, constructed, and installed to:

(1) Contain regulated substances leaked from the primary

containment until they are detected and removed;

(2) Prevent the release of regulated substances to the environment at any time during the operational life of the UST system; and

(3) Be checked for evidence of a release at least every thirty (30) calendar days.

(b) Double-walled tanks must be designed, constructed, and installed to:

(1) Contain a leak from any portion of the inner tank within the outer wall; and

(2) Detect the failure of the inner wall.

(c) External liners (including vaults) must be designed, constructed, and installed to:

(1) Contain one hundred (100%) percent of the capacity of the largest tank within its boundary;

(2) Prevent precipitation and groundwater intrusion from interfering with the ability to contain or detect a leak or release of regulated substances; and

(3) Surround the UST completely to effectively prevent lateral and vertical migration of regulated substances.

§ 50125. Under-Dispenser Containment.

(a) Dispenser systems installed on or after April 11, 2016, must have under-dispenser containment that meets the requirements in this subsection. Under-dispenser containment requirement must:

A. Be liquid-tight on its sides, bottom, and at any penetrations;

B. Be compatible with the substance conveyed by the piping;

C. Allow for visual inspection and access to the components in the containment system; and

D. Be monitored for leaks from the dispenser system with a sensing device that signals the operator of the presence of regulated substances.

§ 50126. Performance Standards and Design for UST System - Code of Practice.

(a) The following current codes of practice may be used to comply with § 50120(b)(1):

(1) Underwriters Laboratories Standard 1316, "Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures"; or

(2) Underwriter's Laboratories of Canada S615, "Standard for Reinforced Plastic Underground Tanks for Flammable and Combustible Liquids".

(b) The following current codes of practice may be used to comply with § 50120(b)(2):

(1) Steel Tank Institute "Specification STI–P3® Specification and Manual for External Corrosion Protection of Underground Steel Storage Tanks";

(2) Underwriters Laboratories Standard 1746, "External Corrosion Protection Systems for Steel Underground Storage Tanks";

(3) Underwriters Laboratories of Canada S603, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids", and S603.1, "Standard for External Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids", and S631, "Standard for Isolating Bushings for Steel Underground Tanks Protected with External Corrosion Protection Systems";

(4) Steel Tank Institute Standard F841, "Standard for Dual Wall Underground Steel Storage Tanks"; or

(5) NACE International Standard Practice SP 0285, "External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection", and Underwriters Laboratories Standard 58, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids".

(c) The following current codes of practice may be used to comply with § 50120(b)(3):

(1) Underwriters Laboratories Standard 1746, "External

Corrosion Protection Systems for Steel Underground Storage Tanks";

(2) Steel Tank Institute ACT–100® Specification F894, "Specification for External Corrosion Protection of FRP Composite Steel Underground Storage Tanks";

(3) Steel Tank Institute ACT–100–U® Specification F961, "Specification for External Corrosion Protection of Composite Steel Underground Storage Tanks"; or

(4) Steel Tank Institute Specification F922, "Steel Tank Institute Specification for Permatank®".

(d) The following current codes of practice may be used to comply with § 50120(c)(1):

(1) Underwriters Laboratories Standard 971, "Nonmetallic Underground Piping for Flammable Liquids"; or

(2) Underwriters Laboratories of Canada Standard S660, "Standard for Nonmetallic Underground Piping for Flammable and Combustible Liquids".

(e) The following current codes of practice may be used to comply with § 50120(c)(2):

(1) American Petroleum Institute Recommended Practice 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems";

(2) Underwriters Laboratories Subject 971A, "Outline of Investigation for Metallic Underground Fuel Pipe";

(3) Steel Tank Institute Recommended Practice R892, "Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems";

(4) NACE International Standard Practice SP 0169, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems"; or

(5) NACE International Standard Practice SP 0285, "External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection".

(f) Tank and piping system installation practices and procedures

described in the following current codes of practice may be used to comply with the requirements of § 50120(e):

(1) American Petroleum Institute Publication 1615, "Installation of Underground Petroleum Storage System";

(2) Petroleum Equipment Institute Publication RP100, "Recommended Practices for Installation of Underground Liquid Storage Systems"; or

(3) National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code" and Standard 30A, "Code for Motor Fuel Dispensing Facilities and Repair Garages".

(g) When designing, constructing, and installing airport hydrant systems and UST systems with field-constructed tanks, owners and operators may use military construction criteria, such as Unified Facilities Criteria (UFC) 3–460–01, "Petroleum Fuel Facilities".

§ 50127 to § 50129. [Reserved.]

ARTICLE 3
GENERAL OPERATING REQUIREMENTS

§ 50130. Spill and Overfill Control
§ 50131. Operation and Maintenance of Corrosion Protection
§ 50132. Compatibility
§ 50133. Repairs Allowed
§ 50134. Notification, Reporting, and Recordkeeping
§ 50135. Periodic Testing of Spill Prevention Equipment and Containment Sumps Used for Interstitial Monitoring of Piping and Periodic Inspection of Overfill Prevention Equipment
§ 50136. Periodic Operation and Maintenance Walkthrough Inspections
§ 50137. Periodic Inspection and Maintenance of Under-Dispenser Containment Sensing Devices
§ 50138. General Operating Requirement – Codes of Practice

§ 50139. [Reserved.]

§ 50130. Spill and Overfill Control.

(a) Owners and operators must ensure that releases due to spilling or overfilling do not occur. The owner and operator must ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling.
(b) The owner and operator must report, investigate, and clean up any spills and overfills in accordance with § 50153.

§ 50131. Operation and Maintenance of Corrosion Protection.

All owners and operators of metal UST systems with corrosion protection must comply with the following requirements to ensure that releases due to corrosion are prevented until the UST system is permanently closed or undergoes a change-in-service pursuant to § 50171:

(1) All corrosion protection systems must be operated and maintained to continuously provide corrosion protection to the metal components of that portion of the tank and piping that routinely contain regulated substances and are in contact with the ground.

(2) All UST systems equipped with cathodic protection systems must be inspected for proper operation by a qualified cathodic protection tester in accordance with the following requirements:

(A) Frequency. All cathodic protection systems must be tested within six (6) months of installation and at least every three (3) years thereafter; and

(B) Inspection criteria. The criteria that are used to determine that cathodic protection is adequate as required by this section must be in accordance with a code of practice developed by a nationally recognized association.

(3) UST systems with impressed current cathodic protection systems must also be inspected every sixty (60) calendar days to ensure the equipment is operating properly.

(4) For UST systems using cathodic protection, records of the operation of the cathodic protection must be maintained, in accordance with § 50134, to demonstrate compliance with the performance standards in this section. These records must provide the following:

(A) The results of the last three (3) inspections required in paragraph (3); and

(B) The results of testing from the last two (2) inspections required in paragraph (2).

§ 50132. Compatibility.

(a) Owners and operators must use an UST system made of or lined with materials that are compatible with the substance stored in the UST system.
(b) Owners and operators must notify the agency at least thirty (30) days prior to switching to a regulated substance containing greater than ten (10%) percent ethanol, greater than twenty (20%) percent biodiesel, or any other regulated substance identified by the agency. In addition, owners and operators with UST systems storing these regulated substances must meet one of the following:

(1) Demonstrate compatibility of the UST system (including the tank, piping, containment sumps, pumping equipment, release detection equipment, spill equipment, and overfill equipment). Owners and operators may demonstrate compatibility of the UST system by using one of the following options:

(A) Certification or listing of UST system equipment or components by a nationally recognized, independent testing laboratory for use with the regulated substance stored; or

(B) Equipment or component manufacturer approval. The manufacturer's approval must be in writing,

indicate an affirmative statement of compatibility, specify the range of biofuel blends the equipment or component is compatible with, and be from the equipment or component manufacturer; or

(2) Use another option determined by the agency to be no less protective of human health and the environment than the options listed in paragraph (1).

(c) Owners and operators must maintain records in accordance with § 50134(d) documenting compliance with subsection (b) for as long as the UST system is used to store the regulated substance.

§ 50133. Repairs Allowed.

(a) Owners and operators of UST systems must ensure that repairs will prevent releases due to structural failure or corrosion as long as the UST system is used to store regulated substances. The repairs must meet the following requirements:

(1) Repairs to UST systems must be properly conducted in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory;

(2) Repairs to fiberglass-reinforced plastic tanks may be made by the manufacturer's authorized representatives or in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory;

(3) Metal pipe sections and fittings that have released product as a result of corrosion or other damage must be replaced. Non-corrodible pipes and fittings may be repaired in accordance with the manufacturer's specifications;

(4) Prior to the return to use of a repaired UST system, any repaired USTs must pass a tank tightness test in accordance with § 50143(3);

(5) Prior to the return to use of a repaired UST system, any repaired piping that routinely contains product must pass a line tightness test in accordance with § 50144(2);

(6) Prior to return to use of a repaired UST system, repairs to

secondary containment areas of tanks and piping used for interstitial monitoring, containment sumps used for interstitial monitoring of piping, and containment walls must have the secondary containment tested for integrity using vacuum, pressure, or liquid methods in accordance with requirements developed by the manufacturer, a code of practice developed by a nationally recognized association or independent testing laboratory, or requirements established by the agency;

(7) Within six (6) months following the repair of any cathodically protected UST system, the cathodic protection system must be tested in accordance with § 50131(2) and(3) to ensure that it is operating properly; and

(8) Prior to the return to use of repaired spill or overfill prevention equipment, the repaired spill or overfill prevention equipment must be tested or inspected, as appropriate, in accordance with § 50135 to ensure it is operating properly.

(b) UST system owners and operators must maintain records, in accordance with § 50134, of each repair until the UST system is permanently closed or undergoes a change-in-service pursuant to § 50171.

§ 50134. Notification, Reporting, and Recordkeeping.

(a) Notification. Owners and operators shall notify the agency of any of the following changes in information relating to an UST or tank system by submitting the "Notification for Underground Storage Tanks" form prescribed by the Administrator:

(1) Planned permanent closure or change-in-service, scheduled excavation work for permanent closure or change-in-service, or completed closure or change-in-service;

(2) Temporary closure or the return to currently-in-use status;

(3) Changes in product dispensing method, dispenser, or under dispenser containment;

(4) Changes in financial responsibility mechanism;

(5) Changes in leak detection method;
(6) Changes in spill and overfill prevention method;
(7) Changes in piping;
(8) Changes in type of regulated substances stored;
(9) Changes in corrosion protection mechanism; and
(10) Installation of or changes in secondary containment.

(b) Timing of notification. Owners and operators shall submit the notifications required in subsection (a) within thirty (30) calendar days following any of the changes requiring notification, except that:

(1) Notification of planned permanent closure or change-in-service must be received by the agency at least thirty (30) calendar days before commencement of excavation work for closure or change-in-service;
(2) Notification of scheduled excavation work for permanent closure or change-in-service must be received by the agency at least seven (7) calendar days before the scheduled work date;
(3) Notification of change in type of regulated substance stored to a regulated substance containing greater than ten (10%) percent ethanol or greater than twenty (20%) percent biodiesel must be received by the agency at least thirty (30) calendar days before the change; and
(4) Notification of temporary closure must be received by the agency within thirty (30) calendar days of the UST system having met the definition of temporary closure in § 50112.

(c) Reporting. Owners and operators must submit the following information to the agency:

(1) Reports of all releases including suspected releases § 50150 and § 50152, spills and overfills § 50153, and confirmed releases § 50161;
(2) Release response actions planned or taken, including initial abatement measures § 50162, initial site characterization § 50163, free product removal § 50164, investigation of soil and groundwater cleanup § 50165, and corrective action plan § 50166.

(3) Quarterly release response reports § 50165.2;
(4) Current evidence of financial responsibility as required in § 501110; and
(5) Notice of changes in Designated Class A or B Operators § 501241(c).

(d) Recordkeeping. Owners and operators must maintain the following information:

(1) A corrosion expert's analysis of site corrosion potential if corrosion protection equipment is not used § 50120(b)(4); § 50120(c)(3);
(2) Documentation of operation of corrosion protection equipment § 50131(4);
(3) Documentation of compatibility for UST systems § 50132(c);
(4) Documentation of UST system repairs § 50133(b);
(5) Documentation of compliance for spill and overfill prevention equipment and containment sumps used for interstitial monitoring of piping § 50135(b);
(6) Documentation of periodic walkthrough inspections § 50136(b);
(7) Documentation of compliance with under-dispenser containment sensing device requirements § 50137(b);
(8) Documentation of compliance with release detection requirements § 50145;
(9) Results of the site investigation conducted at permanent closure or change-in-service § 50174;
(10) Documentation of operator training § 501245;
(11) Permits or variances or both, including all documentation, as specified in § 501334(a); and
(12) Evidence of current financial assurance mechanisms used to demonstrate financial responsibility § 501111.

(e) Availability and maintenance of records.

(1) Owners and operators must keep the required records at the UST site or an alternative location approved by the agency.
(2) Owners and operators must make the records immediately available for inspection by the agency at the UST site.

(3) Permanent closure records required under § 50174 may be maintained or submitted to the agency as provided in § 50174.

(f) Owners and operators of UST systems must cooperate fully with inspections, monitoring, and testing conducted by the agency, as well as requests by the agency for document submission, testing, and monitoring by the owner or operator pursuant to 10 GCA, Chapter 76.

§ 50135. Periodic Testing of Spill Prevention Equipment and Containment Sumps Used for Interstitial Monitoring of Piping and Periodic Inspection of Overfill Prevention Equipment.

(a) Owners and operators of UST systems with spill and overfill prevention equipment and containment sumps used for interstitial monitoring of piping must meet these requirements by October 13, 2018 to ensure the equipment is operating properly and will prevent releases to the environment:

(1) Spill prevention equipment (such as a catchment basin, spill bucket, or other spill containment device) must prevent releases to the environment by meeting one of the following:

(A) The equipment is double walled and the integrity of both walls is periodically monitored at a frequency not less than once every thirty (30) calendar days. Owners and operators must begin meeting the requirements of subparagraph (B) and conduct a test within thirty (30) calendar days of discontinuing periodic monitoring of this equipment; or

(B) The spill prevention equipment is tested at least once every three hundred sixty-five (365) calendar days to ensure the equipment is liquid tight by using vacuum, pressure, or liquid testing in accordance with one of the following criteria:

(i) Requirements developed by the manufacturer. (Note: Owners and operators may use this option only if the manufacturer has developed

requirements.);

(ii) Code of practice developed by a nationally recognized association or independent testing laboratory; or

(iii) Requirements determined by the agency to be no less protective of human health and the environment than the requirements listed in clauses (i) and (ii).

(2) Containment sumps used for interstitial monitoring of piping must prevent releases to the environment by meeting one of the following:

(A) The equipment is double walled and the integrity of both walls is periodically monitored at a frequency not less than annually. Owners and operators must begin meeting the requirements of subparagraph (B) and conduct a test within thirty (30) calendar days of discontinuing periodic monitoring of this equipment; or

(B) The containment sumps used for interstitial monitoring of piping are tested at least once every three (3) years to ensure the equipment is liquid tight by using vacuum, pressure, or liquid testing in accordance with one of the criteria in paragraph (1)(B)(i) to (iii).

(3) Overfill prevention equipment must be inspected at least once every three years. At a minimum, the inspection must ensure that overfill prevention equipment is set to activate at the correct level specified in § 50120(d) and will activate when regulated substance reaches that level. Inspections must be conducted in accordance with one of the criteria in paragraph (1)(B)(i) to (iii).

(b) Owners and operators must maintain records as follows (in accordance with § 50134 for spill prevention equipment, containment sumps used for interstitial monitoring of piping, and overfill prevention equipment:

(1) All records of testing or inspection must be maintained for three (3) years; and

(2) For spill prevention equipment not tested every three hundred sixty-five (365) calendar days and containment sumps used for interstitial monitoring of piping not tested every three (3) years, documentation showing that the prevention equipment is double walled and the integrity of both walls is periodically monitored must be maintained for as long as the equipment is periodically monitored.

§ 50136. Periodic Operation and Maintenance Walkthrough Inspections.

(a) To properly operate and maintain UST systems, not later than October 13, 2018, owners and operators must conduct walkthrough inspections that, at a minimum, check the following equipment as specified below:

(1) Every thirty (30) calendar days:

(A) Spill prevention equipment:

(i) Visually check for damage;

(ii) Remove liquid or debris;

(iii) Check for and remove obstructions in the fill pipe;

(iv) Check the fill cap to make sure it is securely on the fill pipe; and

(v) For double walled spill prevention equipment with interstitial monitoring, check for a leak in the interstitial area; and

(B) Release detection equipment:

(i) Check to make sure the release detection equipment is operating with no alarms or other unusual operating conditions present; and

(ii) Ensure records of release detection testing are reviewed and current;

(2) Annually:

(A) Containment sumps:

(i) Visually check for damage, leaks to the containment area, or releases to the

environment;

(ii) Remove liquid (in contained sumps) or debris; and

(iii) For double walled sumps with interstitial monitoring, check for a leak in the interstitial area; and

(B) Hand held release detection equipment: Check devices such as tank gauge sticks or groundwater bailers for operability and serviceability;

(3) For UST systems receiving deliveries at intervals greater than every thirty (30) calendar days, spill prevention equipment may be checked in accordance with paragraph (1)(A) prior to each delivery; and

(4) For airport hydrant systems, at least once every thirty (30) days if confined space entry according to the Occupational Safety and Health Administration is not required or at least annually if confined space entry is required (see 29 C.F.R. Part 1910):

A. Hydrant pits:

(i) Visually check for any damage;

(ii) Remove any liquid or debris; and

(iii) Check for any leaks; and

B. Hydrant piping vaults: Check for any hydrant piping leaks.

(b) Owners and operators must maintain records, in accordance with § 50134, of operation and maintenance walkthrough inspections for three (3) years. Records must include a list of each area checked, whether each area checked was acceptable or needed action taken, a description of actions taken to correct an issue, and delivery records if spill prevention equipment is checked less frequently than every thirty (30) calendar days due to infrequent deliveries.

§ 50137. Periodic Inspection and Maintenance of Under-Dispenser Containment Sensing Devices.

(a) Sensing devices for under-dispenser containment required by § 50125

must:

(1) Be operated and maintained in accordance with one of the following:
  (A) The manufacturer's instructions;
  (B) A code of practice developed by a nationally recognized association or independent testing laboratory; or
  (C) Requirements determined by the agency to be no less protective of human health and the environment than those in subparagraphs (A) and (B).

(2) Be inspected for proper operation, and electronic and mechanical components tested, at least annually.

(b) UST system owners and operators must maintain records in accordance with § 50134 demonstrating compliance with subsection (a). Written documentation of all inspection, testing, and maintenance must be maintained for at least three (3) years. All records that the UDC sensor and connected equipment are designed to produce must be maintained for at least three (3) years after the record is generated.

§ 50138. General Operating Requirements - Codes of Practice.

(a) The following current codes of practice may be used to comply with § 50130(a):

(1) the transfer procedures described in National Fire Protection Association Standard 385;

(2) "Standard for Tank Vehicles for Flammable and Combustible Liquids" or American Petroleum Institute Recommended Practice 1007;

(3) "Loading and Unloading of MC 306/DOT 406 Cargo Tank Motor Vehicles"; or

(4) Further guidance on spill and overfill prevention appears in American Petroleum Institute Recommended Practice 1621, "Bulk Liquid Stock Control at Retail Outlets".

(b) The following current codes of practice may be used to comply with § 50131(2):

(1) NACE International Test Method TM 0101, "Measurement Techniques Related to Criteria for Cathodic Protection of Underground Storage Tank Systems";

(2) NACE International Test Method TM0497, "Measurement Techniques Related to Criteria for Cathodic Protection on Underground or Submerged Metallic Piping Systems";

(3) Steel Tank Institute Recommended Practice R051, "Cathodic Protection Testing Procedures for STI–P3® USTs";

(4) NACE International Standard Practice SP 0285, "External Control of Underground Storage Tank Systems by Cathodic Protection"; or

(5) NACE International Standard Practice SP 0169, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems".

(c) The following current code of practice may be useful in complying with § 50132:

(1) American Petroleum Institute Recommended Practice 1626, "Storing and Handling Ethanol and Gasoline-Ethanol Blends at Distribution Terminals and Filling Stations".

(d) The following current codes of practice may be used to comply with § 50133(a)(1):

(1) National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code";

(2) American Petroleum Institute Recommended Practice RP 2200, "Repairing Crude Oil, Liquified Petroleum Gas, and Product Pipelines";

(3) American Petroleum Institute Recommended Practice RP 1631, "Interior Lining and Periodic Inspection of Underground Storage Tanks";

(4) National Fire Protection Association Standard 326, "Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair";

(5) National Leak Prevention Association Standard 631, Chapter A, "Entry, Cleaning, Interior Inspection, Repair, and Lining of Underground Storage Tanks";

(6) Steel Tank Institute Recommended Practice R972, "Recommended Practice for the Addition of Supplemental Anodes to STI–P3® Tanks";

(7) NACE International Standard Practice SP 0285, "External Control of Underground Storage Tank Systems by Cathodic Protection"; or

(8) Fiberglass Tank and Pipe Institute Recommended Practice T–95–02, "Remanufacturing of Fiberglass Reinforced Plastic (FRP) Underground Storage Tanks".

(e) The following current codes of practice may be used to comply with § 50133(a)(6):

(1) Steel Tank Institute Recommended Practice R012, "Recommended Practice for Interstitial Tightness Testing of Existing Underground Double Wall Steel Tanks";

(2) Fiberglass Tank and Pipe Institute Protocol, "Field Test Protocol for Testing the Annular Space of Installed Underground Fiberglass Double and Triple-Wall Tanks with Dry Annular Space"; or

(3) Petroleum Equipment Institute Recommended Practice RP1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities".

(f) The following current code of practice may be used to comply with § 50135(a)(1),(2),(3) and 50137(a)(1)(B):

(1) Petroleum Equipment Institute Publication RP1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities".

§ 50139. [Reserved.]

ARTICLE 4
RELEASE DETECTION

§ 50140. General Requirements for all UST Systems

§ 50141. Requirements for Petroleum UST Systems
§ 50142. Requirements for Hazardous Substance UST Systems
§ 50143. Methods of Release Detection for Tanks
§ 50144. Methods of Release Detection for Piping
§ 50145. Release Detection Recordkeeping
§ 50146. Release Detection – Code of Practice
§ 50147 to § 50149. [Reserved.]

§ 50140. General Requirements for all UST Systems.

(a) Owners and operators of UST systems must provide a method, or combination of methods, of release detection that:

(1) Can detect a release from any portion of the tank and the connected underground piping that routinely contains product;

(2) Utilizes equipment compatible with the regulated substances being stored;

(3) Is installed, calibrated, operated, and maintained in accordance with the manufacturer's instructions;

(4) Is operated and maintained, and electronic and mechanical components are tested for proper operation, in accordance with one of the following: manufacturer's instructions; a code of practice developed by a nationally recognized association or independent testing laboratory; or requirements determined by the agency to be no less protective of human health and the environment than the requirements of paragraphs (a)(1) to (3) of this section. All maintenance and service of the release detection equipment must be conducted by a technician with current certification or training appropriate to the equipment serviced. A test of the proper operation must be performed at least every three hundred sixty-five (365) calendar days, or in a time frame recommended by the equipment manufacturer, whichever is more frequent. Beginning October 13, 2018, as applicable to the facility, the test must cover at a minimum the following

components and criteria:

(A) Automatic tank gauge and other controllers: test alarm; verify system configuration; test battery backup;

(B) Probes and sensors: inspect for residual buildup; ensure floats move freely; ensure shaft is not damaged; ensure cables are free of kinks and breaks; test alarm operability and communication with controller;

(C) Automatic line leak detector: test operation to meet criteria in § 50144(1) by simulating a leak;

(D) Vacuum pumps and pressure gauges: ensure proper communication with sensors and controller; and

(E) Hand-held electronic sampling equipment associated with groundwater and vapor monitoring: ensure proper operation; and

(5) Meets the performance requirements in § 50143 or § 50144, as applicable, with any performance claims and their manner of determination described in writing by the equipment manufacturer or installer. In addition, the methods listed in § 50143 (2), (3), (4), (8), (9), and (10) and § 50144(1), (2), and (4) must be capable of detecting the leak rate or quantity specified for that method in the corresponding section of the rule with a probability of detection of 0.95 and a probability of false alarm of 0.05.

(b) When a release detection method operated in accordance with the performance standards in § 50143 or § 50144 indicates a release may have occurred, owners and operators must notify the agency in accordance with Article 5.

(c) Any UST system that cannot apply a method of release detection that complies with the requirements of this Article must complete the change-in-service or closure procedures in Article 7.

§ 50141. Requirements for Petroleum UST Systems.

(a) Tanks. Owners and operators of petroleum UST systems must provide release detection for tanks as follows:

(1) UST systems other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks:

(A) Tanks installed on or before April 11, 2016, must be monitored for releases at least every thirty (30) calendar days using one of the methods listed in § 50143(4) to (9), except that:

(i) UST systems that meet the performance standards in § 50120, and the monthly inventory control requirements in § 50143(1) or (2), may use tank tightness testing (conducted in accordance with § 50143(3) at least every five (5) years until ten (10) years after the tank was installed; and

(ii) Tanks with capacity of 550 gallons or less and tanks with a capacity of 551 to 1,000 gallons that meet the tank diameter criteria in § 50143(2) may use manual tank gauging (conducted in accordance with § 50143(2).

(B) Tanks installed after April 11, 2016 must be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7).

(2) Airport hydrant fuel distribution systems and UST systems with field-constructed tanks with a capacity less than or equal to 50,000 gallons:

(A) Tanks installed before October 13, 2015 must be monitored for releases at least every thirty (30) calendar days using one of the methods listed in § 50143(4) to (9), except that:

(i) UST systems that meet the performance standards in § 50120 and the monthly inventory control requirements in § 50143(1) or (2), may use tank tightness testing (conducted in accordance with § 50143(3) at least every

five (5) years until ten (10) years after the tank was installed; and

(ii) Tanks with capacity of 550 gallons or less and tanks with a capacity of 551 to 1,000 gallons that meet the tank diameter criteria in § 50143(2) may use manual tank gauging (conducted in accordance with § 50143(2).

(B) Tanks installed on or after October 13, 2015 must be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7).

(3) UST systems with field-constructed tanks with a capacity greater than 50,000 gallons:

(A) Tanks installed before October 13, 2015 must be monitored for releases at least every thirty (30) calendar days using one of the methods listed in § 50143(4), (7), (8), and (9) or use one or a combination of the methods of release detection listed in § 50143(10); and

(B) Tanks installed on or after October 13, 2015 must be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7).

(b) Piping. Underground piping that routinely contains regulated substances must be monitored for releases as follows:

(1) Piping installed on or before April 11, 2016, for UST systems other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must meet one of the following:

(A) Pressurized piping. Underground piping that conveys regulated substances under pressure must:

(i) Be equipped with an automatic line leak detector conducted in accordance with § 50144(1); and

(ii) Have an annual line tightness test conducted in accordance with § 50144(2) or have monthly monitoring conducted in accordance with §

50144(3).

(B) Suction piping. Underground piping that conveys regulated substances under suction must:

(i) Have a line tightness test conducted at least every three (3) years and in accordance with § 50144(2);

(ii) Use a monthly monitoring method conducted in accordance with § 50144(3); or

(iii) Meet the standards in paragraph (6)(A) to (E).

(2) Piping installed or replaced after April 11, 2016, for UST systems other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must meet one of the following:

(A) Pressurized piping. Underground piping that conveys regulated substances under pressure must:

(i) Be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7); and

(ii) Be equipped with an automatic line leak detector in accordance with § 50144(1).

(B) Suction piping. Underground piping that conveys regulated substances under suction must:

(i) Be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7); or

(ii) Meet the standards in paragraph (6)(A) to (E).

(3) Piping installed on or after October 13, 2015, for UST systems other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must meet the technical specifications in paragraph (2)(A) or (B).

(4) Piping for UST systems with field-constructed tanks with a capacity less than or equal to 50,000 gallons and not part of an airport hydrant fuel distribution system:

(A) Piping installed before October 13, 2015 must meet the technical specifications in paragraph (1)(A) or (B).

(B) Piping installed on or after October 13, 2015 must meet the technical specifications in paragraph (2)(A) or (B).

(5) Piping for airport hydrant fuel distribution systems and UST systems with field-constructed tanks with a capacity greater than 50,000 gallons must meet one of the following:

(A) Pressurized piping. Underground piping that conveys regulated substances under pressure must:

(i) Be equipped with an automatic line leak detector conducted in accordance with § 50144(1); and

(ii) Have an annual line tightness test conducted in accordance with § 50144(2) or have monthly monitoring conducted in accordance with any of the methods in § 50143(7) to (9) designed to detect a release from any portion of the underground piping that routinely contains regulated substances; or

(iii) Use one or a combination of the methods of release detection listed in § 50144(4).

(B) Suction piping. Underground piping that conveys regulated substances under suction must:

(i) Have a line tightness test conducted at least every three (3) years and in accordance with § 50144(2);

(ii) Use a monthly monitoring method conducted in accordance with § 50143(7) to (9) designed to detect a release from any portion of the underground piping that routinely contains

regulated substances;

(iii) Use one or a combination of the methods of release detection listed in § 50144(4); or

(iv) Meet the standards in paragraph (6)(A) to (E).

(6) No release detection is required for suction piping that is designed and constructed to meet the following standards:

(A) The below-grade piping operates at less than atmospheric pressure;

(B) The below-grade piping is sloped so that the contents of the pipe will drain back into the storage tank if the suction is released;

(C) Only one check valve is included in each suction line;

(D) The check valve is located directly below and as close as practical to the suction pump; and

(E) A method is provided that allows compliance with subparagraphs (B) to (D) to be readily determined.

§ 50142. Requirements for Hazardous Substance UST Systems.

Owners and operators of hazardous substance UST systems must monitor these systems in accordance with § 50143(7) at least every thirty (30) calendar days. In addition, underground piping that conveys hazardous substances under pressure must be equipped with an automatic line leak detector in accordance with § 50144(1).

§ 50143. Methods of Release Detection for Tanks.

Each method of release detection for tanks used to meet the requirements of § 50140 to § 50142 must be conducted in accordance with the following:

(1) Inventory control. Product inventory control (or another test of equivalent performance) must be conducted monthly to

detect a release of at least one (1%) percent of flow-through plus one hundred thirty (130) gallons on a monthly basis in the following manner:

(A) Inventory volume measurements for regulated substance inputs, withdrawals, and the amount still remaining in the tank are recorded each operating day;

(B) The equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest one-eighth of an inch;

(C) If a manual measuring device is used (e.g., a gauge stick), the measurements must be made through a drop tube that extends to within one foot of the tank bottom. Level measurements shall be to the nearest one-eighth of an inch;

(D) The regulated substance inputs are reconciled with delivery receipts by measurement of the tank inventory volume before and after delivery;

(E) Deliveries are made through a drop tube that extends to within one foot of the tank bottom;

(F) Product dispensing is metered and recorded within the state standards for meter calibration or an accuracy of six cubic inches for every five (5) gallons of product withdrawn, and the meter is calibrated every three hundred sixty-five (365) calendar days; and

(G) The measurement of any water level in the bottom of the tank is made to the nearest one-eighth of an inch at least once a month.

(2) Manual tank gauging. Manual tank gauging must meet the following requirements:

(A) Tank liquid level measurements are taken at the beginning and ending of a period using the appropriate minimum duration of test value in the table below during which no liquid is added

to or removed from the tank;

(B) If a manual measuring device is used (e.g., a gauge stick), the measurements must be made through a drop tube that extends to within one foot of the tank bottom. Level measurements shall be to the nearest one-eighth of an inch;

(C) Level measurements are based on an average of two (2) consecutive stick readings at both the beginning and ending of the period;

(D) The equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest one-eighth of an inch;

(E) A release is suspected and subject to the requirements of Article 5 if the variation between beginning and ending measurements exceeds the weekly or monthly standards in the following table:

Nominal tank capacity	Minimum duration of test	Weekly standard (one test)	Monthly standard (four test average)
550 gallons or less	36 hours	10 gallons	5 gallons
551–1,000 gallons (when tank diameter is 64 inches)	44 hours	9 gallons	4 gallons
551–1,000 gallons (when tank diameter is 48 inches)	58 hours	12 gallons	6 gallons
551–1,000 gallons (also requires periodic tank tightness testing)	36 hours	13 gallons	7 gallons
1,001–2,000 gallons (also requires periodic tank tightness testing)	36 hours	26 gallons	13 gallons

(F) Tanks of five hundred fifty (550) gallons or less nominal capacity and tanks with a nominal capacity of five hundred fifty-one (551) to one thousand (1,000) gallons that meet the tank diameter criteria in the table in subparagraph (E) may use manual tank gauging as the sole method of release detection. All other tanks with a nominal capacity of five hundred fifty-one (551) to two thousand (2,000) gallons may

use manual tank gauging in place of inventory control in paragraph (1), combined with tank tightness testing as indicated in the table. Tanks of greater than two thousand (2,000) gallons nominal capacity may not use this method to meet the requirements of this Article.

(3) Tank tightness testing. Tank tightness testing (or another test of equivalent performance) must be capable of detecting a 0.1 gallon per hour leak rate from any portion of the tank that routinely contains product while accounting for the effects of thermal expansion or contraction of the product, vapor pockets, tank deformation, evaporation or condensation, and the location of the water table.

(4) Automatic tank gauging. Equipment for automatic tank gauging that test for the loss of product and conducts inventory control must meet the following requirements:

(A) The automatic product level monitor test can detect a 0.2 gallon per hour leak rate from any portion of the tank that routinely contains product;

(B) The automatic tank gauging equipment must meet the inventory control (or other test of equivalent performance) requirements of paragraph (1); and

(C) The test must be performed with the system operating in one of the following modes:

(i) In-tank static testing conducted at least once every thirty (30) calendar days; or

(ii) Continuous in-tank leak detection operating on an uninterrupted basis or operating within a process that allows

the system to gather incremental measurements to determine the leak status of the tank at least once every thirty (30) calendar days.

(5) Vapor monitoring. Testing or monitoring for vapors within the soil gas of the excavation zone must meet the following requirements:

(A) The materials used as backfill are sufficiently porous (e.g., gravel, sand, crushed rock) to readily allow diffusion of vapors from releases into the excavation area;

(B) The stored regulated substance, or a tracer compound placed in the tank system, is sufficiently volatile (e.g., gasoline) to result in a vapor level that is detectable by the monitoring devices located in the excavation zone in the event of a release from the tank;

(C) The measurement of vapors by the monitoring device is not rendered inoperative by the groundwater, rainfall, or soil moisture or other known interferences so that a release could go undetected for more than thirty (30) calendar days;

(D) The level of background contamination in the excavation zone will not interfere with the method used to detect releases from the tank;

(E) The vapor monitors are designed and operated to detect any significant increase in concentration above background of the regulated substance stored in the tank system, a component or components of that substance, or a tracer compound placed in the tank system;

(F) In the UST excavation zone, the site is assessed to ensure compliance with the requirements in subparagraphs (A) to (D) and to establish the number and positioning of monitoring wells that will detect

releases within the excavation zone from any portion of the tank that routinely contains product; and

(G) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(6) Groundwater monitoring. Testing or monitoring for liquids on the groundwater must meet the following requirements:

(A) The regulated substance stored is immiscible in water and has a specific gravity of less than one;

(B) Groundwater is never more than twenty (20) feet from the ground surface and the hydraulic conductivity of the soils between the UST system and the monitoring wells or devices is not less than 0.01 cm/sec (e.g., the soil should consist of gravels, coarse to medium sands, coarse silts or other permeable materials);

(C) The slotted portion of the monitoring well casing must be designed to prevent migration of natural soils or filter pack into the well and to allow entry of regulated substance on the water table into the well under both high and low groundwater conditions;

(D) Monitoring wells shall be sealed from the ground surface to the top of the filter pack;

(E) Monitoring wells or devices intercept the excavation zone or are as close to it as is technically feasible;

(F) The continuous monitoring devices or manual methods used can detect the presence of at least one-eighth of an inch of free product on top of the groundwater in the monitoring wells;

(G) Within and immediately below the UST system excavation zone, the site is assessed to ensure compliance with the requirements in

subparagraphs (A) to (E) and to establish the number and positioning of monitoring wells or devices that will detect releases from any portion of the tank that routinely contains product; and

(H) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(7) Interstitial monitoring. Interstitial monitoring between the UST system and a secondary barrier immediately around or beneath it may be used, but only if the system is designed, constructed, and installed to detect a leak from any portion of the tank that routinely contains product and also meets one of the following requirements:

(A) For double walled UST systems, the sampling or testing method can detect a leak through the inner wall in any portion of the tank that routinely contains product;

(B) For UST systems with a secondary barrier within the excavation zone, the sampling or testing method used can detect a leak between the UST system and the secondary barrier;

(i) The secondary barrier around or beneath the UST system consists of artificially constructed material that is sufficiently thick and impermeable (at least 10^{-6} cm/sec for the regulated substance stored) to direct a leak to the monitoring point and permit its detection;

(ii) The barrier is compatible with the regulated substance stored so that a leak from the UST system will not cause a deterioration of the barrier allowing a

release to pass through undetected;

(iii) For cathodically protected tanks, the secondary barrier must be installed so that it does not interfere with the proper operation of the cathodic protection system;

(iv) The groundwater, soil moisture, or rainfall will not render the testing or sampling method used inoperative so that a release could go undetected for more than thirty (30) calendar days;

(v) The site is assessed to ensure that the secondary barrier is always above the groundwater and not in a twenty-five-year flood plain, unless the barrier and monitoring designs are for use under such conditions; and,

(vi) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(C) For tanks with an internally fitted liner, an automated device can detect a leak between the inner wall of the tank and the liner, and the liner is compatible with the substance stored.

(8) Statistical inventory reconciliation. Release detection methods based on the application of statistical principles to inventory data similar to those described in paragraph (1) must meet the following requirements:

(A) Report a quantitative result with a calculated leak rate;

(B) Be capable of detecting a leak rate of 0.2 gallon per hour or a release of one hundred fifty (150) gallons within thirty (30) calendar days; and

(C) Use a threshold that does not exceed one-half the minimum detectible leak rate.

(9) Other methods. Any other type of release detection method, or combination of methods, can be used if:

(A) It can detect a 0.2 gallon per hour leak rate or a release of one hundred fifty (150) gallons within a month with a probability of detection of 0.95 and a probability of false alarm of 0.05; or

(B) The owner and operator can demonstrate to the agency that the method can detect a release as effectively as any of the methods allowed in paragraphs (3) to (8), and the agency approves the method. In comparing methods, the agency shall consider the size of release that the method can detect and the frequency and reliability with which it can be detected. If the method is approved, the owner and operator must comply with any conditions imposed by the agency on its use to ensure the protection of human health and the environment.

(10) Methods of release detection for field-constructed tanks. One or a combination of the following methods of release detection for tanks may be used when allowed by § 50141.

(A) Conduct an annual tank tightness test that can detect a 0.5 gallon per hour leak rate;

(B) Use an automatic tank gauging system to perform release detection at least every thirty (30) calendar days that can detect a leak rate less than or equal to one (1) gallon per hour. This method must be combined with a tank tightness test that can detect a 0.2 gallon per hour leak rate performed at least every three (3) years;

(C) Use an automatic tank gauging system to perform release detection at least every thirty (30) calendar days that can detect a leak rate less than or equal to two (2) gallons per hour. This method must be combined with a tank tightness test that can detect a 0.2 gallon per hour leak rate performed at least every

two (2) years;

(D) Perform vapor monitoring (conducted in accordance with paragraph (5) for a tracer compound placed in the tank system) capable of detecting a 0.1 gallon per hour leak rate at least every two (2) years;

(E) Perform inventory control (conducted in accordance with Department of Defense Directive 4140.25, ATA Airport Fuel Facility Operations and Maintenance Guidance Manual, or equivalent procedures) at least every thirty (30) calendar days that can detect a leak equal to or less than 0.5 percent of flow-through; and

(i) Perform a tank tightness test that can detect a 0.5 gallon per hour leak rate at least every two (2) years; or

(ii) Perform vapor monitoring or groundwater monitoring (conducted in accordance with paragraph (5) or (6), respectively, for the stored regulated substance) at least every thirty (30) calendar days; or

(F) Another method approved by the agency if the owner and operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in subparagraphs (A) to (E). In comparing methods, the agency shall consider the size of release that the method can detect and the frequency and reliability of detection.

§ 50144. Methods of Release Detection for Piping.

Each method of release detection for piping used to meet the requirements of § 50140 to § 50142 must be conducted in accordance with the following:

(1) Automatic line leak detectors. Methods which alert the operator to the presence of a leak by restricting or shutting off the flow of regulated substances through piping may be used only if they detect leaks of three (3) gallons per hour at

ten (10) pounds per square inch line pressure within one hour. An annual test of the operation of the leak detector must be conducted in accordance with § 50140(a)(4).

(2) Line tightness testing. A periodic test of piping may be conducted only if it can detect a 0.1 gallon per hour leak rate at one and one-half times the operating pressure.

(3) Applicable tank methods. Any of the methods in § 50143(5) to (9) may be used if they are designed to detect a release from any portion of the underground piping that routinely contains regulated substances.

(4) Methods of release detection for piping associated with airport hydrant systems and field-constructed tanks. One or a combination of the following methods of release detection for piping may be used when allowed by § 50141.

(A) (i) Perform a semiannual or annual line tightness test at or above the piping operating pressure in accordance with the table below.

MAXIMUM LEAK DETECTION RATE PER TEST SECTION VOLUME

Test section volume (gallons)	Semiannual test—leak detection rate not to exceed (gallons per hour)	Annual test—leak detection rate not to exceed (gallons per hour)
<50,000	1.0	0.5
≥50,000 to <75,000	1.5	0.75
≥75,000 to <100,000	2.0	1.0
≥100,000	3.0	1.5

(ii) Piping segment volumes ≥100,000 gallons not capable of meeting the maximum 3.0 gallon per hour leak rate for the semiannual test may be tested at a leak rate up to 6.0 gallons per hour according to the following schedule:

PHASE IN FOR PIPING SEGMENTS ≥100,000 GALLONS IN VOLUME

First test	Not later than three years after the effective date of these rules (may use up to 6.0 gph leak rate).
Second test	Between three and six years after the effective date of these rules (may use up to 6.0 gph leak rate).
Third test	Between six and seven years after the effective date of these rules (must use 3.0 gph for leak rate).
Subsequent tests..	Not later than seven years after the effective date of these rules, begin using semiannual or annual line testing according to the Maximum Leak Detection Rate Per Test Section Volume table above.

(B) Perform vapor monitoring (conducted in accordance with § 50143(5) for a tracer compound placed in the tank system) capable of detecting a 0.1 gallon per hour leak rate at least every two (2) years;

(C) Perform inventory control (conducted in accordance with Department of Defense Directive 4140.25, ATA Airport Fuel Facility Operations and Maintenance Guidance Manual, or equivalent procedures) at least every thirty (30) calendar days that can detect a leak equal to or less than 0.5 percent of flow-through; and

(i) Perform a line tightness test (conducted in accordance with subparagraph (A) using the leak rates for the semiannual test) at least every two (2) years; or

(ii) Perform vapor monitoring or groundwater monitoring (conducted in accordance with § 50143(5) or (6), respectively, for the stored regulated substance) at least every thirty (30) calendar days; or

(D) Another method approved by the agency if the owner and operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in subparagraphs (A) to (C). In comparing

methods, the agency shall consider the size of release that the method can detect and the frequency and reliability of detection.

§ 50145. Release Detection Recordkeeping.

All UST system owners and operators must maintain records in accordance with § 50134 demonstrating compliance with all applicable requirements of this subchapter. These records must include the following:

(1) All written performance claims pertaining to any release detection system used, and the manner in which these claims have been justified or tested by the equipment manufacturer or installer, must be maintained for the operating life of the UST system. Records of site assessments required under § 50143(5)(F) and (6)(G) must be maintained for as long as the methods are used. Records of site assessments developed after October 13, 2015, must be signed by a professional engineer or professional geologist, or equivalent licensed professional with experience in environmental engineering, hydrogeology, or other relevant technical discipline acceptable to the agency;

(2) The results of any sampling, testing, or monitoring must be maintained for at least three (3) years, except as follows:

(A) The results of annual operation tests conducted in accordance with § 50140(a)(4) must be maintained for three (3) years. At a minimum, the results must list each component tested, indicate whether each component tested meets criteria in § 50140(a)(4) or needs to have action taken, and describe any action taken to correct an issue;

(B) The results of tank tightness testing conducted in accordance with § 50143(3) must be retained until the next test is conducted; and

(C) The results of tank tightness testing, line tightness

testing, and vapor monitoring using a tracer compound placed in the tank system conducted in accordance with § 50143(10) or § 50144(4) must be retained until the next test is conducted;

(3) All records that the equipment being utilized to monitor or maintain the UST system is designed to produce must be maintained for at least three (3) years after the record is generated; and

(4) Written documentation of all calibration, maintenance, and repair of release detection equipment permanently located on-site must be maintained for at least three (3) years. Any schedules of required calibration and maintenance provided by the release detection equipment manufacturer must be retained for five (5) years from the date of installation.

§ 50146. Release Detection - Code of Practice.

The following current code of practice may be used to comply with § 50140(a)(4):

(1) Petroleum Equipment Institute Publication RP1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities"; and

(2) Practices described in the American Petroleum Institute Recommended Practice RP 1621, "Bulk Liquid Stock Control at Retail Outlets" may be used, where applicable, as guidance in meeting the requirements of § 50143(1).

§ 50147 to § 50149. [Reserved;]

ARTICLE 5
RELEASE REPORTING, INVESTIGATION, AND CONFIRMATION

§ 50150. Reporting of Suspected Release

§ 50151. Investigation of Off-site Impacts
§ 50152. Release Investigation and Confirmation Steps
§ 50153. Reporting and Cleanup of Spills and Overfill
§ 50154 to § 50159. [Reserved.]

§ 50150. Reporting of Suspected Release.

Owners and operators of UST systems must notify the agency within twenty-four (24) hours and follow the procedures in § 50152 for any of the following conditions:

(1) The discovery by any person of evidence of released regulated substances at the UST site or in the surrounding area (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface water).

(2) Unusual UST or tank system operating conditions observed or experienced by owners and operators (such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST system, an unexplained presence of water in the tank, or liquid in the interstitial space of secondarily contained systems), unless:

(A) The system equipment or component is found not to be releasing regulated substances to the environment;

(B) Any defective system equipment or component is immediately repaired or replaced; and

(C) For secondarily contained systems, except as provided for in § 50143(7)(B)(iv), any liquid in the interstitial space not used as part of the interstitial monitoring method (for example, brine filled) is immediately removed.

(3) Monitoring results, including investigation of an alarm, from a release detection method required under § 50141 and § 50142 that indicate a release may have occurred unless:

(A) The monitoring device is found to be defective, and is

immediately repaired, recalibrated or replaced, and additional monitoring does not confirm the initial result;

(B) The leak is contained in the secondary containment and:

(i) Except as provided for in § 50143(7)(B)(iv), any liquid in the interstitial space not used as part of the interstitial monitoring method (for example, brine filled) is immediately removed; and

(ii) Any defective system equipment or component is immediately repaired or replaced;

(C) In the case of inventory control described in § 50143(1), a second month of data does not confirm the initial result or the investigation determines no release has occurred; or

(D) The alarm was investigated and determined to be a non-release event (for example, from a power surge or caused by filling the tank during release detection testing).

§ 50151. Investigation of Off-site Impacts.

When required by the agency, owners and operators of UST systems must follow the procedures in § 50152 to determine if the UST system is the source of off-site impacts. These impacts include the discovery of regulated substances (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface and drinking waters) that has been observed by the agency or brought to the agency's attention by any person.

§ 50152. Release Investigation and Confirmation Steps.

(a) Unless release response action is initiated in accordance with Article 6, owners and operators must immediately investigate and

confirm all suspected releases of regulated substances requiring reporting under § 50150 within seven (7) calendar days following the discovery of the suspected release, unless a written request for extension of time is granted by the Administrator.

(b) Investigations and confirmations required in subsection (a) must use the following steps or another procedure approved by the agency:

(1) System test. Owners and operators must conduct tests (according to the requirements for tightness testing in § 50143(3) and § 50144(2) or, as appropriate, secondary containment testing described in § 50133(a)(6).

(A) The test must determine whether:

(i) A leak exists in that portion of the tank that routinely contains product, or the attached delivery piping; or

(ii) A breach of either wall of the secondary containment has occurred.

(B) If the system test confirms a leak into the interstice or a release, owners and operators must repair, replace, or close the UST system. In addition, owners and operators must begin release response action in accordance with Article 6 if the test results for the system, tank, or delivery piping indicate that a release exists.

(C) Further investigation is not required if the test results for the system, tank, and delivery piping do not indicate that a release exists and if environmental contamination is not the basis for suspecting a release.

(D) Owners and operators must conduct a site assessment as described in paragraph (2) if the test results for the system, tank, and delivery piping do not indicate that a release exists but environmental contamination is the basis for suspecting a release.

(2) Site assessment. Owners and operators must measure for

the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the nature of the stored substance, the type of initial alarm or cause for suspicion, the type of backfill and surrounding soil, the depth and flow of groundwater, and other factors as appropriate for identifying the presence and source of the release.

(A) If the test results for the excavation zone or the UST site indicate that a release has occurred, owners and operators must begin release response action in accordance with Article 6;

(B) If the test results for the excavation zone or the UST site do not indicate that a release has occurred, further investigation is not required.

(c) If it is determined that a release has not occurred, owners and operators must report the results of the investigation in writing to the agency within thirty (30) calendar days following discovery of the suspected release. The report shall include, but not be limited to, results of the tests required by subsection (b) as well as performance claims pursuant to § 50140(a)(5).

§ 50153. Reporting and Cleanup of Spills and Overfill.

(a) Owners and operators of UST systems must contain and immediately clean up all spills and overfills in a manner which is protective of human health and the environment as set forth in § 50165.3.

(b) Owners and operators must notify the agency within twenty-four (24) hours and begin release response action in accordance with Article 6 in the following cases:

(1) Spill or overfill of petroleum that results in a release to the environment that exceeds twenty-five (25) gallons or that causes a sheen on nearby surface waters; and

(2) Spill or overfill of hazardous substances that result in a release to the environment that equals or exceeds its reportable quantity under CERCLA (40 CFR part 302).

(c) Owners and operators of UST systems must contain and immediately clean up a spill or overfill of petroleum that is less than twenty-five (25) gallons or a spill or overfill of a hazardous substance that is less than the reportable quantity. If cleanup cannot be accomplished within twenty-four (24) hours, then the owners and operators must immediately notify the agency of the incident and continue cleaning up the spill or overfill. Owners and operators must also complete and submit to the agency a written report of the actions taken in response to the spill or overfill within fourteen (14) calendar days.

(d) An owner or operator must submit the appropriate forms listed in § 501111(b) documenting current evidence of financial responsibility to the Administrator within thirty (30) calendar days after identifying a release from an underground storage tank or tank system required to be reported under this section.

§ 50154 to § 50159. [Reserved.]

ARTICLE 6
RELEASE RESPONSE ACTION

§ 50160. General
§ 50161. Immediate Response Action
§ 50161.1. Posting of Signs
§ 50162. Initial Abatement Measures and Site Assessment
§ 50163. Initial Site Characterization
§ 50164. Free Product Removal
§ 50165. Investigation for Soil and Groundwater Cleanup
§ 50165.1. Notification of Confirmed Release
§ 50165.2. Release Response Reporting
§ 50165.3. Site Cleanup Criteria
§ 50166. Corrective Action

§ 50167. Public Participation for Corrective Action Plans
§ 50168 to § 50169. [Reserved.]

§ 50160. General.

Owners and operators of petroleum or hazardous substance UST systems must, in response to a confirmed release from the UST system, comply with the requirements of this Article, except for USTs excluded under § 50110(b) and UST systems subject to RCRA Subtitle C corrective action requirements under section 3004(u) of the Resource Conservation and Recovery Act, as amended.

§ 50161. Immediate Response Action.

(a) Upon confirmation of a release in accordance with § 50152 or after a release from the UST system is identified in any other manner, owners and operators must perform the following response actions within twenty-four (24) hours:

(1) Report the release to the agency by telephone;
(2) Take necessary actions to prevent any further release of the regulated substance into the environment, including removal of as much of the regulated substance from the UST or tank system as possible;
(3) Identify and mitigate any safety hazards (such as fire, explosion, and vapor hazards) posed by the release of the regulated substance; and
(4) Take necessary action to minimize the spread of contamination.

(b) Within seven (7) calendar days of confirmation, owners and operators must submit to the agency a written notice of confirmation. The notice shall include, but not be limited to, the following information: source of the release, method of discovery and confirmation, estimated quantity of substance released, type of substance released, immediate hazards, release impact, migration pathways, and actions taken.
(c) An owner or operator must submit the appropriate forms listed in §

501111(b) documenting current evidence of financial responsibility to the Administrator within thirty (30) calendar days after identifying a release from an underground storage tank or tank system required to be reported under this section.

§ 50161.1. Posting of Signs.

(a) If the agency determines that posting of signs is appropriate, owners and operators shall post signs around the perimeter of the site informing passersby of the potential hazards. In this instance, "site" means an area where contamination poses an immediate health risk or an area where contaminated media is exposed to the surface.
(b) Signs shall be placed at each entrance to the site and at other locations in sufficient numbers to be seen from any approach to the site.
(c) Signs shall be legible and readable from a distance of at least twenty-five (25) feet. The sign legend shall read, "Caution Petroleum/Hazardous Substance Contamination - Unauthorized Personnel Keep Out". Other sign legends may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the site and that entry onto the site may be dangerous. A contact person and telephone number shall be listed on the sign.
(d) The sign may be removed upon determination by the agency that no further release response action is necessary or that posting of signs is no longer appropriate.

§ 50162. Initial Abatement Measures and Site Assessment.

(a) Unless directed to do otherwise by the agency, owners and operators must perform the following abatement measures:

(1) Continue to remove as much of the regulated substance from the UST system as is necessary to prevent further release to the environment;

(2) Visually inspect the area around the UST or tank system for evidence of any aboveground releases or exposed belowground releases and continue to take necessary

actions to minimize the spread of contamination and to prevent further migration of the released substance into surrounding soils, air, surface water, and groundwater;

(3) Continue to monitor and mitigate any additional fire and safety hazards posed by vapors or free product that have migrated from the UST excavation zone and entered into subsurface structures (such as sewers or basements);

(4) Remedy hazards (such as dust and vapors and the potential for leachate generation) posed by contaminated soils and debris that are excavated or exposed as a result of release confirmation, site investigation, abatement, or release response action activities;

(5) Conduct an assessment of the release by measuring for the presence of a release where contamination is most likely to be present at the UST site, unless the presence and source of the release have been confirmed in accordance with the site assessment required by § 50152(b) or the site assessment required for change-in-service or permanent closure in § 50172(a). In selecting sample types, sample locations, and measurement methods, the owner and operator must consider the nature of the stored substance, the type of backfill and surrounding soil, depth and flow of groundwater and other factors as appropriate for identifying the presence and source of the release;

(6) Investigate to determine the possible presence of free product, and begin free product removal in accordance with § 50164;

(7) Remove or remediate contaminated soil at the site to the extent necessary to prevent the spread of free product; and

(8) If any of the remedies in this section include treatment or disposal of contaminated soils, owners or operators must comply with all applicable local, state, and federal requirements.

(b) Within twenty (20) calendar days after release confirmation, or within another reasonable period of time determined by the agency, owners and

operators must submit a report to the agency summarizing the initial abatement steps taken under subsection (a) and any resulting information or data.

§ 50163. Initial Site Characterization.

(a) Owners and operators must assemble information about the site and the nature of the release, including information gained while confirming the release or completing the initial abatement measures in § 50160 and § 50161. This information must include, but is not necessarily limited to the following:

(1) Data on the nature and estimated quantity of release;

(2) Data from available sources and all previous site investigations concerning the following factors: surrounding populations, water quality, use and approximate locations of wells potentially affected by the release, subsurface soil conditions, locations of subsurface sewers, climatological conditions, and land use;

(3) Results of the site assessment required under § 50162(a)(5); and

(4) Results of the free product investigations required under § 50162(a)(6), to be used by owners and operators to determine whether free product must be recovered under § 50164.

(b) Within forty-five (45) calendar days of release confirmation, or another reasonable period of time determined by the agency, owners and operators must submit the information collected in compliance with subsection (a) to the agency in a manner that demonstrates its applicability and technical adequacy.

§ 50164. Free Product Removal.

(a) At sites where investigations under § 50162(a)(6) indicate the presence of free product, owners and operators must remove free product to the maximum extent practicable as determined by the agency while continuing, as necessary, any actions initiated under §§ 50161 to 50163, or

preparing for actions required under §§ 50165 to 50166. In meeting the requirements of this section, owners and operators must:

(1) Conduct free product removal in a manner that minimizes the spread of contamination into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site, and that properly treats, discharges or disposes of recovery byproducts in compliance with applicable local, state, and federal regulations;

(2) Use abatement of free product migration as a minimum objective for the design of the free product removal system;

(3) Handle any flammable products in a safe and competent manner to prevent fires or explosions; and

(4) Prepare and submit to the agency, within forty-five (45) calendar days after confirming a release, a free product removal report that provides at least the following information:

(A) The name of the person responsible for implementing the free product removal measures;

(B) The estimated quantity, type, and thickness of free product observed or measured in wells, boreholes, and excavations;

(C) The type of free product recovery system used;

(D) Whether any discharge will take place on-site or off-site during the recovery operation and where this discharge will be located;

(E) The type of treatment applied to, and the effluent quality expected from, any discharge;

(F) All actions already performed or currently underway to remove free product, including steps that have been or are being taken to obtain necessary permits for any discharge;

(G) The disposition of the recovered free product; and

(H) Schedule for completion of free product removal.

(b) Owners and operators shall initiate free product removal as soon as practicable but no later than thirty (30) calendar days following confirmation of a release, or sooner if directed by the agency.

§ 50165. Investigation for Soil and Groundwater Cleanup.

(a) In order to determine the full extent and location of soils contaminated by the release and the presence and concentrations of dissolved product contamination in the groundwater and surface water, owners and operators must conduct investigations of the release, the release site, and the surrounding area possibly affected by the release if any of the following conditions exist:

(1) There is evidence that groundwater wells have been affected by the release (e.g., as found during release confirmation or previous release response actions);

(2) Free product is found to need recovery in compliance with § 50164;

(3) There is evidence that contaminated soils may be in contact with groundwater (e.g., as found during conduct of the initial response measures or investigations required under §§ 50160 to 50164; and

(4) The agency requests an investigation, based on the potential effects of contaminated soil or groundwater on nearby surface water and groundwater resources.

(b) Owners and operators must include information collected in accordance with this section with each quarterly report required pursuant to § 50165.2.

§ 50165.1. Notification of Confirmed Release.

(a) Within ninety (90) calendar days following confirmation of a release, the owner and operator shall notify those members of the public directly affected by the release in writing of the release and the proposed response to the release, including a historical account of actions performed since the discovery of the release. Members of the public directly affected by the release shall include:

(1) Persons who own, hold a lease for, or have easements at, any property on which the regulated substance released from the UST was discovered; and

(2) Other persons identified by the Administrator.

(b) The owner and operator shall send a letter to all members of the public directly affected by the release. Model language for the letter shall be provided by the agency and shall include at least the following information:

(1) Name and address of the UST or UST system;

(2) Statement that a release of regulated substance has been confirmed at the UST or UST system;

(3) Name of a contact person at the agency; and

(4) Reference to an attached factsheet pursuant to subsection (c).

(c) The letter to the members of the public directly affected by the release shall include a factsheet which contains the following information:

(1) Name and address of the UST or UST system;

(2) Name and address of the owner and operator of the UST or UST system;

(3) Name, address, and telephone contact of the party performing the cleanup activities;

(4) Date of the confirmed release;

(5) Nature and extent of the confirmed release;

(6) Summary of measures taken to assess the release and extent of contamination; and

(7) Summary of the proposed response to the release.

(d) The factsheet shall be updated on a quarterly basis and sent to all members of the public directly affected by the release. If additional members of the public directly affected by the release are identified in the

course of release response actions, then the owner and operator shall provide those persons with all previous and future letters and factsheets.
(e) The owner and operator shall include in the quarterly report required pursuant to § 50165.2 the following information:

(1) Copy of the letter pursuant to subsection (b);
(2) List of the members of the public directly affected by the release and to whom the letter was sent; and
(3) Copies of the factsheet and amended factsheets pursuant to subsections (c) and (d).

§ 50165.2. Release Response Reporting.

(a) No later than ninety (90) calendar days following the confirmation of a release, owners and operators must submit to the agency a written report in the format specified by the agency. The report must include:

(1) All release response actions taken pursuant to this Article during the first ninety-day (90) period (first quarter); and
(2) A plan for future release response actions to be taken.

(b) Beginning one hundred eighty (180) calendar days following confirmation of a release, owners and operators must submit to the agency written quarterly progress reports and an electronic copy of the written report in a format specified by the agency. The reports must document:

(1) All response actions taken pursuant to this subchapter after the last reported date;
(2) A plan for future release response actions to be taken; and
(3) Information required pursuant to § 50165.1.

(c) Quarterly progress reports are not required if:

(1) Response actions have met the requirements of § 50165.3; and
(2) A final quarterly report has been submitted.

§ 50165.3. Site Cleanup Criteria.

(a) Owners and operators must remediate soil, surface water, and groundwater, and materials contaminated by releases from USTs or tank systems in a manner that is protective of human health and the environment and achieves cleanup as described in subsection (b).
(b) Owners and operators must remediate contaminated soil, groundwater, and surface water at the site to residual concentrations that meet one of the following criteria:

(1) Default Tier 1 Screening Levels as presented in Table 1 in subsection (e); or

(2) Site-specific action levels as approved by the agency.

Owners and operators should consult with the agency on how the standards in this paragraph can be met. Site-specific action levels must take into account the following factors:

(A) For systemic toxicants, acceptable levels shall represent concentration levels to which the human population may be exposed without adverse effect during a lifetime or part of a lifetime, and incorporating an adequate margin of safety;

(B) For known or suspected carcinogens, acceptable levels are generally concentration levels in soil, groundwater and vapor that represent an excess upper bound lifetime cancer risk to an individual of between 10^{-4} and 10^{-6} using information on the relationship between dose and response. The 10^{-6} excess risk level shall be used as the point of departure for determining acceptable levels for alternatives when chemical-specific state or federal requirements are not available or are not sufficiently protective because of the presence of multiple contaminants at the site or multiple pathways of exposure;

(C) Impacts to ecological receptors, including but not limited to plants and animals; and

(D) Other applicable requirements, including but not

limited to nuisance concerns for odor and taste, if applicable.

(c) The agency may require the owners and operators to modify cleanup activities being performed at a site if the agency determines that the activities are not being carried out in accordance with this subchapter, or are not achieving cleanup levels that are protective of human health and the environment. The agency may impose modifications to cleanup activities by written notice to the owners and operators, and the owners and operators must implement necessary changes to the cleanup activities in response to the agency's notice by a time schedule established by the agency.

(d) A schedule for estimated completion of site cleanup shall be included in each fourth quarter report required pursuant to § 50165.2(b).

(e) The figure labeled "Table 1. Tier 1 Screening Levels of Soil and Groundwater" is made a part of this subsection.

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Table 1. Tier 1 Screening Levels for Soil and Groundwater

Contaminant	DRINKING WATER SOURCE THREATENED				DRINKING WATER SOURCE NOT THREATENED			
	Groundwater (ug/l)	Basis[1]	Soil (mg/kg)	Basis[2]	Groundwater (ug/l)	Basis[3]	Soil (mg/kg)	Basis[2]
Acenaphthene	15	-	120	L/VI	15	-	40	L/VI
Benzene	5.0	DWP	0.30	L	71	CAT	0.77	VI
Benzo(a)pyrene	0.05	-	3.6	DE	0.05	-	3.6	DE
Dichloroethylene, cis 1,2-	70	DWP	0.36	VI	620	CAT	0.36	VI
Dichloroethylene, trans 1,2-	100	DWP	3.6	VI	560	CAT	3.6	VI
Ethylbenzene	7.3	CAT	0.90	L	7.3	CAT	0.90	L
Fluoranthene	0.05	-	87	L	0.05	-	87	L
Lead	2.5	CAT	200	DE	2.5	CAT	200	DE
Methyl Tert Butyl Ether (MTBE)	5.0	DWS	0.028	L	730	CAT	2.3	VI
Naphthalene	12	CAT	3.1	L	12	CAT	3.1	L
Polychlorinated Biphenyls (PCBs)	0.014	-	1.2	DE	0;014	-	1.2	DE
Tetrachloethylene (PCE)	5.0	DWP	0.098	VI	53	CAT	0.098	VI
Toluene	9.8	CAT	0.78	L	9.8	CAT	0.78	L
TPH-gasolines	300	DWP	100	GC	500	CAT	100	GC
TPH-middle distillates	400	DWP	220	DE	640	CAT	220	DE
TPH-residual fuels	500	DWS	500	GC	640	CAT	500	GC
Trichloroethylene	5.0	DWP	0.089	VI	47	CAT	0.089	VI
Vinyl Chloride	2.0	DWP	0.036	VI	18	VI	0.036	VI
Xylenes	13	CAT	1.4	L	13	CAT	1.4	L

Notes to Table 1.

1. Drinking water screening levels are the lowest of screening levels for: drinking water primary maximum contaminant levels based on toxicity ("DWP"), drinking water secondary maximum contaminant levels based on taste and odor concerns ("DWS"), vapor intrusion ("VI"), and chronic aquatic toxicity ("CAT").

2. Soil screening levels are the lowest of screening levels for: direct exposure ("DE"), vapor intrusion ("VI"), leaching ("L"), and gross contamination ("GC").

3. Non-drinking water screening levels are the lowest of screening levels vapor intrusion ("VI"), chronic aquatic toxicity ("CAT"), and gross contamination ("GC").

§ 50166. Corrective Action.

(a) The agency may require that the owner and operator submit a written corrective action plan for responding to a release, if one or more of the following minimum threshold criteria are met:

(1) Actual or probable release to groundwater which is a drinking water supply;
(2) Actual or probable release to surface water which is a drinking water supply;
(3) Actual or probable release to air that poses a threat to public health;
(4) Actual or probable release to and extensive contamination of soil that poses a direct contact hazard due to uncontrolled access;
(5) Actual or probable existence of uncontrolled regulated substances that pose a direct contact hazard due to uncontrolled access;
(6) Actual or probable adverse impact to natural resources;
(7) Actual or probable imminent danger of fire or explosion; or

(8) A determination by the Administrator that a release poses a substantial endangerment to public health or welfare, the environment, or natural resources.

(b) If a plan is required, owners and operators must submit the plan to the agency in a format established by the agency within thirty (30) calendar days of the agency's request, unless an extension of time is granted by the agency.

(c) Corrective action plans which are required to be submitted to the agency shall be subject to the review and discretionary approval of the agency in accordance with the procedures set forth in this section. Owners and operators are responsible for submitting a corrective action plan that provides for adequate protection of human health and the environment as determined by the agency and must make necessary modifications to the plan when directed to do so by the agency.

(d) The agency will approve the corrective action plan only after ensuring that implementation of the plan will adequately protect human health, safety, and the environment. In making this determination, the agency will consider the following factors as appropriate:

(1) Physical and chemical characteristics of the regulated substance, including its toxicity, persistence, and potential for migration;

(2) Hydrogeologic characteristics of the facility and the surrounding area;

(3) Proximity, quality, and current and future uses of nearby surface water and groundwater;

(4) Potential effects of residual contamination on nearby surface water and groundwater;

(5) An exposure assessment; and

(6) All other information assembled in compliance with this subchapter.

(e) The public participation procedures set forth in § 50167 apply to all corrective action plans submitted under this section.

(f) Upon approval of a corrective action plan, owners and operators must implement the plan, including any modifications to the plan made by the agency. Owners and operators must monitor, evaluate, and report

quarterly to the agency the results of implementing the corrective action plan pursuant to this section and § 50165.2.

(g) Owners and operators who have been requested by the agency to submit a corrective action plan are encouraged to begin cleanup of contaminated soils, surface water, groundwater, and materials before the plan is approved by the agency provided that they:

(1) Notify the agency of their intention to begin cleanup;

(2) Ensure that cleanup measures undertaken are consistent with the cleanup actions required pursuant to § 50165.3;

(3) Comply with any conditions imposed by the agency, including halting cleanup or mitigating adverse consequences from cleanup activities; and

(4) Incorporate self-initiated cleanup measures in the corrective action plan that is submitted to the agency for approval.

§ 50167. Public Participation for Corrective Action Plans.

(a) The agency shall conduct public participation activities in accordance with subsections (c) through (h) when:

(1) A corrective action plan required pursuant to § 50166(a) has been submitted and the agency has made a tentative decision concerning the proposed plan; or

(2) Implementation of any previously approved corrective action plan has not achieved the cleanup levels established in the plan and termination of the plan is under consideration by the agency.

(b) The agency will provide notice to the public of the release and the applicable response as required in subsections (c) and (d). Costs for all public participation activities described in subsections (c) through (h) shall be borne by the owner and operator of the UST or UST system, including the costs of making copies of materials to the public under subsection (f).

(c) Notice to members of the public directly affected by the release, as defined in § 50165.1(a), shall be given in the form of a letter from the agency and shall include at least the following information:

(1) Name and address of the UST or UST system;

(2) Name and address of the owner and operator of the UST or UST system;
(3) Summary of the release information and the proposed or previously approved corrective action plan;
(4) The agency's tentative decision concerning the proposed corrective action plan or concerning the termination of the previously approved corrective action plan;
(5) Announcement that an informational meeting will be held in accordance with subsection (g);
(6) Request for comments on the corrective action plan and the agency's tentative decision; and
(7) Availability of information on the release and the agency's tentative decision.

(d) Notice to the general public shall be given in the form of a notice in a local newspaper and shall include at least the information required in subsection (c)(1) to (7).

(e) Comments shall be received by the agency no later than thirty (30) calendar days after the notice provided in subsections (c) and (d) or after the end of the public meeting held pursuant to subsection (g), if any, whichever occurs later.

(f) Information on the release, the proposed corrective action plan, and the agency's tentative decision on the plan shall be made available to the public for inspection upon request.

(g) Before approving a corrective action plan, the agency may conduct a public meeting to provide information and receive comments on the proposed plan. A meeting will be held if there is sufficient public interest. Public interest shall be indicated by written request to the agency.

(h) At the Administrator's discretion, a notice of final decision may be issued.

§ 50168 to § 50169. [Reserved.]

ARTICLE 7
OUT-OF-SERVICE UST SYSTEMS AND CLOSURE

§ 50170. Temporary Closure
§ 50171. Permanent Closure and Change-in-Service
§ 50172. Assessing the Site at Closure or Change-in-Service
§ 50173. Applicability to Previously Closed UST Systems
§ 50174. Closure Records
§ 50175. Closure--Code of Practice
§ 50176 - § 50189. [Reserved.]

§ 50170. Temporary Closure.

(a) When an UST system is temporarily closed, owners and operators must continue operation and maintenance of corrosion protection in accordance with § 50131, and applicable release detection in accordance with Article 4. Articles 5 and 6 must be complied with if a release is suspected or confirmed. Spill and overfill operation and maintenance testing and inspections in Article 3 are not required during temporary closure. If the UST system is empty, release detection and release detection operation and maintenance testing and inspections in Articles 3 and 4 are not required. The UST system is empty when all materials have been removed using commonly employed practices so that no more than 2.5 centimeters (one inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remain in the system.
(b) When an UST system is temporarily closed for ninety (90) calendar days or more, owners and operators must also comply with the following requirements:

(1) Leave vent lines open and functioning; and
(2) Cap and secure all other lines, pumps, manways, and ancillary equipment.

(c) When an UST system is temporarily closed for more than twelve (12) months, owners and operators must permanently close the UST system if it does not meet the applicable design, construction, and installation requirements in Article 2, except that the spill and overfill equipment requirements do not have to be met. Owners and operators must

permanently close the substandard UST systems at the end of this twelve-month period in accordance with §§ 50171 to 50174, unless the agency provides an extension of the twelve-month temporary closure period. Owners and operators must complete a site assessment in accordance with § 50172 before such an extension can be applied for.

§ 50171. Permanent Closure and Change-in-Service.

(a) At least thirty (30) calendar days before beginning either permanent closure or a change-in-service of an UST or tank system under subsections (c) and (d), owners and operators must notify the agency in writing of their intent to permanently close or make the change-in-service, unless such action is in response to a confirmed release. The required assessment of the excavation zone under § 50172 must be performed after notifying the agency but before completion of the permanent closure or change-in-service.

(b) At least seven (7) calendar days before excavation work for a permanent closure or change-in-service, owners or operators must notify the agency of the exact date that the work will occur.

(c) To permanently close an UST or tank system, owners and operators must:

(1) Empty and clean the UST and tank system by removing all liquids and accumulated sludge;

(2) Remove the UST or tank system from the ground, fill the UST or tank system with an inert solid material, or close the tank in place in a manner approved by the agency; and

(3) Conduct a site assessment in accordance with § 50172.

(d) Continued use of an UST system to store a non-regulated substance is considered a change-in-service. Before a change-in-service, owners and operators must:

(1) Empty and clean the UST and tank system by removing all liquids and accumulated sludge; and

(2) Conduct a site assessment in accordance with § 50172.

(e) Within thirty (30) calendar days of completing a permanent closure or change-in-service, owners and operators must submit a notification to the

agency indicating completion of the closure or change-in-service.

§ 50172. Assessing the Site at Closure or Change-in-Service.

(a) Before permanent closure or a change-in-service is completed, owners and operators must measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the method of closure, the nature of the stored substance, the types of backfill and surrounding soil, the depth and flow of groundwater, and other factors appropriate for identifying the presence of a release.
(b) If contaminated soils, contaminated groundwater, or free product as a liquid or vapor is discovered under subsection (a), or by any other manner, owners and operators must begin release response action in accordance with Article 6.

§ 50173. Applicability to Previously Closed UST Systems.

(a) When directed by the agency, the owner and operator of an UST system permanently closed before December 22, 1988 must assess the excavation zone and close the UST system in accordance with this Article if releases from the UST may, in the judgment of the agency, pose a current or potential threat to human health and the environment.
(b) When directed by the agency, the owner and operator of an UST system with field-constructed tanks or an airport hydrant fuel distribution system permanently closed before October 13, 2015, must assess the excavation zone and close the UST system in accordance with this Article if releases from the UST may, in the judgment of the agency, pose a current or potential threat to human health and the environment.

§ 50174. Closure Records.

Owners and operators must maintain records in accordance with § 50134 that are capable of demonstrating compliance with closure requirements

under this Article. The results of the excavation zone assessment required in § 50172 must be maintained for at least three (3) years after completion of permanent closure or change-in-service in one of the following ways:

(1) By the owners and operators who took the UST system out of service;

(2) By the current owners and operators of the UST system site; or

(3) By mailing these records to the agency if they cannot be maintained at the closed facility.

§ 50175. Closure--Code of Practice.

The following current cleaning and closure procedures may be used to comply with § 50171:

(1) American Petroleum Institute Recommended Practice RP 1604, "Closure of Underground Petroleum Storage Tanks";

(2) American Petroleum Institute Standard 2015, "Safe Entry and Cleaning of Petroleum Storage Tanks, Planning and Managing Tank Entry From Decommissioning Through Recommissioning";

(3) American Petroleum Institute Recommended Practice 2016, "Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks";

(4) American Petroleum Institute Recommended Practice RP 1631, "Interior Lining and Periodic Inspection of Underground Storage Tanks", may be used as guidance for compliance with this section;

(5) National Fire Protection Association Standard 326, "Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair"; and

(6) National Institute for Occupational Safety and Health Publication 80–106, "Criteria for a Recommended Standard...Working in Confined Space", may be used as guidance for conducting safe closure procedures at some

tanks containing hazardous substances.

§§ 50176 to 50189. [Reserved.]

ARTICLE 8
FINANCIAL RESPONSIBILITY

§ 50190. Applicability
§ 50191. [Reserved]
§ 50192. Definition of Terms
§ 50193. Amount and Scope of Required Financial Responsibility
§ 50194. Allowable Mechanism and Combinations of Mechanisms
§ 50195. Financial Test of Self-Insurance
§ 50196. Guarantee
§ 50197. Insurance and Risk Retention Group Coverage
§ 50198. Surety Bond
§ 50199. Letter of Credit
§ 501100 to § 501101. [Reserved]
§ 501102. Trust Fund
§ 501103. Standby Trust Fund
§ 501104. Local Government Bond Rating Test
§ 501105. Local Government Financial Test
§ 501106. Local Government Guarantee
§ 501107. Local Government Fund
§ 501108. Substitution of Financial Assurance Mechanisms by Owner or Operator
§ 501109. Cancellation or Non-renewal by a Provider of Financial Assurance
§ 501110. Reporting by Owner or Operator
§ 501111. Record Keeping
§ 501112. Drawing of Financial Assurance Mechanisms
§ 501113. Release from the Requirements
§ 501114. Bankruptcy or Other Incapacity of Owner or Operator or Provider of Financial Assurance

§ 501115. Replenishment of Guarantee, Letters of Credit, or Surety Bond
§ 501116. to § 501199 [Reserved]

§ 50190. Applicability.

(a) This Article applies to owners and operators of all petroleum underground storage tank (UST) systems except as otherwise provided in this section.
(b) State and federal government entities whose debts and liabilities are the debts and liabilities of a state or the United States are exempt from the requirements of this Article.
(c) The requirements of this Article do not apply to owners and operators of any UST system described in § 50110(b), (c)(1), (c)(3), or (c)(4).
(d) If the owner and operator of a petroleum underground storage tank system are separate persons, only one person is required to demonstrate financial responsibility; however, both parties are liable in the event of noncompliance.

§ 50191. [Reserved.]

§ 50192. Definition of Terms.

When used in this Article, the following terms have the meanings given below:

"Accidental release" means any sudden or nonsudden release of petroleum arising from operating an underground storage tank system that results in a need for release response action and/or compensation for bodily injury or property damage neither expected nor intended by the tank system owner or operator.

"Bodily injury" shall have the meaning given to this term by applicable state law; however, this term shall not include those liabilities which, consistent with standard insurance industry practices, are excluded from coverage in liability insurance policies for bodily injury.

"Chief financial officer" in the case of local government owners and

operators, means the individual with the overall authority and responsibility for the collection, disbursement, and use of funds by the local government.

"Controlling interest" means direct ownership of at least fifty percent of the voting stock of another entity.

"Financial reporting year" means the latest consecutive twelve-month period for which any of the following reports used to support a financial test is prepared:

(1) A 10-K report submitted to the U.S. Securities and Exchange Commission;

(2) An annual report of tangible net worth submitted to Dun and Bradstreet; or

(3) Annual reports submitted to the Energy Information Administration or the Rural Utilities Service.

"Financial reporting year" may thus comprise a fiscal or a calendar year period.

"Legal defense cost" is any expense that an owner or operator or provider of financial assurance incurs in defending against claims or actions brought:

(1) By EPA or the state to require release response action or to recover the costs of release response action;

(2) By or on behalf of a third party for bodily injury or property damage caused by an accidental release; or

(3) By any person to enforce the terms of a financial assurance mechanism.

"Occurrence" means an accident, including continuous or repeated exposure to conditions, which results in a release from an underground storage tank system. This definition is intended to assist in the understanding of these regulations and is not intended either to limit the meaning of "occurrence" in a way that conflicts with standard insurance usage or to prevent the use of other standard insurance terms in place of "occurrence".

"Owner or operator", when the owner or operator is separate parties, refers to the party that is obtaining or has obtained financial assurances.

"Petroleum marketing facilities" include all facilities at which petroleum is produced or refined and all facilities from which petroleum is sold or transferred to other petroleum marketers or to the public.

"Property damage" shall have the meaning given this term by applicable state law. This term shall not include those liabilities which, consistent with standard insurance industry practices, are excluded from coverage in liability insurance policies for property damage. However, such exclusions for property damage shall not include response actions associated with releases from USTs or tank systems which are covered by the policy.

"Provider of financial assurance" means an entity that provides financial assurance to an owner or operator of an underground storage tank system through one of the financial mechanisms listed in §§ 50195 through 501107, including a guarantor, insurer, risk retention group, surety, issuer of a letter of credit, issuer of a state-required mechanism, or a state.

"Substantial business relationship" means the extent of a business relationship necessary under applicable state law to make a guarantee contract issued incident to that relationship valid and enforceable. A guarantee contract is issued "incident to that relationship" if it arises from and depends on existing economic transactions between the guarantor and the owner or operator.

"Substantial governmental relationship" means the extent of a governmental relationship necessary under applicable state law to make an added guarantee contract issued incident to that relationship valid and enforceable. A guarantee contract is issued "incident to that relationship" if it arises from a clear commonality of interest in the event of an UST or tank system release such as coterminous boundaries, overlapping constituencies, common groundwater aquifer, or other relationship other than monetary compensation that provides a motivation for the guarantor to provide a guarantee.

"Tangible net worth" means the tangible assets that remain after deducting liabilities; such assets do not include intangibles such as goodwill and rights to patents or royalties. For purposes of this definition, "assets" means all existing and all probable future economic benefits

obtained or controlled by a particular entity as a result of past transactions.

"Termination" under § 50197(b)(1) and (2) means only those changes that could result in a gap in coverage as where the insured has not obtained substitute coverage or has obtained substitute coverage with a different retroactive date than the retroactive date of the original policy.

§ 50193. Amount and Scope of Required Financial Responsibility.

(a) Owners or operators of petroleum USTs or tank systems must demonstrate financial responsibility for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum USTs or tank systems in at least the following per-occurrence amounts:

(1) For owners or operators of petroleum USTs or tank systems that are located at petroleum marketing facilities, or that handle an average of more than ten thousand gallons of petroleum per month based on annual throughput for the previous calendar year: $2,000,000; and

(2) For all other owners or operators of petroleum USTs or tank systems: $500,000.

(b) Owners or operators of petroleum USTs or tank systems must demonstrate financial responsibility for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum USTs or tank systems in at least the following annual aggregate amounts:

(1) For owners or operators of one to four petroleum USTs: $1,000,000; and

(2) For owners or operators of five or more petroleum USTs: $2,000,000.

(c) For the purposes of subsections (b) and (f) only, "a petroleum underground storage tank" or "a petroleum UST" means a single containment unit and does not mean combinations of single containment units.

(d) Except as provided in subsection (e), if the owner or

operator uses separate mechanisms or separate combinations of mechanisms to demonstrate financial responsibility for:

(1) Taking corrective action;

(2) Compensating third parties for bodily injury and property damage caused by sudden accidental releases; or

(3) Compensating third parties for bodily injury and property damage caused by nonsudden accidental releases, the amount of assurance provided by each mechanism or combination of mechanisms must be in the full amount specified in subsections (a) and (b).

(e) If an owner or operator uses separate mechanisms or separate combinations of mechanisms to demonstrate financial responsibility for different petroleum underground storage tanks, the annual aggregate required shall be based on the number of tanks covered by each such separate mechanism or combination of mechanisms.

(f) Owners or operators shall review the amount of aggregate assurance provided whenever additional petroleum underground storage tanks are acquired or installed. If the number of petroleum underground storage tanks for which assurance must be provided exceeds one hundred, the owner or operator shall demonstrate financial responsibility in the amount of at least $2,000,000 of annual aggregate assurance by the anniversary of the date on which the mechanism demonstrating financial responsibility became effective. If assurance is being demonstrated by a combination of mechanisms, the owner or operator shall demonstrate financial responsibility in the amount of at least $2,000,000 of annual aggregate assurance by the first-occurring effective date anniversary of any one of the mechanisms combined (other than a financial test or guarantee) to provide assurance.

(g) The amounts of assurance required under this section exclude legal defense costs.

(h) The required per-occurrence and annual aggregate coverage amounts do not in any way limit the liability of the owner or operator.

§ 50194. Allowable Mechanism and Combinations of Mechanisms.

(a) Subject to the limitations of subsections (b) and (c):

(1) An owner or operator, including a local government owner or operator, may use any one or combination of the mechanisms listed in §§ 50195 through 501103 to demonstrate financial responsibility under this Article for one or more USTs or tank systems; and

(2) A local government owner or operator may use any one or combination of the mechanisms listed in §§ 501104 through 501107 to demonstrate financial responsibility under this subchapter for one or more USTs or tank systems.

(b) An owner or operator may use a guarantee under § 50196 or surety bond under § 50198 to establish financial responsibility only if the State Attorney General has submitted a written statement to the administrator that a guarantee or surety bond executed as described in this section is a legally valid and enforceable obligation in the State.

(c) An owner or operator may use self-insurance in combination with a guarantee only if, for the purpose of meeting the requirements of the financial test under this rule, the financial statements of the owner or operator are not consolidated with the financial statements of the guarantor.

§ 50195. Financial Test of Self-Insurance.

(a) An owner or operator, and/or guarantor, may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by passing a financial test as specified in this section. To pass the financial test of self-insurance, the owner or operator, and/or guarantor, must meet the criteria of subsection (b) or (c) based on year-end financial statements for the latest completed fiscal year.

(b) (1) The owner or operator, and/or guarantor, must have a tangible net worth of at least ten times:

(A) The total of the applicable aggregate amount required by § 50193, Guam Administrative Rules and Regulations, based on the number of underground storage tanks for which a financial test is used to

demonstrate financial responsibility to the agency, to EPA, or to a state implementing agency under a state program approved by EPA under 40 C.F.R. part 281;

(B) The sum of the RCRA subtitle C corrective action cost estimates, the current closure and post-closure care cost estimates, and amount of liability coverage for which a financial test is used to demonstrate financial responsibility to demonstrate financial responsibility to the agency under 40 C.F.R. sections 261.143 and 261.147, as incorporated and amended in section 11-261.1-1, 40 C.F.R. sections 264.101, 264.143, 264.145, and 264.147, as incorporated and amended in section 11-264.1-1, and 40 C.F.R. sections 265.143, 265.145, and 265.147, as incorporated and amended in section 11-265.1-1, to EPA under 40 C.F.R. sections 261.143, 261.147, 264.101, 264.143, 264.145, 264.147, 265.143, 265.145, and 265.147, or to a state implementing agency under a state program authorized by EPA under 40 C.F.R. part 271; and

(C) The sum of current plugging and abandonment cost estimates for which a financial test is used to demonstrate financial responsibility to EPA under 40 C.F.R. section 144.63 or to a state implementing agency under a state program authorized by EPA under 40 C.F.R. part 145.

(2) The owner or operator, and/or guarantor, must have a tangible net worth of at least $10,000,000.

(3) The owner or operator, and/or guarantor, must have a letter signed by the chief financial officer worded as specified in subsection (d).

(4) The owner or operator, and/or guarantor, must either:

(A) File financial statements annually with the U.S. Securities and Exchange Commission, the Energy Information Administration, or the Rural Utilities Service; or

(B) Report annually the firm's tangible net worth to Dun and Bradstreet, and Dun and Bradstreet must have assigned the firm a financial strength rating of 4A or 5A.

(5) The firm's year-end financial statements, if independently audited, cannot include an adverse auditor's opinion, a disclaimer of opinion, or a "going concern" qualification.

(c) (1) The owner or operator, and/or guarantor, must meet the financial test requirements of 40 C.F.R. section 264.147(f)(1), substituting the appropriate amounts specified in § 50193(b)(1) and (2), Guam Administrative Rules and Regulations for the "amount of liability coverage" each time specified in that section.

(2) The fiscal year-end financial statements of the owner or operator, and/or guarantor, must be examined by an independent certified public accountant and be accompanied by the accountant's report of the examination.

(3) The firm's year-end financial statements cannot include an adverse auditor's opinion, a disclaimer of opinion, or a "going concern" qualification.

(4) The owner or operator, and/or guarantor, must have a letter signed by the chief financial officer, worded as specified in subsection (d).

(5) If the financial statements of the owner or operator, and/or guarantor, are not submitted annually to the U.S. Securities and Exchange Commission, the Energy Information Administration or the Rural Utilities Service, the owner or operator, and/or guarantor, must obtain a special report by an independent certified public accountant stating that:

(A) The accountant has compared the data that the letter from the chief financial officer specifies as having been derived from the latest year-end financial statements of the owner or operator, and/or guarantor, with the amounts in such financial statements; and

(B) In connection with that comparison, no matters came

to the accountant's attention, which caused the accountant to believe that the specified data should be adjusted.

(d) To demonstrate that it meets the financial test under subsection (b) or (c), the chief financial officer of the owner or operator, or guarantor, must sign, within one hundred twenty days of the close of each financial reporting year, as defined by the twelve-month period for which financial statements used to support the financial test are prepared, a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of the owner or operator, or guarantor]. This letter is in support of the use of [insert: "the financial test of self-insurance" or "guarantee" or both] to demonstrate financial responsibility for [insert: "taking corrective action" or "compensating third parties for bodily injury and property damage" or both] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s).

Underground storage tanks at the following facilities are assured by this financial test, or a corresponding financial test under EPA or another authorized state program, by this [insert: "owner or operator" or "guarantor"]:

[List for each facility: the name and address of the facility where tanks assured by this financial test are located, and whether tanks are assured by this financial test or a corresponding financial test under EPA or under a state program approved under 40 C.F.R. part 281. If separate mechanisms or combinations of mechanisms are being used to assure any of the tanks at this facility, list each tank assured by this financial test by the tank identification number provided in the notification submitted pursuant to 40 C.F.R. section 280.22, or in the permit applications submitted under §§ 501324 and

501326, Guam Administrative Rules and Regulations

A [insert: "financial test" and/or "guarantee"] is also used by this [insert: "owner or operator" or "guarantor"] to demonstrate evidence of financial responsibility in the following amounts under other EPA regulations or state programs authorized by EPA under 40 C.F.R. parts 271 and 145:

	Amount
EPA Regulations:	
Closure (§§261.143, 264.143, and 265.143)	$
Post-Closure Care (§§264.145 and 265.145)	
Liability Coverage (§§261.147, 264.147, and 265.147)	$
Corrective Action (§264.101(b))	
Plugging and Abandonment (§144.63)	$
	$
	$
Authorized State Programs:	
Closure	$
Post-Closure Care	$
Liability Coverage	$
Corrective Action	$
Plugging and Abandonment	$
TOTAL	$

This [insert: "owner or operator" or "guarantor"] has not received an adverse opinion, a disclaimer of opinion, or a "going concern" qualification from an independent auditor on his or her financial statements for the latest completed fiscal year.

[Fill in the information for Alternative I if the criteria of subsection (b) are being used to demonstrate compliance with the financial test requirements. Fill in the information for Alternative II if the criteria of

subsection (c) are being used to demonstrate compliance with the financial test requirements.]

ALTERNATIVE I

	Amount	
1. Amount of annual UST aggregate coverage being assured by a financial test, or guarantee or both	$	
2. Amount of corrective action, closure and post-closure care costs, liability coverage, and plugging and abandonment costs covered by a financial test, or guarantee or both	$	
3. Sum of lines 1 and 2	$	
4. Total tangible assets	$	
5. Total liabilities [if any of the amount reported on line 3 is included in total liabilities, you may deduct that amount from this line and add that amount to line 6]	$	
6. Tangible net worth [subtract line 5 from line 4]	$	
7. Is line 6 at least $10,000,000?	Yes	No
8. Is line 6 at least ten times line 3?	Yes	No
9. Have financial statements for the latest fiscal year been filed with the U.S. Securities and Exchange Commission?	Yes	No
10. Have financial statements for the latest fiscal year been filed with the federal Energy Information Administration?	Yes	No
11. Have financial statements for the latest fiscal year been filed with the federal Rural Utilities Service?	Yes	No
12. Has financial information been provided to Dun and Bradstreet, and has Dun and Bradstreet provided a financial strength rating of 4A or 5A? [Answer "Yes" only if both criteria have been met.]	Yes	No

ALTERNATIVE II

	Amount	
1. Amount of annual UST aggregate coverage being assured by a financial test, or guarantee or both	$	
2. Amount of corrective action, closure and post-closure care costs, liability coverage, and plugging and abandonment costs covered by a financial test, or guarantee or both	$	
3. Sum of lines 1 and 2	$	
4. Total tangible assets	$	
5. Total liabilities [if any of the amount reported on line 3 is included in total liabilities, you may deduct that amount from this line and add that amount to line 6]	$	
6. Tangible net worth [subtract line 5 from line 4]	$	
7. Total assets in the U.S. [required only if less than ninety per cent of assets are located in the U.S.]	$	
8. Is line 6 at least $10,000,000?	Yes	No
9. Is line 6 at least six times line 3?	Yes	No
10. Are at least ninety per cent of assets located in the U.S.? [If "No," complete line 11]	Yes	No
11. Is line 7 at least six times line 3?	Yes	No
[Fill in either lines 12-15 or lines 16-18:]		
12. Current assets	$	
13. Current liabilities	$	
14. Net working capital [subtract line 13 from line 12]	$	
15. Is line 14 at least six times line 3?	Yes	No
16. Current bond rating of most recent bond issue		

17. Name of rating service

18. Date of maturity of bond

19. Have financial statements for the latest fiscal year been filed with the U.S. Securities and Exchange Commission, the federal Energy Information Administration, or the federal Rural Utilities Service? Yes No

[If "No," please attach a report from an independent certified public accountant certifying that there are no material differences between the data as reported in lines 4-18 above and the financial statements for the latest fiscal year.]

[For both Alternative II and I complete the certification with this statement.]

I hereby certify that the wording of this letter is identical to the wording specified in § 50195(d), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Signature]
[Name]
[Title]
[Date]

(e) If an owner or operator using the test to provide financial assurance finds that he or she no longer meets the requirements of the financial test based on the year-end financial statements, the owner or operator must obtain alternative coverage within one hundred fifty days of the end of the year for which financial statements have been prepared.

(f) The Administrator may require reports of financial condition at any time from the owner or operator, and/or guarantor. If the Administrator finds, on the basis of such reports or other information, that the owner or operator, and/or guarantor, no longer meets the financial test requirements of subsections (b) or (c) and (d), the owner or operator must

obtain alternate coverage within thirty days after notification of such a finding.

(g) If the owner or operator fails to obtain alternate assurance within one hundred fifty days of finding that he or she no longer meets the requirements of the financial test based on the year-end financial statements, or within thirty days of notification by the Administrator that he or she no longer meets the requirements of the financial test, the owner or operator must notify the Administrator of such failure within ten days.

§ 50196. Guarantee.

(a) An owner or operator may satisfy the requirements of § 50193 by obtaining a guarantee that conforms to the requirements of this section. The guarantor must be:

(1) A firm that:

(A) Possesses a controlling interest in the owner or operator;

(B) Possesses a controlling interest in a firm described under subparagraph (A); or

(C) Is controlled through stock ownership by a common parent firm that possesses a controlling interest in the owner or operator; or

(2) A firm engaged in a substantial business relationship with the owner or operator and issuing the guarantee as an act incident to that business relationship.

(b) Within one hundred twenty days of the close of each financial reporting year the guarantor must demonstrate that it meets the financial test criteria of § 50195, Guam Administrative Rules and Regulations based on year-end financial statements for the latest completed financial reporting year by completing the letter from the chief financial officer described in § 50195(d), Guam Administrative Rules and Regulations and must deliver the letter to the owner or operator. If the guarantor fails to meet the requirements of the financial test at the end of any financial reporting year, within one hundred twenty days of the end of that financial reporting year the guarantor shall send by certified mail,

before cancellation or nonrenewal of the guarantee, notice to the owner or operator. If the Administrator notifies the guarantor that it no longer meets the requirements of the financial test of § 50195(b) or (c) and (d), Guam Administrative Rules and Regulations, the guarantor must notify the owner or operator within ten days of receiving such notification from the Administrator. In both cases, the guarantee will terminate no less than one hundred twenty days after the date the owner or operator receives the notification, as evidenced by the return receipt. The owner or operator must obtain alternative coverage as specified in § 501114(e), Guam Administrative Rules and Regulations.

(c) The guarantee must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

GUARANTEE

Guarantee made this [date] by [name of guaranteeing entity], a business entity organized under the laws of the State of [name of state], herein referred to as guarantor, to Guam Environmental Protection Agency and to any and all third parties, and obligees, on behalf of [owner or operator] of [business address].

Recitals.

(1) Guarantor meets or exceeds the financial test criteria of § 50195(b) or (c) and (d), Guam Administrative Rules and Regulations , and agrees to comply with the requirements for guarantors as specified in § 50196(b), Guam Administrative Rules and Regulations.

(2) [Owner or operator] owns or operates the following underground storage tank(s) covered by this guarantee: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. section 280.22, or in the permit

applications submitted under §§ 501324 and 501326 and the name and address of the facility.] This guarantee satisfies Article 8 of Guam Administrative Rules and Regulations, requirements for assuring funding for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the above-identified underground storage tank(s) in the amount of [insert dollar amount] per occurrence and [insert dollar amount] annual aggregate.

(3) [Insert appropriate phrase: "On behalf of our subsidiary" (if guarantor is corporate parent of the owner or operator); "On behalf of our affiliate" (if guarantor is a related firm of the owner or operator); or "Incident to our business relationship with" (if guarantor is providing the guarantee as an incident to a substantial business relationship with owner or operator)] [owner or operator], guarantor guarantees to Guam Environmental Protection Agency and to any and all third parties that:

In the event that [owner or operator] fails to provide alternative coverage within sixty days after receipt of a notice of cancellation of this guarantee and the Administrator of Guam Environmental Protection Agency has determined or suspects that a release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon instructions from the Administrator of Guam Environmental Protection Agency, shall fund a standby trust fund in accordance with the provisions of § 501112 Guam Administrative Rules and Regulations, in an amount not to exceed the coverage limits specified above.

In the event that the Administrator of Guam Environmental Protection Agency determines that [owner or operator] has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with Article 6 Guam Administrative Rules and Regulations, the guarantor, upon written instructions from the Administrator of Guam Environmental Protection Agency, shall fund a standby trust in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, in an amount not to

exceed the coverage limits specified above.

If [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by ["sudden" and/or "nonsudden"] accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written instructions from the Administrator of Guam Environmental Protection Agency, shall fund a standby trust in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, to satisfy such judgment(s), award(s), or settlement agreement(s) up to the limits of coverage specified above.

(4) Guarantor agrees that if, at the end of any fiscal year before cancellation of this guarantee, the guarantor fails to meet the financial test criteria of § 50195(b) or (c) and (d), Guam Administrative Rules and Regulations, guarantor shall send within one hundred twenty days of such failure, by certified mail, notice to [owner or operator]. The guarantee will terminate one hundred twenty days from the date of receipt of the notice by [owner or operator], as evidenced by the return receipt.

(5) Guarantor agrees to notify [owner or operator] by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within ten days after commencement of the proceeding.

(6) Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of [owner or operator] pursuant to Title 22, Guam Administrative Rules and Regulations, Chapter 50.

(7) Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] must comply with the applicable financial responsibility requirements of Article 8, Guam Administrative Rules and Regulations, for the above-identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to [owner or operator], such cancellation to become effective no earlier than one hundred twenty days after receipt of such notice by [owner or operator],

as evidenced by the return receipt.

(8) The guarantor's obligation does not apply to any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily damage or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

(9) Guarantor expressly waives notice of acceptance of this guarantee by the Guam Environmental Protection Agency, by any or all third parties, or by [owner or operator].

I hereby certify that the wording of this guarantee is identical to the wording specified in § 50196(c) Guam Administrative Rules and Regulations, as such regulations were constituted on the effective date shown immediately below.

Effective date:
[Name of guarantor]
[Authorized signature for guarantor]
[Name of person signing]
[Title of person signing]

Signature of witness or notary:

(d) An owner or operator who uses a guarantee to satisfy the requirements of § 50193 Guam Administrative Rules and Regulations must establish a standby trust fund when the guarantee is obtained. Under the terms of the guarantee, all amounts paid by the guarantor under the guarantee will be deposited directly into the standby trust fund in accordance with instructions from the Administrator of Guam Environmental Protection Agency under § 501112. This standby trust fund must meet the requirements specified in § 501103.

§ 50197. Insurance and Risk Retention Group Coverage.

(a) An owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by obtaining liability insurance that conforms to the requirements of this section from a qualified insurer or risk retention group. Such insurance may be in the form of a separate insurance policy or an endorsement to an existing insurance policy.

(b) Each insurance policy must be amended by an endorsement worded as specified in paragraph (l) or evidenced by a certificate of insurance worded as specified in paragraph (2), except that instructions in brackets must be replaced with the relevant information and the brackets deleted:

(1) ENDORSEMENT

Name: [name of each covered location]
Address: [address of each covered location]
Policy Number:
Period of Coverage: [current policy period]
Name of [Insurer or Risk Retention Group]:
Address of [Insurer or Risk Retention Group]:
Name of Insured:
Address of Insured:

Endorsement:

1. This endorsement certifies that the policy to which the endorsement is attached provides liability insurance covering the following underground storage tanks:

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility.] for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; in accordance with and subject to the limits of liability, exclusions, conditions, and other terms of the policy; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tank(s) identified above.

The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's or Group's liability; if the amount of coverage is different for different types of coverage or for different underground storage tanks or locations, indicate the amount of coverage for each type of coverage, and/or for each underground storage tank or location], exclusive of legal defense costs, which are subject to a separate limit under the policy. This coverage is provided under [policy number]. The effective date of said policy is [date].

2. The insurance afforded with respect to such

occurrences is subject to all of the terms and conditions of the policy; provided, however, that any provisions inconsistent with subsections (a) to (e) of this paragraph are hereby amended to conform with subsections (a) to (e);

a. Bankruptcy or insolvency of the insured shall not relieve the ["Insurer" or "Group"] of its obligations under the policy to which this endorsement is attached.

b. The ["Insurer" or "Group"] is liable for the payment of amounts within any deductible applicable to the policy to the provider of corrective action or a damaged third-party, with a right of reimbursement by the insured for any such payment made by the ["Insurer" or "Group"]. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated under another mechanism or combination of mechanisms as specified in §§ 50195 to 501102 and §§ 501104 to 501107, Guam Administrative Rules and Regulations.

c. Whenever requested by the Administrator of Guam Environmental Protection Agency, the ["Insurer" or "Group"] agrees to furnish to the Administrator of Guam Environmental Protection Agency a signed duplicate original of the policy and all endorsements.

d. Cancellation or any other termination of the insurance by the ["Insurer" or "Group"], except for non-payment of premium or misrepresentation by the insured, will be effective only upon written notice and only after the expiration of sixty days after a copy of such written notice is received by the insured. Cancellation for non-payment of premium or misrepresentation by the insured will be effective only upon written notice and only after expiration of a minimum of ten days after a copy of such written notice is received by the insured. Insert for claims-

made policies:

e. The insurance covers claims otherwise covered by the policy that are reported to the ["Insurer" or "Group"] within six months of the effective date of cancellation or non-renewal of the policy except where the new or renewed policy has the same retroactive date or a retroactive date earlier than that of the prior policy, and which arise out of any covered occurrence that commenced after the policy retroactive date, if applicable, and prior to such policy renewal or termination date. Claims reported during such extended reporting period are subject to the terms, conditions, limits, including limits of liability, and exclusions of the policy.]

I hereby certify that the wording of this instrument is identical to the wording in § 50197(b)(1) , Guam Administrative Rules and Regulations, and that the ["Insurer" or "Group"] is ["licensed to transact the business of insurance or eligible to provide insurance as an excess or surplus lines insurer in Guam"].

[Signature of authorized representative of Insurer or Risk Retention Group]
[Name of person signing]
[Title of person signing], Authorized Representative of [name of Insurer or Risk Retention Group]
[Address of Representative]

(2) CERTIFICATE OF INSURANCE

Name: [name of each covered location]
Address: [address of each covered location]
Policy Number:

Endorsement (if applicable):
Period of Coverage: [current policy period]
Name of [Insurer or Risk Retention Group]:
Address of [Insurer or Risk Retention Group]:
Name of Insured:
Address of Insured:

Certification:

1. [Name of Insurer or Risk Retention Group], [the "Insurer" or "Group"], as identified above, hereby certifies that it has issued liability insurance covering the following underground storage tank(s):

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility.] for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; in accordance with and subject to the limits of liability, exclusions, conditions, and other terms of the policy; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tank(s) identified above.

The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's or Group's liability; if the amount of coverage is different for different types of coverage or for different

underground storage tanks or locations, indicate the amount of coverage for each type of coverage and/or for each underground storage tank or location], exclusive of legal defense costs, which are subject to a separate limit under the policy. This coverage is provided under [policy number]. The effective date of said policy is [date].

2. The ["Insurer" or "Group"] further certifies the following with respect to the insurance described in Paragraph 1:

a. Bankruptcy or insolvency of the insured shall not relieve the ["Insurer" or "Group"] of its obligations under the policy to which this certificate applies.

b. The ["Insurer" or "Group"] is liable for the payment of amounts within any deductible applicable to the policy to the provider of corrective action or a damaged third-party, with a right of reimbursement by the insured for any such payment made by the ["Insurer" or "Group"]. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated under another mechanism or combination of mechanisms as specified in §§ 50195 to 501102 and 501104 to 501107, Guam Administrative Rules and Regulations.

c. Whenever requested by the Administrator of Guam Environmental Protection Agency, the ["Insurer" or "Group"] agrees to furnish to the Administrator a signed duplicate original of the policy and all endorsements.

d. Cancellation or any other termination of the insurance by the ["Insurer" or "Group"], except for non-payment of premium or misrepresentation by the insured, will be effective only upon written notice and only after the expiration of sixty days after a copy of such written notice is received by the insured. Cancellation for non-payment of premium or

misrepresentation by the insured will be effective only upon written notice and only after expiration of a minimum of ten days after a copy of such written notice is received by the insured. Insert for claims-made policies:

e. The insurance covers claims otherwise covered by the policy that are reported to the ["Insurer" or "Group"] within six months of the effective date of cancellation or non-renewal of the policy except where the new or renewed policy has the same retroactive date or a retroactive date earlier than that of the prior policy, and which arise out of any covered occurrence that commenced after the policy retroactive date, if applicable, and prior to such policy renewal or termination date. Claims reported during such extended reporting period are subject to the terms, conditions, limits, including limits of liability, and exclusions of the policy.]

I hereby certify that the wording of this instrument is identical to the wording in § 50197(b)(2), Guam Administrative Rules and Regulations, and that the ["Insurer" or "Group"] is ["licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in Guam"].

[Signature of authorized representative of Insurer]
[Type Name]
[Title], Authorized Representative of [name of Insurer or Risk Retention Group]
[Address of Representative]

(c) Each insurance policy must be issued by an insurer or a risk retention group that, at a minimum, is licensed to transact the business of

insurance or eligible to provide insurance as an excess or surplus lines insurer in Guam.

§ 50198. Surety Bond.

(a) An owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by obtaining a surety bond that conforms to the requirements of this section. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in the latest Circular 570 of the U.S. Department of the Treasury.

(b) The surety bond must be worded as follows, except that instructions in brackets must be replaced with the relevant information and the brackets deleted:

PERFORMANCE BOND

Date bond executed:
Period of coverage:
Principal: [legal name and business address of owner or operator]
Type of organization: [insert: "individual", "joint venture", "partnership", or "corporation"]
State of incorporation (if applicable):
Surety(ies): [name(s) and business address(es)]
Scope of Coverage: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility. List the coverage guaranteed by the bond: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"

"arising from operating the underground storage tank"].
Penal sums of bond:
Per occurrence $
Annual aggregate $
Surety's bond number:

Know All Persons by These Presents, that we, the Principal and Surety(ies), hereto are firmly bound to the Guam Environmental Protection Agency, in the above penal sums for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sums jointly and severally only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sums only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sums.

Whereas said Principal is required under Article 8, Guam Administrative Rules and Regulations, to provide financial assurance for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tanks identified above, and

Whereas said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

Now, therefore, the conditions of the obligation are such that if the Principal shall faithfully ["take corrective action, in accordance with Article 6, Guam Administrative Rules and Regulations, and the Administrator of Guam Environmental Protection Agency instructions for," and/or "compensate injured third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "sudden and nonsudden accidental

releases"] arising from operating the tank(s) identified above, or if the Principal shall provide alternate financial assurance, as specified in Article 8, Guam Administrative Rules and Regulations, within one hundred twenty days after the date the notice of cancellation is received by the Principal from the Surety(ies), then this obligation shall be null and void; otherwise it is to remain in full force and effect.

Such obligation does not apply to any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by the Administrator of Guam Environmental Protection Agency that the Principal has failed to ["take corrective action, in accordance with Article 6, Guam Administrative Rules and Regulations and the Administrator of Guam Environmental Protection Agency's instructions," and/or "compensate injured third parties"] as guaranteed by this bond, the Surety(ies) shall either perform ["corrective action in accordance with Chapter 50, Guam Administrative Rules and Regulations

and the Administrator of Guam Environmental Protection Agency's instructions," and/or "third party liability compensation"] or place funds in an amount up to the annual aggregate penal sum into the standby trust fund as directed by the Administrator of Guam Environmental Protection Agency under § 501112 , Guam Administrative Rules and Regulations.

Upon notification by the Administrator of Guam Environmental Protection Agency that the Principal has failed to provide alternate financial assurance within sixty days after the date the notice of cancellation is received by the determined or suspects that a release has occurred, the Surety(ies) shall place funds in an amount not exceeding the annual aggregate penal sum into the standby trust fund as directed by the Administrator of Guam Environmental Protection Agency and § 501112, Guam Administrative Rules and Regulations.

The Surety(ies) hereby waive(s) notification of amendments to applicable laws, statutes, rules, and regulations and agrees that no such amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the annual shall the obligation of the Surety(ies) hereunder exceed the amount of said annual aggregate penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal, provided, however, that cancellation shall not occur during the one hundred twenty days beginning on the date of return receipt.

The Principal may terminate this bond by sending written notice to the Surety(ies).

In Witness Thereof, the Principal and Surety(ies) have executed this Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in § 50198(b), Guam Administrative Rules and Regulations, as such regulations were constituted on the date this bond

was executed.

Principal
[Signature(s)]
[Name(s)]
[Title(s)]
[Corporate seal]

Corporate Surety(ies)
[Name and address]
State of Incorporation:
Liability limit: $
[Signature(s)]
[Name(s) and title(s)]
[Corporate seal]

[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]

Bond premium: $

(c) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. In all cases, the surety's liability is limited to the per-occurrence and annual aggregate penal sums.

(d) The owner or operator who uses a surety bond to satisfy the requirements of § 50193, Guam Administrative Rules and Regulations must establish a standby trust fund when the surety bond is acquired. Under the terms of the bond, all amounts paid by the surety under the bond will be deposited directly into the standby trust fund in accordance with instructions from the Administrator of Guam Environmental Protection Agency under § 501112, Guam Administrative Rules and Regulations. This standby trust fund must meet the requirements specified in § 501103, Guam Administrative Rules and Regulations.

§ 50199. Letter of Credit.

(a) An owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by obtaining an irrevocable standby letter of credit that conforms to the requirements of this section. The issuing institution must be an entity that has the authority to issue letters of credit in Guam and whose letter-of-credit operations are regulated and examined by a federal or Guam agency.

(b) The letter of credit must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

IRREVOCABLE STANDBY LETTER OF CREDIT

[Name and address of issuing institution]
[Name and address of the Administrator of Guam Environmental Protection Agency]

Dear Sir or Madam: We hereby establish our Irrevocable Standby Letter of Credit No. _ in your favor, at the request and for the account of [owner or operator name] of [address] up to the aggregate amount of [in words] U.S. dollars ($[insert dollar amount]), available upon presentation of

(1) Your sight draft, bearing reference to this letter of credit, No. _, and

(2) Your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under authority of 10 GCA Chapter 76."

This letter of credit may be drawn on to cover [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] arising from operating the underground storage tank(s) identified below in the amount of [in words] $[insert dollar amount] per occurrence and [in words] $[insert dollar amount] annual aggregate:

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than

one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. 280.22, or permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility.]

The letter of credit may not be drawn on to cover any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

This letter of credit is effective as of [date] and shall expire on [date], but such expiration date shall be automatically extended for a period of [at least the length of the original term] on [expiration date] and on each successive expiration date, unless, at least one hundred twenty days before the current expiration date, we notify [owner or operator] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date. In the event that [owner or operator] is so notified, any unused portion of the credit shall be available upon presentation of your sight draft for one hundred twenty days after the

date of receipt by [owner or operator], as shown on the signed return receipt.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us, and we shall deposit the amount of the draft directly into the standby trust fund of [owner or operator] in accordance with your instructions.

We certify that the wording of this letter of credit is identical to the wording specified in § 50199(b), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Signature(s) and title(s) of official(s) of issuing institution]
[Date]

This credit is subject to [insert: "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce," or "the Uniform Commercial Code"].

(c) An owner or operator who uses a letter of credit to satisfy the requirements of § 50193, Guam Administrative Rules and Regulations must also establish a standby trust fund when the letter of credit is acquired. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the Administrator will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Administrator of Guam Environmental Protection Agency under § 501112, Guam Administrative Rules and Regulations. This standby trust fund must meet the requirements specified in § 501103, Guam Administrative Rules and Regulations.

(d) The letter of credit must be irrevocable with a term specified by the issuing institution. The letter of credit must provide that credit be automatically renewed for the same term as the original term, unless, at least one hundred twenty days before the current expiration date, the issuing institution notifies the owner or operator by certified mail of its decision not to renew the letter of credit. Under the terms of the letter of

credit, the one hundred twenty days will begin on the date when the owner or operator receives the notice, as evidenced by the return receipt.

§ 501100 to § 501101. [Reserved.]

§ 501102. Trust Fund.

(a) An owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by establishing a trust fund that conforms to the requirements of this section. The trustee must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal agency or an agency of the state in which the fund is established.

(b) The wording of the trust agreement must be identical to the wording specified in § 501103(b)(1), Guam Administrative Rules and Regulations, and must be accompanied by a formal certification of acknowledgment as specified in § 501103(b)(2), Guam Administrative Rules and Regulations.

(c) The trust fund, when established, must be funded for the full required amount of coverage, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining required coverage.

(d) If the value of the trust fund is greater than the required amount of coverage, the owner or operator may submit a written request to the Administrator for release of the excess.

(e) If other financial assurance as specified in this subchapter is substituted for all or part of the trust fund, the owner or operator may submit a written request to the Administrator for release of the excess.

(f) Within sixty days after receiving a request from the owner or operator for release of funds as specified in subsection (d) or (e), the Administrator will instruct the trustee to release to the owner or operator such funds as the Administrator specifies in writing.

§ 501103. Standby Trust Fund.

a) An owner or operator using any one of the mechanisms authorized by §§ 50196, 50198, or 50199, Guam Administrative Rules and Regulations must establish a standby trust fund when the mechanism is acquired. The trustee of the standby trust fund must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal agency or an agency of the state in which the fund is established.

(b)(l) The standby trust agreement, or trust agreement, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

TRUST AGREEMENT

Trust agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator], a [name of state] [insert: "corporation", "partnership", "association", or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert: "Incorporated in the State of __" or "a national bank"], the "Trustee".

Whereas, Guam Environmental Protection Agency has established certain regulations applicable to the Grantor, requiring that an owner or operator of an underground storage tank shall provide assurance that funds will be available when needed for corrective action and third-party compensation for bodily injury and property damage caused by sudden and nonsudden accidental releases arising from the operation of the underground storage tank. The attached Schedule A lists the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located that are covered by the [insert "standby" where trust agreement is standby trust agreement] trust agreement;

[Whereas, the Grantor has elected to establish [insert either "a guarantee", "surety bond", or "letter of credit"] to

provide all or part of such financial assurance for the underground storage tanks identified herein and is required to establish a standby trust fund able to accept payments from the instrument (This paragraph is only applicable to the standby trust agreement.)];

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee;

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of the Financial Assurance Mechanism. This Agreement pertains to the [identify the financial assurance mechanism, either a guarantee, surety bond, or letter of credit, from which the standby trust fund is established to receive payments (This paragraph is only applicable to the standby trust agreement.)].

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, the "Fund," for the benefit of Guam Environmental Protection Agency. The Grantor and the Trustee intend that no third party have access to the Fund except as herein provided. [The Fund is established initially as a standby to receive payments and shall not consist of any property.] Payments made by the provider of financial assurance pursuant to the Administrator of Guam Environmental Protection Agency's instruction are transferred to the Trustee and are referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee

pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor as provider of financial assurance, any payments necessary to discharge any liability of the Grantor established by Guam Environmental Protection Agency.

Section 4. Payment for ["Corrective Action" or "Third-Party Liability Claims" or both]. The Trustee shall make payments from the Fund as the Administrator of Guam Environmental Protection Agency shall direct, in writing, to provide for the payment of the costs of [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] arising from operating the tanks covered by the financial assurance mechanism identified in this Agreement.

The Fund may not be drawn upon to cover any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum

underground storage tank;

(e) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193 Guam Administrative Rules and Regulations.

The Trustee shall reimburse the Grantor, or other persons as specified by the Administrator of Guam Environmental Protection Agency, from the Fund for corrective action expenditures and/or third-party liability claims, in such amounts as the Administrator shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the Administrator specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of cash and securities acceptable to the Trustee.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his or her duties with respect to the trust fund solely in the interest of the beneficiaries and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(i) Securities or other obligations of the Grantor, or any

other owner or operator of the tanks, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2(a), shall not be acquired or held, unless they are securities or other obligations of the federal or a state government;

(ii) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the federal or state government; and

(iii) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall

be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the federal or state government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund

shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any questions arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 11. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 12. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in writing sent to the Grantor and the present Trustee by certified mail ten days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in

Doc. No. 35GL-20-2341.

Section 9.

Section 13. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Schedule B or such other designees as the Grantor may designate by amendment to Schedule B. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the Administrator of Guam Environmental Protection Agency to the Trustee shall be in writing, signed by the Administrator, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the Administrator hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or the Administrator of Guam Environmental Protection Agency, except as provided for herein.

Section 14. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor and the Trustee, or by the Trustee and the Administrator of Guam Environmental Protection Agency if the Grantor ceases to exist.

Section 15. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 14, this Trust shall be irrevocable and shall continue until terminated at the written direction of the Grantor and the Trustee, or by the Trustee and the Administrator of Guam Environmental Protection Agency, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration

expenses, shall be delivered to the Grantor.

Section 16. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the Administrator of Guam Environmental Protection Agency issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 17. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of Guam or the Comptroller of the Currency in the case of National Association banks.

Section 18. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

In Witness whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals (if applicable) to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in § 501103(b)(1), Guam Administrative Rules and Regulations, as such regulations were constituted on the date written above.

[Signature of Grantor]
[Name of the Grantor]

[Title]

Attest:
[Signature of Trustee]
[Name of the Trustee]
[Title]
[Seal]

[Signature of Witness]
[Name of the Witness]
[Title]
[Seal]

(2) The standby trust agreement, or trust agreement, must be accompanied by a formal certification of acknowledgment similar to the following:

State of ___
County of ___

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation; and that she/he signed her/his name thereto by like order.

[Signature of Notary Public]
[Name of Notary Public]

(c) The Administrator will instruct the trustee to refund the balance of the standby trust fund to the provider of financial assurance if

the Administrator determines that no additional corrective action costs or third-party liability claims will occur as a result of a release covered by the financial assurance mechanism for which the standby trust fund was established.

(d) An owner or operator may establish one trust fund as the depository mechanism for all funds assured in compliance with this rule.

§ 501104. Local Government Bond Rating Test.

(a) A general purpose local government owner or operator and/or local government serving as a guarantor may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by having a currently outstanding issue or issues of general obligation bonds of $1,000,000 or more, excluding refunded obligations, with a Moody's rating of Aaa, Aa, A, or Baa, or a Standard & Poor's rating of AAA, AA, A, or BBB. Where a local government has multiple outstanding issues, or where a local government's bonds are rated by both Moody's and Standard and Poor's, the lowest rating must be used to determine eligibility. Bonds that are backed by credit enhancement other than municipal bond insurance may not be considered in determining the amount of applicable bonds outstanding.

(b) A local government owner or operator or local government serving as a guarantor that is not a general-purpose local government and does not have the legal authority to issue general obligation bonds may satisfy the requirements of § 50193, Guam Administrative Rules and Regulation by having a currently outstanding issue or issues of revenue bonds of $1,000,000 or more, excluding refunded issues and by also having a Moody's rating of Aaa, Aa, A, or Baa, or a Standard & Poor's rating of AAA, AA, A or BBB as the lowest rating for any rated revenue bond issued by the local government. Where bonds are rated by both Moody's and Standard & Poor's, the lower rating for each bond must be used to determine eligibility. Bonds that are backed by credit enhancement may not be considered in determining the amount of applicable bonds outstanding.

(c) The local government owner or operator and/or guarantor

must maintain a copy of its bond rating published within the last twelve months by Moody's or Standard & Poor's.

(d) To demonstrate that it meets the local government bond rating test, the chief financial officer of a general purpose local government owner or operator and/or guarantor must sign a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM THE CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of local government owner or operator, or guarantor]. This letter is in support of the use of the bond rating test to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s).

Underground storage tanks at the following facilities are assured by this bond rating test: [List for each facility: the name and address of the facility where tanks are assured by the bond rating test].

The details of the issue date, maturity, outstanding amount, bond rating, and bond rating agency of all outstanding bond issues that are being used by [name of local government owner or operator, or guarantor] to demonstrate financial responsibility are as follows: [complete table]

Issue Date	Maturity Date	Outstanding Amount	Bond Rating	Rating Agency*

*[Moody's or Standard & Poor's]

The total outstanding obligation of [insert amount], excluding refunded bond issues, exceeds the minimum amount of $1,000,000. All outstanding general obligation bonds issued by this government that have been rated by Moody's or Standard & Poor's are rated as at least investment grade (Moody's Baa or Standard & Poor's BBB) based on the most recent ratings published within the last twelve months. Neither rating service has provided notification within the last twelve months of downgrading of bond ratings below investment grade or of withdrawal of bond rating other than for repayment of outstanding bond issues.

I hereby certify that the wording of this letter is identical to the wording specified in § 501104(d), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Date]
[Signature]
[Name]
[Title]

(e) To demonstrate that it meets the local government bond rating test, the chief financial officer of local government owner or operator and/or guarantor other than a general purpose government must sign a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM THE CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of local government owner or operator, or guarantor]. This letter is in support of the use of the bond rating test to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence

and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s). This local government is not organized to provide general governmental services and does not have the legal authority under state law or constitutional provisions to issue general obligation debt.

Underground storage tanks at the following facilities are assured by this bond rating test: [List for each facility: the name and address of the facility where tanks are assured by the bond rating test.]

The details of the issue date, maturity, outstanding amount, bond rating, and bond rating agency of all outstanding revenue bond issues that are being used by [name of local government owner or operator, or guarantor] to demonstrate financial responsibility are as follows: [complete table]

Issue Date	Maturity Date	Outstanding Amount	Bond Rating	Rating Agency*

*[Moody's or Standard & Poor's]

The total outstanding obligation of [insert amount], excluding refunded bond issues, exceeds the minimum amount of $1,000,000. All outstanding revenue bonds issued by this government that have been rated by Moody's or Standard & Poor's are rated as at least investment grade (Moody's Baa or Standard & Poor's BBB) based on the most recent ratings published within the last twelve months. The revenue bonds listed are not backed by third-party credit enhancement or insured by a municipal bond insurance company. Neither rating service has provided notification within the last twelve months of downgrading of bond ratings below investment grade or of withdrawal of bond rating other than for repayment of outstanding bond issues.

I hereby certify that the wording of this letter is identical to the wording specified in § 501104 (e), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown

immediately below.

[Date]
[Signature]
[Name]
[Title]

(f) The Administrator may require reports of financial condition at any time from the local government owner or operator and/or local government guarantor. If the Administrator finds, on the basis of such reports or other information, that the local government owner or operator and/or guarantor no longer meets the local government bond rating test requirements of this section, the local government owner or operator must obtain alternative coverage within thirty days after notification of such a finding.

(g) If a local government owner or operator using the bond rating test to provide financial assurance finds that it no longer meets the bond rating test requirements, the local government owner or operator must obtain alternative coverage within one hundred fifty days of the change in status.

(h) If the local government owner or operator fails to obtain alternate assurance within one hundred fifty days of finding that it no longer meets the requirements of the bond rating test or within thirty days of notification by the Administrator that it no longer meets the requirements of the bond rating test, the owner or operator must notify the Administrator of such failure within ten days.

§ 501105. Local Government Financial Test.

(a) A local government owner or operator may satisfy the requirements of § 50193 by passing the financial test specified in this section. To be eligible to use the financial test, the local government owner or operator must have the ability and authority to assess and levy taxes or to freely establish fees and charges. To pass the local government financial test, the owner or operator must meet the criteria of subsection

(b)(2) and (3) based on year-end financial statements for the latest completed fiscal year.

(b) (1) The local government owner or operator must have the following information available, as shown in the year-end financial statements for the latest completed fiscal year:

(A) Total Revenues: Consists of the sum of general fund operating and non-operating revenues including net local taxes, licenses and permits, fines and forfeitures, revenues from use of money and property, charges for services, investment earnings, sales (property, publications, etc.), intergovernmental revenues (restricted and unrestricted), and total revenues from all other governmental funds including enterprise, debt service, capital projects, and special revenues, but excluding revenues to funds held in a trust or agency capacity. For purposes of this test, the calculation of total revenues shall exclude all transfers between funds under the direct control of the local government using the financial test (interfund transfers), liquidation of investments, and issuance of debt.

(B) Total Expenditures: Consists of the sum of general fund operating and non-operating expenditures including public safety, public utilities, transportation, public works, environmental protection, cultural and recreational, community development, revenue sharing, employee benefits and compensation, office management, planning and zoning, capital projects, interest payments on debt, payments for retirement of debt principal, and total expenditures from all other governmental funds including enterprise, debt service, capital projects, and special revenues. For purposes of this test, the calculation of total expenditures shall exclude all transfers between funds under the direct control of

the local government using the financial test (interfund transfers).

(C) Local Revenues: Consists of total revenues (as defined in subparagraph (A)) minus the sum of all transfers from other governmental entities, including all monies received from federal, state, or local government sources.

(D) Debt Service: Consists of the sum of all interest and principal payments on all long-term credit obligations and all interest-bearing short-term credit obligations. Includes interest and principal payments on general obligation bonds, revenue bonds, notes, mortgages, judgments, and interest-bearing warrants. Excludes payments on non-interest-bearing short-term obligations, interfund obligations, amounts owed in a trust or agency capacity, and advances and contingent loans from other governments.

(E) Total Funds: Consists of the sum of cash and investment securities from all funds, including general, enterprise, debt service, capital projects, and special revenue funds, but excluding employee retirement funds, at the end of the local government's financial reporting year. Includes federal securities, federal agency securities, state and local government securities, and other securities such as bonds, notes and mortgages. For purposes of this test, the calculation of total funds shall exclude agency funds, private trust funds, accounts receivable, value of real property, and other non-security assets.

(F) Population consists of the number of people in the area served by the local government.

(2) The local government's year-end financial statements, if independently audited, cannot include an adverse auditor's opinion or a disclaimer of opinion. The local government cannot have outstanding issues of general obligation or

revenue bonds that are rated as less than investment grade.

(3) The local government owner or operator must have a letter signed by the chief financial officer worded as specified in subsection (c).

(c) To demonstrate that it meets the financial test under subsection (b), the chief financial officer of the local government owner or operator, must sign, within one hundred twenty days of the close of each financial reporting year, as defined by the twelve-month period for which financial statements used to support the financial test are prepared, a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of the owner or operator]. This letter is in support of the use of the local government financial test to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating [an] underground storage tank[s].

Underground storage tanks at the following facilities are assured by this financial test [List for each facility: the name and address of the facility where tanks assured by this financial test are located. If separate mechanisms or combinations of mechanisms are being used to assure any of the tanks at this facility, list each tank assured by this financial test by the tank identification number provided in the notification submitted pursuant to 10 GCA Chapter 76, 40 C.F.R. section 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations.

This owner or operator has not received an adverse opinion, or a disclaimer of opinion from an independent auditor on its financial statements for the latest completed fiscal year. Any outstanding issues of

general obligation or revenue bonds, if rated, have a Moody's rating of Aaa, Aa, A, or Baa or a Standard and Poor's rating of AAA, AA, A, or BBB; if rated by both firms, the bonds have a Moody's rating of Aaa, Aa, A or Baa and a Standard and Poor's rating of AAA, AA, A, or BBB.

WORKSHEET FOR MUNICIPAL FINANCIAL TEST

PART I: BASIC INFORMATION

1. Total Revenues
   a. Revenues (dollars)
      Value of revenues excludes liquidation of investments and issuance of debt. Value includes all general fund operating and non-operating revenues, as well as all revenues from all other governmental funds including enterprise, debt service, capital projects, and special revenues, but excluding revenues to funds held in a trust or agency capacity.
   b. Subtract interfund transfers (dollars)
   c. Total Revenues (dollars)
2. Total Expenditures
   a. Expenditures (dollars)
      Value consists of the sum of general fund operating and non-operating expenditures including interest payments on debt, payments for retirement of debt principal, and total expenditures from all other governmental funds including enterprise, debt service, capital projects, and special revenues.
   b. Subtract interfund transfers (dollars)
   c. Total Expenditures (dollars)
3. Local Revenues
   a. Total Revenues (from 1c) (dollars)
   b. Subtract total intergovernmental transfers (dollars)
   c. Local Revenues (dollars)
4. Debt Service

a. Interest and fiscal charges (dollars)
b. Add debt retirement (dollars)
c. Total Debt Service (dollars)

5. Total Funds (Dollars)
(Sum of amounts held as cash and investment securities from all funds, excluding amounts held for employee retirement funds, agency funds, and trust funds)
6. Population (Persons)

PART II: APPLICATION OF TEST

7. Total Revenues to Population
   a. Total Revenues (from 1c)
   b. Population (from 6)
   c. Divide 7a by 7b
   d. Subtract 417
   e. Divide by 5,212
   f. Multiply by 4.095
8. Total Expenses to Population
   a. Total Expenses (from 2c)
   b. Population (from 6)
   c. Divide 8a by 8b
   d. Subtract 524
   e. Divide by 5,401
   f. Multiply by 4.095
9. Local Revenues to Total Revenues
   a. Local Revenues (from 3c)
   b. Total Revenues (from 1c)
   c. Divide 9a by 9b
   d. Subtract 0.695
   e. Divide by 0.205
   f. Multiply by 2.840
10. Debt Service to Population
   a. Debt Service (from 4c)
   b. Population (from 6)

c. Divide 10a by 10b
d. Subtract 51
e. Divide by 1,038
f. Multiply by -1.866

11. Debt Service to Total Revenues
    a. Debt Service (from 4c)
    b. Total Revenues (from 1c)
    c. Divide 11a by 11b
    d. Subtract 0.068
    e. Divide by 0.259
    f. Multiply by -3.533
12. Total Revenues to Total Expenses
    a. Total Revenues (from 1c)
    b. Total Expenses (from 2c)
    c. Divide 12a by 12b
    d. Subtract 0.910
    e. Divide by 0.899
    f. Multiply by 3.458
13. Funds Balance to Total Revenues
    a. Total Funds (from 5)
    b. Total Revenues (from 1c)
    c. Divide 13a by 13b
    d. Subtract 0.891
    e. Divide by 9.156
    f. Multiply by 3.270
14. Funds Balance to Total Expenses
    a. Total Funds (from 5)
    b. Total Expenses (from 2c)
    c. Divide 14a by 14b
    d. Subtract 0.866
    e. Divide by 6.409
    f. Multiply by 3.270
15. Total Funds to Population
    a. Total Funds (from 5)
    b. Population (from 6)

c. Divide 15a by 15b
d. Subtract 270
e. Divide by 4,548
f. Multiply by 1.866

16. Add 7f+8f+9f+10f+11f+12f+13f+14f+15f+4.937

I hereby certify that the financial index shown on line 16 of the worksheet is greater than zero and that the wording of this letter is identical to the wording specified in § 501105(c), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Date]
[Signature]
[Name]
[Title]

(d) If a local government owner or operator using the test to provide financial assurance finds that it no longer meets the requirements of the financial test based on the year-end financial statements, the owner or operator must obtain alternative coverage within one hundred fifty days of the end of the year for which financial statements have been prepared.

(e) The Administrator may require reports of financial condition at any time from the local government owner or operator. If the Administrator finds, on the basis of such reports or other information, that the local government owner or operator no longer meets the financial test requirements of subsections (b) and (c), the owner or operator must obtain alternate coverage within thirty days after notification of such a finding.

(f) If the local government owner or operator fails to obtain alternate assurance within one hundred fifty days of finding that it no longer meets the requirements of the financial test based on the year-end financial statements or within thirty days of notification by the Administrator that it no longer meets the requirements of the financial test, the owner or operator must notify the Administrator of such failure

within ten days.

§ 501106. Local Government Guarantee.

(a) A local government owner or operator may satisfy the requirements of § 50193, by obtaining a guarantee that conforms to the requirements of this section. The guarantor must be a local government having a "substantial governmental relationship" with the owner or operator and issuing the guarantee as an act incident to that relationship. A local government acting, as the guarantor must:

(1) Demonstrate that it meets the bond rating test requirement of § 501104, and deliver a copy of the chief financial officer's letter as contained in § 591104(d) and (e), to the local government owner or operator;

(2) Demonstrate that it meets the worksheet test requirements of § 501105, and deliver a copy of the chief financial officer's letter as contained in § 501105(c), to the local government owner or operator; or

(3) Demonstrate that it meets the local government fund requirements of § 501107(1), (2), or (3), and deliver a copy of the chief financial officer's letter as contained in § 501107, to the local government owner or operator.

(b) If the local government guarantor is unable to demonstrate financial assurance under §§ 501104, 501105, or 501107(1), (2), or (3), at the end of the financial reporting year, the guarantor shall send by certified mail, before cancellation or non-renewal of the guarantee, notice to the owner or operator. The guarantee will terminate no less than one hundred twenty days after the date the owner or operator receives the notification, as evidenced by the return receipt. The owner or operator must obtain alternative coverage as specified in § 501114(e).

(c) The guarantee agreement must be worded as specified in subsection (d) or (e), depending on which of the following alternative guarantee arrangements is selected:

(1) If, in the default or incapacity of the owner or operator, the guarantor guarantees to fund a standby trust as directed by

the Administrator, the guarantee shall be worded as specified in subsection (d).

(2) If, in the default or incapacity of the owner or operator, the guarantor guarantees to make payments as directed by the Administrator for taking corrective action or compensating third parties for bodily injury and property damage, the guarantee shall be worded as specified in subsection (e).

(d) The local government guarantee with standby trust must be worded exactly as follows, except that instructions in brackets are to be replaced with relevant information and the brackets deleted:

LOCAL GOVERNMENT GUARANTEE WITH STANDBY TRUST MADE BY A LOCAL GOVERNMENT

Guarantee made this [date] by [name of guaranteeing entity], a local government organized under the laws of Guam, herein referred to as guarantor, to the Guam Environmental Protection Agency and to any and all third parties, and obliges, on behalf of [local government owner or operator].

Recitals

(1) Guarantor meets or exceeds [select one: the local government bond rating test requirements of § 501104, Guam Administrative Rules and Regulations, the local government financial test requirements of § 501105, Guam Administrative Rules, or the local government fund under § 501107(1),(2) or (3), Guam Administrative Rules and Regulations.

(2) [Local government owner or operator] owns or operates the following underground storage tank(s) covered by this guarantee: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 10 GCA Chapter 76, 40 C.F.R. section 280.22, or in the permit applications submitted under §§ 501324 and

501326, Guam Administrative Rules and Regulations, and the name and address of the facility.] This guarantee satisfies Article 8 requirements for assuring funding for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the above-identified underground storage tank(s) in the amount of [insert dollar amount] per occurrence and [insert: dollar amount] annual aggregate.

(3) Incident to our substantial governmental relationship with [local government owner or operator], guarantor guarantees to the Guam Environmental Protection Agency and to any and all third parties that:

In the event that [local government owner or operator] fails to provide alternative coverage within sixty days after receipt of a notice of cancellation of this guarantee and the Administrator of Guam Environmental Protection Agency has determined or suspects that a release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon instructions from the Administrator shall fund a standby trust fund in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, in an amount not to exceed the coverage limits specified above.

In the event that the Administrator determines that [local government owner or operator] has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with Article 6, the guarantor upon written instructions from the Administrator shall fund a standby trust fund in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, in an amount not to exceed the coverage limits specified above.

If [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by ["sudden" and/or "nonsudden"] accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written

instructions from the Administrator, shall fund a standby trust in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, to satisfy such judgment(s), award(s), or settlement agreement(s) up to the limits of coverage specified above.

(4) Guarantor agrees that, if at the end of any fiscal year before cancellation of this guarantee, the guarantor fails to meet or exceed the requirements of the financial responsibility mechanism specified in paragraph (1), guarantor shall send within one hundred twenty days of such failure, by certified mail, notice to [local government owner or operator], as evidenced by the return receipt.

(5) Guarantor agrees to notify [owner or operator] by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code naming guarantor as debtor, within ten days after commencement of the proceeding.

(6) Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of [owner or operator] pursuant to Article 1.

(7) Guarantor agrees to remain bound under this guarantee for so long as [local government owner or operator] must comply with the applicable financial responsibility requirements of Article 8, for the above identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to [owner or operator], such cancellation to become effective no earlier than one hundred twenty days after receipt of such notice by [owner or operator], as evidenced by the return receipt.

(8) The guarantor's obligation does not apply to any of the following:

(a) Any obligation of [local government owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert: local government owner or operator] arising from, and in the course of, employment by [insert: local government owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert: local government owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily damage or property damage for which [insert: owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

(9) Guarantor expressly waives notice of acceptance of this guarantee by the Guam Environmental Protection Agency, by any or all third parties, or by [local government owner or operator].

I hereby certify that the wording of this guarantee is identical to the wording specified in § 501106(d), Guam Administrative Rules and Regulations, as such regulations were constituted on the effective date shown immediately below.

Effective date:
[Name of guarantor]
[Authorized signature for guarantor]
[Name of person signing]
[Title of person signing]
Signature of witness or notary:

(e) The local government guarantee without standby trust must be worded exactly as follows, except that instructions in brackets are to be replaced with relevant information and the brackets deleted:

LOCAL GOVERNMENT GUARANTEE WITHOUT STANDBY TRUST MADE BY A LOCAL GOVERNMENT

Guarantee made this [date] by [name of guaranteeing entity], a local government organized under the laws of Guam, herein referred to as guarantor, to the Guam Environmental Protection Agency and to any and all third parties, and obliges, on behalf of [local government owner or

operator].

Recitals

(1) Guarantor meets or exceeds [select one: the local government bond rating test requirements of § 501104, Guam Administrative Rules and Regulations, the local government financial test requirements of § 501105, Guam Administrative Rules and Regulations, or the local government fund under § 501107(1),(2) or (3), Guam Administrative Rules and Regulations.

(2) [Local government owner or operator] owns or operates the following underground storage tank(s) covered by this guarantee: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 10 GCA Chapter 76, 40 C.F.R. section 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility.] This guarantee satisfies Article 8, requirements for assuring funding for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the above-identified underground storage tank(s) in the amount of [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate.

(3) Incident to our substantial governmental relationship with [local government owner or operator], guarantor guarantees to the Guam Environmental Protection Agency and to any and all third parties and obliges that:

In the event that [local government owner or operator] fails to provide alternative coverage within sixty days after receipt of a notice of cancellation of this guarantee and the Administrator of Guam

Environmental Protection Agency has determined or suspects that a release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon written instructions from the Administrator shall make funds available to pay for corrective actions and compensate third parties for bodily injury and property damage in an amount not to exceed the coverage limits specified above.

In the event that the Administrator determines that [local government owner or operator] has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with Article 6, the guarantor upon written instructions from the Administrator shall make funds available to pay for corrective actions in an amount not to exceed the coverage limits specified above.

If [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by ["sudden" and/or "nonsudden"] accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written instructions from the Administrator, shall make funds available to compensate third parties for bodily injury and property damage in an amount not to exceed the coverage limits specified above.

(4) Guarantor agrees that if at the end of any fiscal year before cancellation of this guarantee, the guarantor fails to meet or exceed the requirements of the financial responsibility mechanism specified in paragraph (1), guarantor shall send within one hundred twenty days of such failure, by certified mail, notice to [local government owner or operator], as evidenced by the return receipt.

(5) Guarantor agrees to notify [owner or operator] by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code naming guarantor as debtor, within ten days after commencement of the proceeding.

(6) Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of [owner or operator] pursuant to Chapter 50, Guam Administrative Rules and Regulations.

(7) Guarantor agrees to remain bound under this guarantee for so long as [local government owner or operator] must comply with the applicable financial responsibility requirements of Article 8, for the above identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to [owner or operator], such cancellation to become effective no earlier than one hundred twenty days after receipt of such notice by [owner or operator], as evidenced by the return receipt. If notified of a probable release, the guarantor agrees to remain bound to the terms of this guarantee for all charges arising from the release, up to the coverage limits specified above, notwithstanding the cancellation of the guarantee with respect to future releases.

(8) The guarantor's obligation does not apply to any of the following:

(a) Any obligation of [local government owner or operator] under a workers' compensation disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert: local government owner or operator] arising from and in the course of, employment by [insert: local government owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert: local government owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily damage or property damage for which [insert: owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

(9) Guarantor expressly waives notice of acceptance of this guarantee by the Guam Environmental Protection Agency, by any or all third parties, or by [local government owner or operator].

I hereby certify that the wording of this guarantee is identical to the

wording specified in § 501106(e), Guam Administrative Rules and Regulations, as such regulations were constituted on the effective date shown immediately below.

Effective date:
[Name of guarantor]
[Authorized signature for guarantor]
[Name of person signing]
[Title of person signing]
Signature of witness or notary:

§ 501107. Local Government Fund.

A local government owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by establishing a dedicated fund account that conforms to the requirements of this section. Except as specified in paragraph (2), a dedicated fund may not be commingled with other funds or otherwise used in normal operations. A dedicated fund will be considered eligible if it meets one of the following requirements:

(1) The fund is dedicated by state constitutional provision, or local government statute, charter, ordinance, or order to pay for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks or tank systems and is funded for the full amount of coverage required under § 50193, Guam Administrative Rules and Regulations, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage; or

(2) The fund is dedicated by state constitutional provision, or local government statute, charter, ordinance, or order as a contingency fund for general emergencies, including taking corrective action and compensating third parties for bodily

injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks or tank systems, and is funded for five times the full amount of coverage required under § 50193, Guam Administrative Rules and Regulations, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage. If the fund is funded for less than five times the amount of coverage required under § 50193, Guam Administrative Rules and Regulations, the amount of financial responsibility demonstrated by the fund may not exceed one-fifth the amount in the fund; or

(3) The fund is dedicated by state constitutional provision, or local government statute, charter, ordinance or order to pay for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks or tank systems. A payment is made to the fund once every year for seven years until the fund is fully-funded. This seven-year period is hereafter referred to as the "pay-in-period". The amount of each payment must be determined by this formula:

$$\frac{TF - CF}{Y}$$

Where TF is the total required financial assurance for the owner or operator, CF is the current amount in the fund, and Y is the number of years remaining in the pay-in-period, and;

(A) The local government owner or operator has available bonding authority, approved through voter referendum (if such approval is necessary prior to the issuance of bonds), for an amount equal to the difference between the required amount of coverage and the amount held in the dedicated fund. This bonding authority shall be available for taking

corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks or tank systems, or

(B) The local government owner or operator has a letter signed by the appropriate state attorney general stating that the use of the bonding authority will not increase the local government's debt beyond the legal debt ceilings established by the relevant state laws. The letter must also state that prior voter approval is not necessary before use of the bonding authority.

(4) To demonstrate that it meets the requirements of the local government fund, the chief financial officer of the local government owner or operator and/or guarantor must sign a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of local government owner or operator, or guarantor.] This letter is in support of the use of the local government fund mechanism to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s).

Underground storage tanks at the following facilities are assured by this local government fund mechanism: [List for each facility: the name and address of the facility where

tanks are assured by the local government fund].

[Insert: "The local government fund is funded for the full amount of coverage required under section § 50193, Guam Administrative Rules and Regulations, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage." or "The local government fund is funded for five times the full amount of coverage required under § 50193, Guam Administrative Rules and Regulations, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage." or "A payment is made to the fund once every year for seven years until the fund is fully-funded and [name of local government owner or operator] has available bonding authority, approved through voter referendum, of an amount equal to the difference between the required amount of coverage and the amount held in the dedicated fund" or "A payment is made to the fund once every year for seven years until the fund is fully-funded and I have attached a letter signed by the State Attorney General stating that (1) the use of the bonding authority will not increase the local government's debt beyond the legal debt ceilings established by the relevant state laws and (2) that prior voter approval is not necessary before use of the bonding authority"].

The details of the local government fund are as follows:

Amount in Fund (market value of fund at close of last fiscal year):

[If fund balance is incrementally funded as specified in § 501107(3), Guam Administrative Rules and Regulations, insert:

Amount added to fund in the most recently completed fiscal year:

Number of years remaining in the pay-in period:]

A copy of the state constitutional provision, or local government statute, charter, ordinance or order dedicating the fund is attached.

I hereby certify that the wording of this letter is identical to the wording specified in § 501107(4), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Date]
[Signature]
[Name]
[Title]

§ 501108. Substitution of Financial Assurance Mechanisms by Owner or operator.

(a) An owner or operator may substitute any alternate financial assurance mechanisms as specified in this subchapter, provided that at all times the owner or operator maintains an effective financial assurance mechanism or combination of mechanisms that satisfies the requirements of § 50193, Guam Administrative Rules and Regulations.

(b) After obtaining alternate financial assurance as specified in this Article, an owner or operator may cancel a financial assurance mechanism by providing notice to the provider of financial assurance.

§ 501109. Cancellation or Non-renewal by a Provider of Financial Assurance.

(a) Except as otherwise provided, a provider of financial assurance may cancel or fail to renew an assurance mechanism by sending a notice of termination by certified mail to the owner or operator.

(1) Termination of a local government guarantee, a guarantee, a surety bond, or a letter of credit may not occur until one hundred twenty days after the date on which the owner or

operator receives the notice of termination, as evidenced by the return receipt.

(2) Termination of insurance or risk retention coverage, except for non-payment or misrepresentation by the insured, may not occur until sixty days after the date on which the owner or operator receives the notice of termination, as evidenced by the return receipt. Termination for non-payment of premium or misrepresentation by the insured may not occur until a minimum of ten days after the date on which the owner or operator receives the notice of termination, as evidenced by the return receipt.

(b) If a provider of financial responsibility cancels or fails to renew for reasons other than incapacity of the provider as specified in § 501114, Guam Administrative Rules and Regulations, the owner or operator must obtain alternate coverage as specified in this Article within sixty days after receipt of the notice of termination. If the owner or operator fails to obtain alternate coverage within sixty days after receipt of the notice of termination, the owner or operator must notify the Administrator of such failure and submit:

(1) The name and address of the provider of financial assurance;

(2) The effective date of termination; and

(3) The evidence of the financial assurance mechanism subject to the termination maintained in accordance with § 501111(b), Guam Administrative Rules and Regulations.

§ 501110. Reporting by Owner or Operator.

(a) An owner or operator must submit the appropriate forms listed in § 501111(b), Guam Administrative Rules and Regulations documenting current evidence of financial responsibility to the Administrator:

(1) Within thirty days after the owner or operator identifies a release from an underground storage tank or tank system required to be reported under §§ 50153 or 50161, Guam Administrative Rules and Regulations;

(2) If the owner or operator fails to obtain alternate coverage as required by this subchapter, within thirty days after the owner or operator receives notice of:

(A) Commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a provider of financial assurance as a debtor;

(B) Suspension or revocation of the authority of a provider of financial assurance to issue a financial assurance mechanism;

(C) Failure of a guarantor to meet the requirements of the financial test; or

(D) Other incapacity of a provider of financial assurance; or

(3) As required by §§ 50195(g) and 501109(b).

(b) An owner or operator must certify compliance with the financial responsibility requirements of this subchapter as specified in the notification form submitted pursuant to 10 GCA Chapter 76, § 50134, Guam Administrative Rules and Regulations, or the permit applications under §§ 501324 and 501326, Guam Administrative Rules and Regulations.

(c) The Administrator may require an owner or operator to submit evidence of financial assurance as described in § 501111(b), Guam Administrative Rules and Regulations or other information relevant to compliance with this Article at any time.

§ 501111. Record Keeping.

(a) Owners or operators must maintain evidence of all financial assurance mechanisms used to demonstrate financial responsibility under this subchapter for an underground storage tank or tank system until released from the requirements of this Article under § 501113, Guam Administrative Rules and Regulations. An owner or operator must maintain such evidence at the underground storage tank or tank system site or the owner's or operator's place of work. Records maintained off-

site must be made available upon request of the Administrator.

(b) An owner or operator must maintain the following types of evidence of financial responsibility:

(1) An owner or operator using an assurance mechanism specified in §§ 50195 to 50199 or § 501102 or §§ 501104 to 501107, Guam Administrative Rules and Regulations must maintain a copy of the instrument worded as specified.

(2) An owner or operator using a financial test or guarantee, or a local government financial test or a local government guarantee supported by the local government financial test must maintain a copy of the chief financial officer's letter based on year-end financial statements for the most recent completed financial reporting year. Such evidence must be on file no later than one hundred twenty days after the close of the financial reporting year.

(3) An owner or operator using a guarantee, surety bond, or letter of credit must maintain a copy of the signed standby trust fund agreement and copies of any amendments to the agreement.

(4) A local government owner or operator using a local government guarantee under § 501106(d), Guam Administrative Rules and Regulations must maintain a copy of the signed standby trust fund agreement and copies of any amendments to the agreement.

(5) A local government owner or operator using the local government bond rating test under § 501104, Guam Administrative Rules and Regulations must maintain a copy of its bond rating published within the last twelve months by Moody's or Standard & Poor's.

(6) A local government owner or operator using the local government guarantee under § 501106, Guam Administrative Rules and Regulations, where the guarantor's demonstration of financial responsibility relies on the bond rating test under § 501104, Guam Administrative Rules and Regulations must maintain a copy

of the guarantor's bond rating published within the last twelve months by Moody's or Standard & Poor's.

(7) An owner or operator using an insurance policy or risk retention group coverage must maintain a copy of the signed insurance policy or risk retention group coverage policy, with the endorsement or certificate of insurance and any amendments to the agreements.

(8) An owner or operator using a local government fund under § 501107, Guam Administrative Rules and Regulations must maintain the following documents:

(A) A copy of the state constitutional provision or local government statute, charter, ordinance, or order dedicating the fund;

(B) Year-end financial statements for the most recent completed financial reporting year showing the amount in the fund. If the fund is established under § 501107(3), Guam Administrative Rules and Regulations using incremental funding backed by bonding authority, the financial statements must show the previous year's balance, the amount of funding during the year, and the closing balance in the fund; and

(C) If the fund is established under § 501107(3), Guam Administrative Rules and Regulations using incremental funding backed by bonding authority, the owner or operator must also maintain documentation of the required bonding authority, including either the results of a voter referendum (under § 501107(3)(A), Guam Administrative Rules and Regulations, or attestation by the state attorney general as specified under § 501107(3)(B), Guam Administrative Rules and Regulations).

(9) A local government owner or operator using the local government guarantee supported by the local government fund must maintain a copy of the guarantor's year-end

financial statements for the most recent completed financial reporting year showing the amount of the fund.

(10) (A) An owner or operator using an assurance mechanism specified in §§ 50195 to 501107, Guam Administrative Rule and Regulations must maintain an updated copy of a certification of financial responsibility worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CERTIFICATION OF FINANCIAL RESPONSIBILITY

[Owner or operator] hereby certifies that it is in compliance with the requirements of Article 8 of Chapter 50, Guam Administrative Rules and Regulations.

The financial assurance mechanism(s) used to demonstrate financial responsibility under Article 8 of Chapter 50, Guam Administrative Rules and Regulations, is (are) as follows:

[For each mechanism, list the type of mechanism, name of issuer, mechanism number (if applicable), amount of coverage, effective period of coverage and whether the mechanism covers "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases".]

[Signature of owner or operator]
[Name of owner or operator]
[Title]
[Date]
[Signature of witness or notary]
[Name of witness or notary]

[Date]

(B) The owner or operator must update this certification whenever the financial assurance mechanism(s) used to demonstrate financial responsibility change(s).

§ 501112. Drawing of Financial Assurance Mechanisms.

(a) Except as specified in subsection (d), the Administrator shall require the guarantor, surety, or institution issuing a letter of credit to place the amount of funds stipulated by the Administrator, up to the limit of funds provided by the financial assurance mechanism, into the standby trust if:

(1) (A) The owner or operator fails to establish alternate financial assurance within sixty days after receiving notice of cancellation of the guarantee, surety bond, letter of credit, or, as applicable, other financial assurance mechanism; and

(B) The Administrator determines or suspects that a release from an underground storage tank or tank system covered by the mechanism has occurred and so notifies the owner or operator or the owner or operator has notified the Administrator pursuant to Articles 5 or 6 of a release from an underground storage tank or tank system covered by the mechanism; or

(2) The conditions of subsection (b)(1), (b)(2)(A), or (b)(2)(B) are satisfied.

(b) The Administrator may draw on a standby trust fund when:

(1) The Administrator makes a final determination that a release has occurred and immediate or long-term corrective action for the release is needed, and the owner or operator, after appropriate notice and opportunity to comply, has not conducted release response action as required under Article 6; or

(2) The Administrator has received either:

(A) Certification from the owner or operator and the third-party liability claimant(s) and from attorneys representing the owner or operator and the third-party liability claimant(s) that a third-party liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CERTIFICATION OF A VALID CLAIM

The undersigned, as principals and as legal representatives of [insert: owner or operator] and [insert: name and address of third-party claimant], hereby certify that the claim of bodily injury [and/or] property damage caused by an accidental release arising from operating [owner's or operator's] underground storage tank should be paid in the amount of $[___].

[Signatures]
Owner or Operator
Attorney for Owner or Operator
(Notary)
Date
[Signatures]
Claimant(s)
Attorney(s) for Claimant(s)
(Notary)
Date

or;

(B) A valid final court order establishing a judgment against the owner or operator for bodily injury or

property damage caused by an accidental release from an underground storage tank or tank system covered by financial assurance under this subchapter and the Administrator determines that the owner or operator has not satisfied the judgment.

(c) If the Administrator determines that the amount of corrective action costs and third-party liability claims eligible for payment under subsection (b) may exceed the balance of the standby trust fund and the obligation of the provider of financial assurance, the first priority for payment shall be corrective action costs necessary to protect human health and the environment. The Administrator shall pay third-party liability claims in the order in which the Administrator receives certifications under subsection (b)(2)(A), and valid court orders under subsection (b)(2)(B).

(d) A governmental entity acting as guarantor under § 501106(e), Guam Administrative Rules and Regulations, the local government guarantee without standby trust, shall make payments as directed by the Administrator under the circumstances described in subsections (a), (b), and (c).

§ 501113. Release from the Requirements.

An owner or operator is no longer required to maintain financial responsibility under this subchapter for an underground storage tank or tank system after the tank or tank system has been permanently closed or undergoes a change-in-service or, if release response action is required, after release response action has been completed and the tank or tank system has been permanently closed or undergoes a change-in-service as required by Article 7.

§ 501114. Bankruptcy or Other Incapacity of Owner or Operator or Provider of Financial Assurance.

(a) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming

an owner or operator as debtor, the owner or operator must notify the Administrator by certified mail of such commencement and submit the appropriate forms listed in § 501111(b), Guam Administrative Rules and Regulations documenting current financial responsibility.

(b) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a guarantor providing financial assurance as debtor, such guarantor must notify the owner or operator by certified mail of such commencement as required under the terms of the guarantee specified in § 50196, Guam Administrative Rules and Regulations.

(c) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a local government owner or operator as debtor, the local government owner or operator must notify the Administrator by certified mail of such commencement and submit the appropriate forms listed in § 501111(b), Guam Administrative Rules and Regulations documenting current financial responsibility.

(d) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a guarantor providing a local government financial assurance as debtor, such guarantor must notify the local government owner or operator by certified mail of such commencement as required under the terms of the guarantee specified in § 501106, Guam Administrative Rules and Regulations.

(e) An owner or operator who obtains financial assurance by a mechanism other than the financial test of self-insurance will be deemed to be without the required financial assurance in the event of a bankruptcy or incapacity of its provider of financial assurance, or a suspension or revocation of the authority of the provider of financial assurance to issue a guarantee, insurance policy, risk retention group coverage policy, surety bond, or letter of credit. The owner or operator must obtain alternate financial assurance as specified in this Article within thirty days after receiving notice of such an event. If the owner or operator does not obtain alternate coverage within thirty days after such notification, the owner or operator must notify the Administrator.

§ 501115. Replenishment of Guarantee, Letters of Credit, or Surety Bond.

(a) If at any time after a standby trust is funded upon the instruction of the Administrator with funds drawn from a guarantee, local government guarantee with standby trust, letter of credit, or surety bond, and the amount in the standby trust is reduced below the full amount of coverage required, the owner or operator shall by the anniversary date of the financial mechanism from which the funds were drawn:

(1) Replenish the value of financial assurance to equal the full amount of coverage required; or

(2) Acquire another financial assurance mechanism for the amount by which funds in the standby trust have been reduced.

(b) For purposes of this section, the full amount of coverage required is the amount of coverage to be provided by § 50193, Guam Administrative Rule and Regulations. If a combination of mechanisms was used to provide the assurance funds, which were drawn upon, replenishment shall occur by the earliest anniversary date among the mechanisms.

§ 501116 to § 501199. [Reserved.]

ARTICLE 9
LENDER LIABILITY

§ 501200. Definitions
§ 501201 to § 501209. [Reserved.]
§ 501210. Participation in Management
§ 501211 to § 501219. [Reserved.]
§ 501220. Ownership of an Underground Storage Tank or Underground Storage Tank System or Facility or Property on which an Underground Storage Tank or Underground

Storage Tank System is Located
§ 501221 to § 501229. [Reserved.]
§ 501230. Operating an Underground Storage Tank or Underground Storage Tank System
§ 501231 to § 501239. [Reserved.]

§ 501200. Definitions.

(a) UST technical standards, as used in this Article, refers to the UST preventative and operating requirements under Articles 2, 3, 4, 7, and 10 and § 50150, Guam Administrative Rules and Regulations.

(b) Petroleum production, refining, and marketing.

(a) (1) "Petroleum production" means the production of crude oil or other forms of petroleum (as defined in § 50112, Guam Administrative Rules and Regulations) as well as the production of petroleum products from purchased materials.

(2) "Petroleum refining" means the cracking, distillation, separation, conversion, upgrading, and finishing of refined petroleum or petroleum products.

(3) "Petroleum marketing" means the distribution, transfer, or sale of petroleum or petroleum products for wholesale or retail purposes.

(c) "Indicia of ownership" means evidence of a secured interest, evidence of an interest in a security interest, or evidence of an interest in real or personal property securing a loan or other obligation, including any legal or equitable title or deed to real or personal property acquired through or incident to foreclosure. Evidence of such interests include, but are not limited to, mortgages, deeds of trust, liens, surety bonds and guarantees of obligations, title held pursuant to a lease financing transaction in which the lessor does not select initially the leased property (hereinafter "lease financing transaction"), and legal or equitable title obtained pursuant to foreclosure. Evidence of such interests also includes assignments, pledges, or other rights to or other forms of encumbrance against property that are held primarily to protect a security interest. A person is not required to hold title or a security interest in order to

maintain indicia of ownership.

(d) A "holder" is a person who, upon October 13, 2015, or in the future, maintains indicia of ownership (as defined in subsection (c)) primarily to protect a security interest (as defined in subsection (f)(1)) in a petroleum UST or UST system or facility or property on which a petroleum UST or UST system is located. A holder includes the initial holder (such as a loan originator); any subsequent holder (such as a successor-in-interest or subsequent purchaser of the security interest on the secondary market); a guarantor of an obligation, surety, or any other person who holds ownership indicia primarily to protect a security interest; or a receiver or other person who acts on behalf or for the benefit of a holder.

(e) A "borrower, debtor, or obligor" is a person whose UST or UST system or facility or property on which the UST or UST system is located is encumbered by a security interest. These terms may be used interchangeably.

(f) "Primarily to protect a security interest" means that the holder's indicia of ownership are held primarily for the purpose of securing payment or performance of an obligation.

(1) "Security interest" means an interest in a petroleum UST or UST system or in the facility or property on which a petroleum UST or UST system is located, created or established for the purpose of securing a loan or other obligation. Security interests include but are not limited to mortgages, deeds of trusts, liens, and title pursuant to lease financing transactions. Security interests may also arise from transactions such as sale and leasebacks, conditional sales, installment sales, trust receipt transactions, certain assignments, factoring agreements, accounts receivable financing arrangements, and consignments, if the transaction creates or establishes an interest in an UST or UST system or in the facility or property on which the UST or UST system is located, for the purpose of securing a loan or other obligation.

(2) "Primarily to protect a security interest", as used in this

subchapter, does not include indicia of ownership held primarily for investment purposes, nor ownership indicia held primarily for purposes other than as protection for a security interest. A holder may have other, secondary reasons for maintaining indicia of ownership, but the primary reason why any ownership indicia are held must be as protection for a security interest.

(g) "Operation" means, for purposes of this Article, the use, storage, filling, or dispensing of petroleum contained in an UST or UST system.

§ 501201 to § 501209. [Reserved.]

§ 501210. Participation in Management.

(a) The term "participating in the management of an UST or UST system" means that the holder is engaging in decision making control of, or activities related to, operation of the UST or UST system, as defined in this section. Actions that are participation in management:

(1) Participation in the management of an UST or UST system means, for purposes of this subchapter, actual participation by the holder in the management or control of decision making related to the operation of an UST or UST system. Participation in management does not include the mere c capacity or ability to influence or the unexercised right to control UST or UST system operations. A holder is participating in the management of the UST or UST system only if the holder either:

(A) Exercises decision making control over the operational (as opposed to financial or administrative) aspects of the UST or UST system, such that the holder has undertaken responsibility for all or substantially all of the management of the UST or UST system; or

(B) Exercises control at a level comparable to that of a

manager of the borrower's enterprise, such that the holder has assumed or manifested responsibility for the overall management of the enterprise encompassing the day-to-day decision making of the enterprise with respect to all, or substantially all, of the operational (as opposed to financial or administrative) aspects of the enterprise.

(2) Operational aspects of the enterprise relate to the use, storage, filling, or dispensing of petroleum contained in an UST or UST system, and include functions such as that of a facility or plant manager, operations manager, chief operating officer, or chief executive officer. Financial or administrative aspects include functions such as that of a credit manager, accounts payable/receivable manager, personnel manager, controller, chief financial officer, or similar functions. Operational aspects of the enterprise do not include the financial or administrative aspects of the enterprise, or actions associated with environmental compliance, or actions undertaken voluntarily to protect the environment in accordance with applicable requirements in this Article.

(b) Actions that are not participation in management pre-foreclosure:

(1) Actions at the inception of the loan or other transaction. No act or omission prior to the time that indicia of ownership are held primarily to protect a security interest constitutes evidence of participation in management within the meaning of this Article. A prospective holder who undertakes or requires an environmental investigation (which could include a site assessment, inspection, and/or audit) of the UST or UST system or facility or property on which the UST or UST system is located (in which indicia of ownership are to be held), or requires a prospective borrower to clean up contamination from the UST or UST system or to comply or come into compliance (whether prior or subsequent to the time that indicia of ownership are held primarily to protect a security interest) with any applicable law or regulation, is not by such action considered to be participating in

the management of the UST or UST system or facility or property on which the UST or UST system is located.

(2) Loan policing and work out. Actions that are consistent with holding ownership indicia primarily to protect a security interest do not constitute participation in management for purposes of this subchapter. The authority for the holder to take such actions may, but need not, be contained in contractual or other documents specifying requirements for financial, environmental, and other warranties, covenants, conditions, representations or promises from the borrower. Loan policing and work out activities cover and include all such activities up to foreclosure, exclusive of any activities that constitute participation in management.

(A) Policing the security interest or loan.

(i) A holder who engages in policing activities prior to foreclosure will remain within the exemption provided that the holder does not together with other actions participate in the management of the UST or UST system as provided in § 501210(a), Guam Administrative Rules and Regulations. Such policing actions include, but are not limited to, requiring the borrower to clean up contamination from the UST or UST system during the term of the security interest; requiring the borrower to comply or come into compliance with applicable federal, state, and local environmental and other laws, rules, and regulations during the term of the security interest; securing or exercising authority to monitor or inspect the UST or UST system or facility or property on which the UST or UST system is located (including on-site inspections) in which indicia of ownership are maintained, or the borrower's business or financial condition during the term of the

security interest; or taking other actions to adequately police the loan or security interest (such as requiring a borrower to comply with any warranties, covenants, conditions, representations, or promises from the borrower).

(ii) Policing activities also include undertaking by the holder of UST environmental compliance actions and voluntary environmental actions taken in compliance with this chapter, provided that the holder does not otherwise participate in the management or daily operation of the UST or UST system as provided in §§ 501210(a) and 50130, Guam Administrative Rules and Regulations sections. Such allowable actions include, but are not limited to, release detection and release reporting, release response and corrective action, temporary or permanent closure of an UST or UST system, UST upgrading or replacement, and maintenance of corrosion protection. A holder who undertakes these actions must do so in compliance with the applicable requirements in this chapter. A holder may directly oversee these environmental compliance actions and voluntary environmental actions, and directly hire contractors to perform the work, and is not by such action considered to be participating in the management of the UST or UST system.

(B) Loan work out. A holder who engages in work out activities prior to foreclosure will remain within the exemption provided that the holder does not together with other actions participate in the management of

the UST or UST system as provided in § 501210(a) Guam Administrative Rules and Regulations. For purposes of this rule, "work out" refers to those actions by which a holder, at any time prior to foreclosure, seeks to prevent, cure, or mitigate a default by the borrower or obligor; or to preserve, or prevent the diminution of, the value of the security. Work out activities include, but are not limited to, restructuring or renegotiating the terms of the security interest; requiring payment of additional rent or interest; exercising forbearance; requiring or exercising rights pursuant to an assignment of accounts or other amounts owing to an obligor; requiring or exercising rights pursuant to an escrow agreement pertaining to amounts owing to an obligor; providing specific or general financial or other advice, suggestions, counseling, or guidance; and exercising any right or remedy the holder is entitled to by law or under any warranties, covenants, conditions, representations, or promises from the borrower.

(c) Foreclosure on an UST or UST system or facility or property on which an UST or UST system is located, and participation in management activities post-foreclosure.

(1) Foreclosure.

(A) Indicia of ownership that are held primarily to protect a security interest include legal or equitable title or deed to real or personal property acquired through or incident to foreclosure. For purposes of this Article, the term "foreclosure" means that legal, marketable or equitable title or deed has been issued, approved, and recorded, and that the holder has obtained access to the UST, UST system, UST facility, and property on which the UST or UST system is located, provided that the holder acted diligently to acquire marketable title or deed and to gain access to

the UST, UST system, UST facility, and property on which the UST or UST system is located. The indicia of ownership held after foreclosure continue to be maintained primarily as protection for a security interest provided that the holder undertakes to sell, re-lease an UST or UST system or facility or property on which the UST or UST system is located, held pursuant to a lease financing transaction (whether by a new lease financing transaction or substitution of the lessee), or otherwise divest itself of the UST or UST system or facility or property on which the UST or UST system is located, in a reasonably expeditious manner, using whatever commercially reasonable means are relevant or appropriate with respect to the UST or UST system or facility or property on which the UST or UST system is located, taking all facts and circumstances into consideration, and provided that the holder does not participate in management (as defined in § 501210(a), Guam Administrative Rules and Regulations prior to or after foreclosure.

(B) For purposes of establishing that a holder is seeking to sell, re-lease pursuant to a lease financing transaction (whether by a new lease financing transaction or substitution of the lessee), or divest in a reasonably expeditious manner an UST or UST system or facility or property on which the UST or UST system is located, the holder may use whatever commercially reasonable means as are relevant or appropriate with respect to the UST or UST system or facility or property on which the UST or UST system is located, or may employ the means specified in § 501210(c)(2), Guam Administrative Rules and Regulations). A holder that outbids, rejects, or fails to act upon a written, bona fide, firm offer of fair consideration for the UST or UST system or facility or

property on which the UST or UST system is located, as provided in § 501210(c)(2), Guam Administrative Rules and Regulations, is not considered to hold indicia of ownership primarily to protect a security interest.

(2) Holding foreclosed property for disposition and liquidation. A holder, who does not participate in management prior to or after foreclosure, may sell, re-lease, pursuant to a lease financing transaction (whether by a new lease financing transaction or substitution of the lessee), an UST or UST system or facility or property on which the UST or UST system is located, liquidate, wind up operations, and take measures, prior to sale or other disposition, to preserve, protect, or prepare the secured UST or UST system or facility or property on which the UST or UST system is located. A holder may also arrange for an existing or new operator to continue or initiate operation of the UST or UST system. The holder may conduct these activities without voiding the security interest exemption, subject to the requirements of this Article.

(A) A holder establishes that the ownership indicia maintained after foreclosure continue to be held primarily to protect a security interest by, within twelve months following foreclosure, listing the UST or UST system or the facility or property on which the UST or UST system is located, with a broker, dealer, or agent who deals with the type of property in question, or by advertising the UST or UST system or facility or property on which the UST or UST system is located, as being for sale or disposition on at least a monthly basis in either a real estate publication or a trade or other publication suitable for the UST or UST system or facility or property on which the UST or UST system is located, or a newspaper of general circulation (defined as one with a circulation over

10,000, or one suitable under any applicable federal, state, or local rules of court for publication required by court order or rules of civil procedure) covering the location of the UST or UST system or facility or property on which the UST or UST system is located. For purposes of this provision, the twelve-month period begins to run from the date that the marketable title or deed has been issued, approved and recorded, and the holder has obtained access to the UST, UST system, UST facility and property on which the UST or UST system is located, provided that the holder acted diligently to acquire marketable title or deed and to obtain access to the UST, UST system, UST facility and property on which the UST or UST system is located. If the holder fails to act diligently to acquire marketable title or deed or to gain access to the UST or UST system, the twelve-month period begins to run from the date on which the holder first acquires either title to or possession of the secured UST or UST system, or facility or property on which the UST or UST system is located, whichever is later.

(B) A holder that outbids, rejects, or fails to act upon an offer of fair consideration for the UST or UST system or the facility or property on which the UST or UST system is located, establishes by such outbidding, rejection, or failure to act, that the ownership indicia in the secured UST or UST system or facility or property on which the UST or UST system is located are not held primarily to protect the security interest, unless the holder is required, in order to avoid liability under federal or state law, to make a higher bid, to obtain a higher offer, or to seek or obtain an offer in a different manner.

(i) Fair consideration, in the case of a holder

maintaining indicia of ownership primarily to protect a senior security interest in the UST or UST system or facility or property on which the UST or UST system is located, is the value of the security interest as defined in this section. The value of the security interest includes all debt and costs incurred by the security interest holder, and is calculated as an amount equal to or in excess of the sum of the outstanding principal (or comparable amount in the case of a lease that constitutes a security interest) owed to the holder immediately preceding the acquisition of full title (or possession in the case of a lease financing transaction) pursuant to foreclosure, plus any unpaid interest, rent, or penalties (whether arising before or after foreclosure). The value of the security interest also includes all reasonable and necessary costs, fees, or other charges incurred by the holder incident to work out, foreclosure, retention, preserving, protecting, and preparing, prior to sale, the UST or UST system or facility or property on which the UST or UST system is located, re-lease, pursuant to a lease financing transaction (whether by a new lease financing transaction or substitution of the lessee), of an UST or UST system or facility or property on which the UST or UST system is located, or other disposition. The value of the security interest also includes environmental investigation costs (which could include a site assessment, inspection, and/or audit of the UST or UST system or facility or property on which the UST or UST system is located), and release

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response and corrective action costs incurred under §§ 50151 to 50167, Guam Administrative Rules and Regulations or any other costs incurred as a result of reasonable efforts to comply with any other applicable federal, state or local law or regulation; less any amounts received by the holder in connection with any partial disposition of the property and any amounts paid by the borrower (if not already applied to the borrower's obligations) subsequent to the acquisition of full title (or possession in the case of a lease financing transaction) pursuant to foreclosure. In the case of a holder maintaining indicia of ownership primarily to protect a junior security interest, fair consideration is the value of all outstanding higher priority security interests plus the value of the security interest held by the junior holder, each calculated as set forth in this subsection.

(ii) Outbids, rejects, or fails to act upon an offer of fair consideration means that the holder outbids, rejects, or fails to act upon within ninety days of receipt, a written, bona fide, firm offer of fair consideration for the UST or UST system or facility or property on which the UST or UST system is located received at any time after six months following foreclosure, as defined in § 501210(c), Guam Administrative Rules and Regulations. A "written, bona fide, firm offer" means a legally enforceable, commercially reasonable, cash offer solely for the foreclosed UST or UST system or facility or property on which the UST or UST system is located, including all

material terms of the transaction, from a ready, willing, and able purchaser who demonstrates to the holder's satisfaction the ability to perform. For purposes of this provision, the six-month period begins to run from the date that marketable title or deed has been issued, approved and recorded to the holder, and the holder has obtained access to the UST, UST system, UST facility and property on which the UST or UST system is located, provided that the holder was acting diligently to acquire marketable title or deed and to obtain access to the UST or UST system, UST facility and property on which the UST or UST system is located. If the holder fails to act diligently to acquire marketable title or deed or to gain access to the UST or UST system, the six-month period begins to run from the date on which the holder first acquires either title to or possession of the secured UST or UST system, or facility or property on which the UST or UST system is located, whichever is later.

(3) Actions that are not participation in management post-foreclosure. A holder is not considered to be participating in the management of an UST or UST system or facility or property on which the UST or UST system is located when undertaking actions under this chapter, provided that the holder does not otherwise participate in the management or daily operation of the UST or UST system as provided in §§ 501210(a) and 501230, Guam Administrative Rules and Regulations. Such allowable actions include, but are not limited to, release detection and release reporting, release response and corrective action, temporary or permanent closure of an UST or UST system, UST upgrading or replacement, and maintenance of corrosion protection. A

holder who undertakes these actions must do so in compliance with the applicable requirements in this Article. A holder may directly oversee these environmental compliance actions and voluntary environmental actions, and directly hire contractors to perform the work, and is not by such action considered to be participating in the management of the UST or UST system.

§ 501211 to § 501219. [Reserved.]

§ 501220. Ownership of an Underground Storage Tank or Underground Storage Tank System or Facility or Property on which an Underground Storage Tank or Underground Storage Tank System is Located.

Ownership of an UST or UST system or facility or property on which an UST or UST system is located. A holder is not an "owner" of a petroleum UST or UST system or facility or property on which a petroleum UST or UST system is located for purposes of compliance with the UST technical standards as defined in § 501200(a), Guam Administrative Rules and Regulations, the UST release response and corrective action requirements under §§ 50151 to 50167, Guam Administrative Rules and Regulations, and the UST financial responsibility requirements under §§ 50190 to 501111, Guam Administrative Rules and Regulations, provided the person:

(1) Does not participate in the management of the UST or UST system as defined in § 501210, Guam Administrative Rules and Regulations; and

(2) Does not engage in petroleum production, refining, and marketing as defined in § 501200(b), Guam Administrative Rules and Regulations.

§§ 501221 to 501229. [Reserved.]

§ 501230. Operating an Underground Storage Tank or Underground Storage Tank System.

(a) Operating an UST or UST system prior to foreclosure. A holder, prior to foreclosure, as defined in § 501210(c), Guam Administrative Rules and Regulations, is not an "operator" of a petroleum UST or UST system for purposes of compliance with the UST technical standards as defined in § 501200(a), Guam Administrative Rules and Regulations, the UST corrective action requirements under §§ 50151 to 50167, Guam Administrative Rules and Regulations, and the UST financial responsibility requirements under §§ 50190 to 501111, Guam Administrative Rules and Regulations, provided that the holder is not in control of or does not have responsibility for the daily operation of the UST or UST system.

(b) Operating an UST or UST system after foreclosure. The following provisions apply to a holder who, through foreclosure, as defined in § 501210(c), Guam Administrative Rules and Regulations, acquires a petroleum UST or UST system or facility or property on which a petroleum UST or UST system is located.

(1) A holder is not an "operator" of a petroleum UST or UST system for purposes of compliance with this chapter if there is an operator, other than the holder, who is in control of or has responsibility for the daily operation of the UST or UST system, and who can be held responsible for compliance with applicable requirements of this chapter.

(2) If another operator does not exist, as provided for under paragraph (1), a holder is not an "operator" of the UST or UST system, for purposes of compliance with the UST technical standards as defined in § 501200(a), Guam Administrative Rules and Regulations, the UST corrective action requirements under §§ 50151 to 50167, Guam Administrative Rules and Regulations, and the UST financial responsibility requirements under §§ 50190 to 501111, Guam Administrative Rules and Regulations, provided that the holder:

(A) Empties all of its known USTs and UST systems within sixty calendar days after foreclosure, or

another reasonable time period specified by the agency, so that no more than 2.5 centimeters (one inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remains in the system; leaves vent lines open and functioning; and caps and secures all other lines, pumps, manways, and ancillary equipment; and

(B) Empties those USTs and UST systems that are discovered after foreclosure within sixty calendar days after discovery, or another reasonable time period specified by the agency, so that no more than 2.5 centimeters (one inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remains in the system; leaves vent lines open and functioning; and caps and secures all other lines, pumps, manways, and ancillary equipment.

(3) If another operator does not exist, as provided for under paragraph (1), in addition to satisfying the conditions under paragraph (2), the holder must either:

(A) Permanently close the UST or UST system in accordance with §§ 50171 to 50174, Guam Administrative Rules and Regulations, except § 50172(b), Guam Administrative Rules and Regulations; or

(B) Temporarily close the UST or UST system in accordance with the following applicable provisions of § 50170, Guam Administrative Rules and Regulations:

(i) Continue operation and maintenance of corrosion protection in accordance with § 50131, Guam Administrative Rules and Regulations;

(ii) Report suspected releases to the agency; and

(iii) Conduct a site assessment in accordance with

§ 50172(a), Guam Administrative Rules and Regulations if the UST system is temporarily closed for more than twelve months and the UST system does not meet the applicable system design, construction, and installation requirements in Article 2, except that the spill and overfill equipment requirements do not have to be met. The holder must report any suspected releases to the agency.

For purposes of this provision, the twelve-month period begins to run from the date on which the UST system is emptied and secured under paragraph (2).

(4) The UST system can remain in temporary closure until a subsequent purchaser has acquired marketable title to the UST or UST system or facility or property on which the UST or UST system is located. Once a subsequent purchaser acquires marketable title to the UST or UST system or facility or property on which the UST or UST system is located, the purchaser must decide whether to operate or close the UST or UST system in accordance with applicable requirements in this chapter.

§§ 501231 to 501239. [Reserved.]

ARTICLE 10
OPERATOR TRAINING

§ 501240. General Requirement for All UST Systems
§ 501241. Designation of Class A, B, and C Operators
§ 501242. Requirements for Operator Training
§ 501243. Timing of Operator Training
§ 501244. Retraining
§ 501245. Documentation
§ 501246 to § 501249. [Reserved.]

§ 501240. General Requirement for All UST Systems.

All owners and operators of UST systems must ensure they have designated Class A, Class B, and Class C operators who meet the requirements of this subchapter.

§ 501241. Designation of Class A, B, and C Operators.

(a) UST system owners and operators must designate:

(1) At least one Class A and one Class B operator for each UST or group of USTs at a facility; and

(2) Each individual who meets the definition of Class C operator at the UST facility as a Class C operator.

(b) Separate individuals may be designated for each class of operator or an individual may be designated for more than one of the operator classes.

(c) Owners and operators shall submit written notice to the agency identifying the Class A and Class B operators for each UST or tank system in use or temporarily out of use no later than thirty (30) calendar days after an operator assumes the operator's responsibilities as a Class A or Class B operator. The notification must include the name of each operator, the date training was completed, the name and address of each facility where the USTs or tank systems for which the operator has been designated is located, and written verification from a training program approved or administered by the agency that the Class A and Class B operator for each UST or tank system has successfully completed operator training in the operator's class.

§ 501242. Requirements for Operator Training.

UST system owners and operators must ensure Class A, Class B, and Class C operators meet the requirements of this section. Any individual designated for more than one operator class must successfully complete the required training program or comparable examination according to

the operator classes in which the individual is designated.

(1) Class A operators. Each designated Class A operator must either be trained in accordance with subparagraphs (A) and (B) or pass a comparable examination in accordance with paragraph (5).

(A) At a minimum, the training must teach the Class A operators about the purpose, methods, and function of:

(i) Spill and overfill prevention;

(ii) Release detection;

(iii) Corrosion protection;

(iv) Emergency response;

(v) Product and equipment compatibility and demonstration;

(vi) Financial responsibility;

(vii) Notification and permitting;

(viii) Temporary and permanent closure;

(ix) Reporting, recordkeeping, testing, and inspections;

(x) Environmental and regulatory consequences of releases; and

(xi) Training requirements for Class B and Class C operators.

(B) At a minimum, the training program must evaluate Class A operators to determine these individuals have the knowledge and skills to make informed decisions regarding compliance and determine whether appropriate individuals are fulfilling the operation, maintenance, and recordkeeping requirements for UST systems in accordance with subparagraph (A).

(2) Class B operators. Each designated Class B operator must either receive training in accordance with subparagraphs (A) and (B) or pass a comparable examination, in accordance with paragraph (5).

(A) At a minimum, the training program for Class B

operators must teach the Class B operator about the purpose, methods, and function of:

(i) Operation and maintenance, including components of UST systems, materials of UST system components, and methods of release detection and release prevention applied to UST components;

(ii) Spill and overfill prevention;

(iii) Release detection and related reporting;

(iv) Corrosion protection;

(v) Emergency response;

(vi) Product and equipment compatibility and demonstration;

(vii) Reporting, recordkeeping, testing, and inspections;

(ix) Environmental and regulatory consequences of releases; and

(x) Training requirements for Class C operators.

(B) At a minimum, the training program must evaluate Class B operators to determine these individuals have the knowledge and skills to implement applicable UST regulatory requirements in the field on the components of typical UST systems in accordance with subparagraph (A).

(3) Class C operators. Each designated Class C operator must either: be trained by a Class A or Class B operator in accordance with subparagraphs (A) and (B); complete a training program in accordance with subparagraphs (A) and (B); or pass a comparable examination, in accordance with paragraph (5).

(A) At a minimum, the training program for the Class C operator must teach the Class C operators to take appropriate actions (including notifying appropriate authorities) in response to emergencies or alarms caused by spills or releases resulting from the

operation of the UST system.

(B) At a minimum, the training program must evaluate Class C operators to determine these individuals have the knowledge and skills to take appropriate action (including notifying appropriate authorities) in response to emergencies or alarms caused by spills or releases from an underground storage tank system.

(4) Training program requirements. Any training program must meet the minimum requirements of this section, must incorporate an evaluation of operator knowledge through written examination, a practical demonstration, or other reasonable testing methods acceptable to the agency, and must be approved or administered by the agency. An operator training program may consist of in-class or on-line instruction and may include practical exercises.

(5) Comparable examination. A comparable examination must, at a minimum, test the knowledge of the Class A, Class B, or Class C operators in accordance with the requirements of paragraph (1), (2), or (3), as applicable. The acceptability of a comparable examination to meet the requirements of this section is determined by the agency. The agency may accept operator training verification from other states if the operator training is deemed by the agency to be equivalent to the requirements of this section.

§ 501243. Timing of Operator Training.

(a) An owner and operator must ensure that designated Class A, Class B, and Class C operators meet the requirements in § 501242 not later than October 13, 2015.

(b) Class A and Class B operators designated on or after October 13, 2015, must meet requirements in § 501242 within thirty (30) calendar days of assuming duties.

(c) Class C operators designated after October 13, 2015, must be trained

before assuming duties of a Class C operator.

§ 501244. Retraining.

(a) Class A and class B operators shall be retrained every two (2) years. Class C operators shall be retrained every three hundred sixty-five (365) calendar days.
(b) Class A and Class B operators of UST systems determined by the agency to be out of compliance must complete a training program or comparable examination in accordance with requirements in § 501242. The training program or comparable examination must be developed or administered by the agency or an independent organization. An UST or tank system is out of compliance if the system:

(1) Meets any of the delivery prohibition criteria outlined in § 501429; or
(2) Is in significant violation of other requirements, such as temporary or permanent closure, tank registration, or financial responsibility, as determined by the Administrator.

(c) UST system owners and operators must ensure Class A and Class B operators are retrained as required in subsection (b) no later than thirty (30) calendar days from the date the agency determines the facility is out of compliance except in one of the following situations:

(1) Class A and Class B operators take annual refresher training. Refresher training for Class A and Class B operators must cover all applicable requirements in § 501242;
(2) The agency, at its discretion, waives this retraining requirement for either the Class A or Class B operator or both.

§ 501245. Documentation.

Owners and operators of underground storage tank systems must maintain a list of designated Class A, Class B, and Class C operators and maintain records verifying that training and retraining, as applicable, have been completed, in accordance with § 50134 as follows:

(1) The list must:

(A) Identify all Class A, Class B, and Class C operators currently designated for the facility; and

(B) Include names, class of operator trained, date assumed duties, date each completed initial training, and any retraining.

(2) Records verifying completion of training or retraining must be a paper or electronic record for Class A, Class B, and Class C operators. The records, at a minimum, must identify name of trainee, date trained, operator training class completed, and list the name of the trainer or examiner and the training company name, address, and telephone number. Owners and operators must maintain these records for as long as Class A, Class B, and Class C operators are designated. The following requirements also apply to the following types of training:

(A) Records from classroom or field training programs (including Class C operator training provided by the Class A or Class B operator) or a comparable examination must, at a minimum, be signed by the trainer or examiner;

(B) Records from computer based training must, at a minimum, indicate the name of the training program and web address, if Internet based; and

(C) Records of retraining must include those areas on which the Class A or Class B operator has been retrained.

§ 501246 to § 501249. [Reserved.]

ARTICLE 11
RESERVED

§ 501250 to § 501299. [Reserved.]

ARTICLE 12
PERMITS AND VARIANCES

§ 501300 to § 501322. [Reserved]
§ 501323. Permit Required
§ 501324. Application for Permit
§ 501325. Permit
§ 501326. Permit Renewal
§ 501327. Action On and Timely Approval of Application for Permit
§ 501328. Permit Conditions
§ 501329. Modification of Permit
§ 501330. Revocation or Suspension of Permit
§ 501331. Change in Owner or Operation for a Permit
§ 501332. Variance Allowed
§ 501333. Variance Application
§ 501334. Maintenance of Permit or Variance
§ 501335. Fees
§ 501336 to § 501339. [Reserved.]

§ 501300 to § 501322. [Reserved]

§ 501323. Permit Required.

(a) No person shall install, operate, modify, or close an UST or tank system without first obtaining a permit from the Administrator.
(b) The Administrator shall approve an application for a permit only if the applicant has submitted sufficient information to the satisfaction of the Administrator that the technical, financial, and other requirements of this chapter are or can be met and the installation and operation of the UST or

tank system will be done in a manner that is protective of human health and the environment.
(c) A permit shall be issued only in accordance with 10 GCA Chapter 76, and this Article, and it shall be the duty of the permittee to ensure compliance with the law in the installation, operation, and closure of the UST or tank system.
(d) Issuance of a permit shall not relieve any person of the responsibility to comply fully with all applicable laws

§ 501324. Application for Permit.

(a) Every application for a permit shall be submitted to the agency on the "Application for an Underground Storage Tank Permit" form prescribed by the agency.
(b) A permit fee in accordance with § 501335 shall accompany each application for a permit.
(c) The applicant shall submit sufficient information to enable the Administrator to make a decision on the application. Information submitted shall include but not be limited to the following:

(1) General information on involved parties, including the landowner, UST owner, and UST operator; location of the property; and basic description of the UST or tank system;
(2) Age, size, precise location within the property, and use of each UST;
(3) Other information required in the form prescribed by the Administrator; and
(4) Other information as the agency may require.

(d) Every application shall be signed by the owner and the operator and shall constitute an acknowledgment that the applicants assume responsibility for the installation and operation of the UST or tank system in accordance with this Article and the conditions of the permit, if issued. Each signatory shall be:

(1) In the case of a corporation, a principal executive officer of at least the level of vice president, or a duly authorized

representative if that representative is responsible for the overall operation of the UST or tank system;

(2) In the case of a partnership, a general partner;

(3) In the case of a sole proprietorship, the proprietor; or

(4) In the case of a county, state, or federal entity, either a principal executive officer, ranking elected official, or other duly authorized employee.

§ 501325. Permit.

(a) Upon approval of an application for a permit to install and operate an UST or tank system, the Administrator shall issue a permit for a term of one (1) year.

(b) The owner or operator shall have one (1) year from the issuance of the permit to install an UST or tank system. If the installation is not completed within one (1) year, the permit expires and the owner or operator must apply for a new permit.

(c) The owner or operator must inform the agency at least seven (7) calendar days prior to performing the actual installation. The information shall include the permit number, name and address of the UST or tank system, the contact person, the contact person's phone number, and date and time of actual installation.

(d) The owner or operator must notify the agency within thirty (30) calendar days after the installation of the UST or tank system. The notification shall be submitted on the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator. If information submitted on the form has changed since the original application. The form must certify compliance with the following requirements:

(1) Installation of tanks and piping under § 50120(f);

(2) Cathodic protection of steel tanks and piping under § 50120(b) and (c);

(3) Financial responsibility under Article 8; and

(4) Release detection under §§ 50141 and 50142.

(e) The agency, where practicable and appropriate, may issue one (1)

permit to the owner or operator of an UST system for the purpose of combining all USTs, piping, and any ancillary equipment constituting that UST system under one permit, irrespective of the number of individual USTs, so long as that UST system is part of one reasonably contiguous physical location.

§ 501326. Permit Renewal.

(a) On application, a permit may be renewed for a term of one (1) year.
(b) A renewal fee in accordance with § 501335 shall accompany each application for renewal of a permit.
(c) An application for a renewal shall be received by the agency at least sixty (60) calendar days prior to the expiration of the existing permit and shall be submitted on the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator.

§ 501327. Action On and Timely Approval of Application for Permit.

(a) The Administrator need not act upon nor consider any incomplete application for a permit. An application shall be deemed complete only when:

(1) All required and requested information, including the application form, plans, specifications, and other information required by this Article have been submitted in a timely fashion;
(2) All fees have been paid as prescribed in § 501335; and
(3) The Administrator determines that the application is complete.

(b) The Administrator shall approve, approve with conditions, or deny a complete application for a permit to install or operate an UST or tank system or a permit renewal, or modification, required under this chapter.

§ 501328. Permit Conditions.

The Administrator may impose conditions on a permit that the Administrator deems reasonably necessary to ensure compliance with this Article and any other relevant state requirement, including conditions relating to equipment, work practice, or operation. Conditions may include, but shall not be limited to, the requirement that devices for measurement or monitoring of regulated substances be installed and maintained and the results reported to the Administrator, all costs and expenses to be borne by the applicant.

§ 501329. Modification of Permit.

(a) The Administrator may modify a permit if there is a change that requires a modification to an existing permit. Changes requiring a permit modification shall include but not be limited to:

(1) The addition or removal of an UST from an UST system; and

(2) Any change to or modification of an UST or UST system which would otherwise place the existing UST or UST system out of compliance with this Article or an existing permit.

(b) An application for modification of a permit shall be made in writing to the agency and shall be accompanied by sufficient information on the planned renovation or modification to the UST or tank system to assist the agency in making a determination as to whether the application for modification should be denied or granted.

(c) Applications for a permit modification shall be received by the agency no later than sixty (60) calendar days prior to the occurrence of the event that prompted the application except that applications for change-in-service must be received by the agency at least thirty (30) calendar days before the owner or operator begins the change-in-service. Applications shall be submitted on the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator.

(d) Owners and operators shall submit a permit application to add USTs or tank systems to an existing permit. If the Administrator approves the

addition, the existing permit shall be terminated, and a new permit shall be issued which covers the additional USTs as well as the already-permitted USTs. The term of the new permit shall be for the remaining term of the original permit.

§ 501330. Revocation or Suspension of Permit.

The Administrator may revoke or suspend a permit if the Administrator finds any one of the following:

(1) There is a release or threatened release of regulated substances that the agency deems to pose an imminent and substantial risk to human health or the environment;
(2) The permittee violated a condition of the permit; or
(3) The permit was obtained by misrepresentation, or failure to disclose fully all relevant facts.

§ 501331. Change in Owner or Operator for a Permit.

(a) Should a change in owner or operator of an UST or tank system occur, the new owner or operator shall complete and submit the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator.
(b) The new owner or operator shall submit the completed form to the agency at least thirty (30) calendar days prior to the change in owner or operator.

§ 501332. Variance Allowed.

Provisions pursuant to this Article relating to USTs or tank systems which are more stringent than Title 40, Part 280 of the Code of Federal Regulations, published by the Office of the Federal Register, as amended as of July 1, 2017, may be varied by the Administrator in accordance with this Article. No variance may be less stringent than the federal requirements.

§ 501333. Variance Application.

(a) An application for a variance shall be submitted to the agency on the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator.
(b) A variance fee in accordance with § 501335 shall accompany each application for a variance.
(c) Every application shall be signed by the owner and operator, and the signature shall be by one of the following:

(1) In the case of a corporation, by a principal executive officer of at least the level of vice president, or a duly authorized representative if that representative is responsible for the overall operation of the UST or tank system;
(2) In the case of a partnership, by a general partner;
(3) In the case of a sole proprietorship, by the proprietor; or
(4) In the case of a county, state, or federal entity, by a principal executive officer, ranking elected official or other duly authorized employee.

(d) The Administrator shall approve, approve with conditions, or deny a complete application as required under this Article. The Administrator shall notify the applicant of the agency's decision, within one hundred eighty (180) calendar days of receipt of a complete application. Otherwise, a complete application is deemed approved one hundred eighty (180) calendar days after it is received by the agency.

§ 501334. Maintenance of Permit or Variance.

(a) Permits and variances, including application records, shall be maintained at the location of the UST or tank system for which the permit was issued and shall be made available for inspection upon request of any duly authorized representative of the agency.
(b) No person shall willfully deface, alter, forge, counterfeit, or falsify any permit or variance.

§ 501335. Fees.

(a) Every applicant for a permit or a variance, or applicant for modification or renewal of a permit or variance, shall pay the applicable fees as set forth below:

Type of Application	Permit	Variance
Permit Application Fee per Tank (New Installation)	$500.00	$550.00
Permit to Operate Fee per Tank (Annual)	$250.00	
Permit to Modify	$150.00	$200.00
Permit to Close	$500.00	$550.00
Permit to Install OWS	$500.00	$550.00
Permit to Close OWS	$500.00	
Request for Proposal (Copy)	$25.00	
Installer's Certification (2 years)	$150.00	
Operator's Certification A & B (2 years)	$150.00	
Operator's Re-Certification (2 years)	$100.00	

(b) Fees shall be submitted with the application and are nonrefundable.
(c) Fees shall be made payable to Guam Environmental Protection Agency UST-LUST Fund.
(d) If more than one type of application is combined, the highest applicable fee will be assessed. However, a permit application and a variance application shall not be combined under one fee.

§ 501336 to § 501399. [Reserved.]

ARTICLE 13
ENFORCEMENT

§ 501400 to § 501420. [Reserved.]
§ 501421. Purpose.
§ 501422. Field Citation
§ 501423 to § 501428. [Reserved.]
§ 501429. Delivery, Deposit, and Acceptance Prohibition

§ 501400 to § 501420. [Reserved.]

§ 501421. Purpose.

The purpose of this Article is to create an enforcement program that facilitates the effective and expeditious resolution of violations of 10 GCA Chapter 76 and this Chapter.

§ 501422. Field Citations.

(a) Field citations may be issued for violations of 10 GCA Chapter 76 and this Chapter, that the agency deems appropriate for resolution through the issuance of a field citation. Nothing in this section requires the agency to elect one enforcement mechanism over another and the decision to proceed with one course of action over, or in conjunction with, another is within the discretion of the Administrator.
(b) The field citation is an offer to settle an allegation of noncompliance with this Chapter. If the owner or operator declines to accept the agency's offer to settle within the time period set forth in the field citation, the agency may bring administrative or civil enforcement action under 10 GCA Chapter 76.
(c) The field citation shall set forth sufficient facts to notify the recipient of the alleged violations, the applicable law, the proposed settlement amount, and the time period during which to respond.
(d) By returning the signed settlement agreement attached to the field citation and payment of the proposed settlement amount to the agency, the owner or operator will be deemed to have accepted the terms and

conditions of the settlement offer.
(e) By signing the settlement agreement, the owner or operator waives his or her right to a contested case hearing pursuant to 10 GCA Chapter 76 and 5 GCA Chapter 9.

§ 501423 to § 501428. [Reserved.]

§ 501429. Delivery, Deposit, and Acceptance Prohibition.

(a) No person shall deliver to, deposit into, or accept a regulated substance into an UST or tank system that has been identified by the agency as ineligible for delivery, deposit, or acceptance.
(b) An UST or tank system shall be identified by the agency as ineligible for delivery, deposit, or acceptance by placement of a tag or other notice of ineligibility onto the fill pipe of the ineligible UST or tank system. If an owner or operator is not present at the facility at the time the underground storage tank is identified as ineligible, the agency may notify an employee at the facility at the time of identification in lieu of the owner or operator.
(c) No person shall remove, tamper with, destroy, or damage a tag or other notice of ineligibility affixed to any UST or tank system unless authorized to do so by the agency. Removal of a tag or other notice of ineligibility by the agency or person authorized by the agency shall occur only after the agency confirms that the conditions giving rise to the delivery prohibition have been corrected to the agency's satisfaction. The agency shall make this determination either at a hearing, if one is requested in accordance with this section, or as soon as practicable.
(d) Pursuant to this section, a tag or other notice of ineligibility may immediately be affixed to the fill pipe of an UST or tank system upon finding by the agency of any of the following:

(1) Operating without a permit issued by the agency;
(2) Operating inconsistently with one or more conditions of a permit issued by the agency;
(3) Required spill prevention equipment is not installed or

properly functioning or maintained;

(4) Required overfill protection equipment is not installed or properly functioning or maintained;

(5) Required release detection equipment is not installed or properly functioning or maintained;

(6) Required corrosion protection equipment is not installed or properly functioning or maintained;

(7) Failure to maintain financial responsibility; or

(8) Failure to protect a buried metal flexible connector from corrosion.

(e) An owner or operator of an UST or tank system designated by the agency to be ineligible may request a hearing to contest the agency's determination of ineligibility. The hearing shall modify or affirm the agency's determination of ineligibility and shall be conducted in accordance with 10 GCA Chapter 76 and 5 GCA Chapter 9, and the agency's rules of practice and procedure.

THE GUAM ENVIRONMENTAL PROTECTION AGENCY BOARD OF DIRECTORS

Guam EPA Resolution # GEPA 19-002

Relative to the approval of the Guam Environmental Protection Agency's Guam Underground Storage Tank Regulations

WHEREAS, 10 Guam Code Annotated Chapter 45, § 45106 provides that the Agency is authorized and directed to adopt, amend and repeal rules and regulations implementing and consistent with the powers and duties vested in the Agency pursuant to § 45105; and

WHEREAS, 10 Guam Code Annotated Chapter 76, Article 1, § 76104 provides that one of the powers and duties of the Guam Environmental Protection Agency Administrator shall be to develop and administer an Underground Storage Tank (UST) program for Guam pursuant to 10 Guam Code Annotated Chapter 76, Article 1; and

WHEREAS, 10 Guam Code Annotated Chapter 76, Article 1, § 76102(d) provides that one of the purposes of 10 Guam Code Annotated Chapter 76 (Underground Storage of Regulated Substances Act) is to enact and establish regulations that ensure consistent clean-up of regulated substances and mitigation of the damage they cause; and

WHEREAS, 10 Guam Code Annotated Chapter 76, Article 1, § 76104(d) provides that one of the powers and duties of the Guam Environmental Protection Agency Administrator shall be to enact and enforce rules and regulations governing UST design, construction, installation, release detection and inventory control, compatibility, record maintenance, reporting, corrective action, closure, and financial responsibility in order to enforce Chapter 76; and

WHEREAS, 10 Guam Code Annotated Chapter 76, Article 1, § 76104(f) provides that one of the powers and duties of the Guam Environmental Protection Agency Administrator shall be to enact and enforce other rules and regulations as necessary to establish a UST program, which meets the requirements of Section 9004 of Subtitle I of RCRA.

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Doc. No. 35GL-20-2341.

NOW THEREFORE, the Guam Environmental Protection Agency Board of Directors hereby adopts the Guam Underground Storage Tank Regulations, a true and accurate copy of which is attached hereto and incorporated herein by reference.

Approved This Day: December 12, 2019

Robert A. Perron
Board Chairman, Guam EPA

12/12/19
Date

Brenda M Aranza for
Terrence Brooks
Board Vice Chairman, Guam EPA

12/12/19
Date

Arlene Acfalle
Board Secretary, Guam EPA

12/12/19
Date

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FACT SHEET – RESOLUTION NUMBER # 19-002
GUAM EPA - BOARD OF DIRECTORS MEETING
DATE: September 19, 2019

Pursuant to Title 10, Guam Code Annotated Chapter 76 § 76104(d), Underground Storage of Regulated Substances Act, the Guam Environmental Protection Agency hereby submits a copy of the Draft Underground Storage Tank (UST) Regulations for your review and motion for approval.

Background:

- March 12, 2019 – Mr. Walter S. Leon Guerrero, Administrator for the Guam Environmental Protection Agency (Guam EPA) received a letter from Ms. Geraldine A. Cepeda, Compiler of Laws for the Supreme Court of Guam. Ms. Cepeda stated that upon review of the entire record for adoption of the UST Regulations (Title 22 GAR, Chapter 50 dated September 30, 2013), the rule-making process did not comport with applicable Guam law (pursuant to 5 GCA, Chapter 9)

- In July 2015, EPA revised the 1988 federal underground storage tank (UST) regulations by increasing emphasis on properly operating and maintaining UST equipment. The revision will help prevent and detect UST releases and help ensure all USTs in the United States, including US territories and Indian country meet the same minimum standards, In addition, EPA added new operation and maintenance requirements.

- Because of the large regulated universe of USTs at the inception of the program, EPA designed the UST program to be implemented by states, US territories, and Indian country.

    - 38 states, plus the District of Columbia and Puerto Rico, have been approved to act in lieu of the federal program and may have more stringent UST requirements: of those, four (4) states have approved programs under 2015 federal UST regulations.
    - The remaining states have agreements with EPA to be the primary implementing agency including Guam.
    - Guam EPA will be seeking State Program Approval (SPA) once our regulations have been approved.

Doc. No. 35GL-20-2341.

- States have reported that UST releases are the most common source of groundwater contamination and that petroleum is the most common contaminant.

EPA's Review of Draft UST Regulations

- May, June, and July 2019, Ms. Elizabeth McDermott, UST Regulation Development and State Program Approval, EPA Office of Underground Storage Tanks (Headquarters, Washington DC) reviewed and provided comments on Guam's Draft UST Regulations. An electronic copy of the draft regulations was also provided to Mr. Omer Shalev, USEPA Region 9. No comments were received from Omer.

Public Outreach:

- August 6, 2019 – Guam EPA notified registered owners and operators via email of the Ad in the Guam Daily Post of the Notice of Public Hearing and Public Comment and Review Period for the proposed UST Regulations of Regulated Substances.. A copy of the Ad was included in the email that included the Agency's website (www.epa.guam.gov) to download the regulations.

Guam Daily Post - Notice of Public Hearing and Public Review and Comment Period:

- August 5, 2019 and August 30, 2019
  - ❖ Guam EPA placed an Ad in the Guam Daily Post informing the general public and owners/operators of USTs containing Regulated Substances of a Public Hearing for 22 GAR, Chapter 50, Guam EPA UST Regulations on September 11, 2019 at 3:00 p.m. at Guam EPA's Conference Room, Tiyan.
  - ❖ The Ad also included the start date of August 5, 2019 and end date of September 19, 2019 for the ***45-days Public Comment and Review Period*** for the proposed UST Regulations and the availability of the Environmental Impact Statement (EIS) and UST Regulations at the Agency and Agency website.

Public Hearing:

Guam EPA conducted a Public Hearing: Wednesday September 11, 2019 @ 3:00 p.m. at the Guam EPA Administration Building Conference Room. The meeting was attended by 13 stakeholders and adjourned at approximately 3:17 p.m., September 11, 2019.

- There were no significant comments or questions made on the proposed UST regulations other than the vent lines from the UST – Do we require lines to be double walled. Response – not required for vent lines.
- The other question that was asked was the process and the duration that it would take for the regulations to become effective.

GUAM ENVIRONMENTAL PROTECTION AGENCY
AHENSIAN PRUTEKSION LINA'LA GUAHAN

NOTICE OF PUBLIC HEARING
GUAM UNDERGROUND STORAGE TANK REGULATIONS

In accordance with 5 GCA §9301(a), the Guam Environmental Protection Agency (Guam EPA) would like to notify the general public and owners/operators of Underground Storage Tanks (USTs) containing Regulated Substances of a Public Hearing for 22 GAR, Chapter 50, Guam EPA UST Regulations.

PUBLIC HEARING:
Wednesday • September 11, 2019 • 3:00 p.m.

at the Guam EPA Administration Building Conference Room located at 17-3304 Mariner Avenue, Tiyan.

PUBLIC COMMENT & REVIEW PERIOD:
August 5, 2019 - September 19, 2019

Guam UST Regulations relevant to this public hearing can be viewed at the Agency's administration building in Tiyan from 8:00 a.m. to 4:30 p.m. on business days, beginning on Monday, August 5, 2019.
The proposed regulations are also available at epa.guam.gov.
Written comments are welcomed and must be received by the agency via hand delivery or mail and should be addressed to: Administrator, c/o Guam EPA: 17-3304 Mariner Avenue Tiyan Barrigada, Guam 96913-1617
Written comments must be received, or postmarked no later that 5:00 p.m. on September 19, 2019.

Facsimile and e-mail submittals will not be accepted.

Should you have any questions or require further clarification, please contact the Guam EPA Hazardous Waste Management Program at (671) 300-4751/2.

/s/ Walter S. Leon Guerrero, Administrator
Individuals requiring special accomodations, auxiliary aids or services should contact Guam EPA at 300.4751/2.

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/s/ Walter S. Leon Guerrero, Administrator
Individuals requiring special accomodations, auxiliary aids or services should contact Guam EPA at 300.4751/2.

Public Notice – July 24, 2019

Doc. No. 35GL-20-2341.

British queen approves Johnson's bid to suspend Parliament

LONDON (Tribune News Service) – Queen Elizabeth II approved British Prime Minister Boris Johnson's plan to suspend Parliament from mid-September to mid-October, a move that could hamper efforts by lawmakers to block a no-deal Brexit.

Johnson wants Britain to leave the European Union as scheduled on Oct. 31, even if it means not having a withdrawal deal in place, a scenario that many fear could wreak havoc on the country's economy with ripple effects far beyond.

The monarch's formal body of advisers, the Privy Council, said in a statement that the suspension would take place "no earlier than Monday 9th September and no later than Thursday 12th September 2019 to Monday 14th October 2019."

Johnson requested the suspension earlier on Wednesday in what opposition leaders say is an intentional attempt to thwart their efforts by robbing them of valuable parliamentary time.



JOHNSON: Prime Minister Boris Johnson at West Midlands Police Learning and Development Centre in Birmingham, England, July 26. Johnson said that the Brexit deal will be difficult." Joby Malville/PA Wire/Zuma Press/Tribune News Service

His proposal was met with outrage by the opposition and some members within his own Conservative Party.

Labour leader Jeremy Corbyn and Liberal Democrat leader Jo Swinson wrote to the queen to protest Johnson's bid, Britain's Press Association reported.

Corbyn said he had written the letter to protest "in the strongest possible terms on behalf of my party and I believe all the other opposition parties are going to join in with this," the report said.

Johnson denied the suggestion that his move was motivated by a desire to force through a no-deal Brexit, however, saying in a statement that it would ensure "that there is good time before and after the (EU summit) for Parliament to further consider Brexit issues."

Johnson is scheduled to meet other EU leaders at a summit on Oct. 17 and 18 to discuss the terms of the departure.

John Bercow, the speaker of the House of Commons, referred to the move as a "constitutional outrage."

"Shutting down Parliament would be an offense against the democratic process and the rights of parliamentarians as the people's elected representatives," Bercow said.

Conservative backbencher Dominic Grieve called it "outrageous," saying that it could lead to a vote of no confidence in Johnson.

"This government will come down," he said.

"So it seems that Boris Johnson may actually be about to shut down Parliament to force through a no-deal Brexit," Scottish First Minister Nicola Sturgeon said before the announcement.

"Unless MPs come together to stop him next week, today will go down in history as a dark one indeed for UK democracy," she added.

The European Commission called on Britain to put forward any proposed changes to the Brexit divorce deal as soon as possible, while refusing to comment on Johnson's request to suspend Parliament.

"Our working assumption is that Brexit should occur on Oct. 31 and that should happen with a deal," said commission spokeswoman Mina Andreeva. "For that to happen, of course the earlier we see workable proposals, the better."

Also Wednesday, British Brexit negotiator David Frost met with EU counterparts. The commission did not comment on their discussions, however.

US will not release Middle East peace plan before Israeli election

WASHINGTON (Reuters) – The United States will not release the long-delayed political portion of its Israeli-Palestinian peace plan before Israel's elections next month, White House Middle East envoy Jason Greenblatt said on Wednesday.

The move, announced in a tweet by Greenblatt, keeps the plan's details from becoming an issue in the election, in which the leadership of Prime Minister Benjamin Netanyahu, a close ally of President Donald Trump, is at stake.

"We have decided that we will not be releasing the peace vision (or parts of it) prior to the Israeli election," Greenblatt said on Twitter.



Benjamin Netanyahu

Trump's son-in-law Jared Kushner has been working behind the scenes on the plan to resolve the decades-old Israeli-Palestinian conflict, although Palestinians, who say the Trump administration is too pro-Israel, say it is dead in the water.

A goal to raise tens of billions of dollars to fund the plan was announced earlier this year, but the political details have remained under wraps, with Kushner refusing to say even whether it would offer Palestinians a state of their own.

Trump on Monday had said the plan might be revealed before the Israeli election.

At a campaign rally on Wednesday, Netanyahu said he expected the U.S. proposal would not be delayed for much longer.

"This evening we learned that President Trump's 'deal of century' would be published and presented to the world after the election. I can reasonably estimate that it will happen very soon after the election," Netanyahu said.

SUGAR PLUM TREE INCORPORATED

STATEMENT OF ACTIVITIES

1/1/2018 - 12/31/2018

SUPPORT AND REVENUE:		
Special events	$	6,778.00
Other miscellaneous income	$	4,400.00
TOTAL SUPPORT AND REVENUE	$	11,178.00
EXPENDITURES:		
Program services	$	3,481.37
Management and general	$	6,000.00
Direct expenses	$	3,100.00
TOTAL EXPENDITURES	$	12,581.37
CHANGES IN NET ASSETS	$	(1,403.37)
NET ASSETS AT BEGINNING OF YEAR	$	11,822.58
NET ASSETS AT END OF YEAR	$	10,419.21

STATEMENT OF FINANCIAL POSITION

1/1/2018 - 12/31/2018

ASSETS:		
Cash and cash equivalents	$	10,419.21
TOTAL ASSETS	$	10,419.21
NET ASSETS:		
Unrestricted	$	10,419.21
TOTAL NET ASSETS	$	10,419.21

This is to certify that the above Statement of Activities and Statement of Financial Position true and an accurate account of the Sugar Plum Tree Incorporated.

Rachalyn Cardines, Treasurer

GUAM ENVIRONMENTAL PROTECTION AGENCY

NOTICE OF PUBLIC HEARING

GUAM UNDERGROUND STORAGE TANK REGULATIONS

In accordance with 5 GCA §9301(a), the Guam Environmental Protection Agency (Guam EPA) would like to notify the general public and owners/operators of Underground Storage Tanks (USTs) containing Regulated Substances of a Public Hearing for 22 GAR, Chapter 50, Guam EPA UST Regulations.

PUBLIC HEARING:

Wednesday • September 11, 2019 • 3:00 p.m.

at the Guam EPA Administration Building Conference Room located at 17-3304 Mariner Avenue, Tiyan.

PUBLIC COMMENT & REVIEW PERIOD:

August 5, 2019 - September 19, 2019

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The proposed regulations are also available at epa.guam.gov.

Written comments are welcomed and must be received by the agency via hand delivery or mail and should be addressed to: Administrator, c/o Guam EPA: 17-3304 Mariner Avenue Tiyan Barrigada, Guam 96913-1617

Written comments must be received, or postmarked no later that 5:00 p.m. on September 19, 2019.

Facsimile and e-mail submittals will not be accepted.

Should you have any questions or require further clarification, please contact the Guam EPA Hazardous Waste Management Program at (671) 300-4751/2.

/s/ Walter S. Leon Guerrero, Administrator

Individuals requiring special accomodations, auxiliary aids or services should contact Guam EPA at 300.4751/2.

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NOTICE OF PUBLIC HEARING
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/s/ Walter S. Leon Guerrero, Administrator
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20-009 HWMP 10/4/19

EDWARD M. BIRN
Director (Direktot)
EDITH C. PANGELINAN
Deputy Director (Sigundo Direktot)

DEPARTMENT OF ADMINISTRATION
DIPATTAMENTON ATMENESTRASION
DIRECTOR'S OFFICE
(Ufisinan Direktot)

Telephone (*Telifon*): (671) 475-1101/1250 • Fax (*Faks*): (671) 477-6788

LOURDES A. LEON GUERRERO
Governor (Maga'hâga)
JOSHUA F. TENORIO
Lt. Governor (Sigundo Maga'lâhi)

October 01, 2019

MEMORANDUM

TO: Mr. Walter S. Leon Guerrero, Administrator
Guam Environmental Protection Agency
FROM: Director, Department of Administration

SUBJECT: **5 GUAM CODE ANNOTATED, CHAPTER 9, ADMINISTRATIVE ADJUDICATION LAW, SECTION 9301(e)**

Buenas yan Hafa Adai Mr. Leon Guerrero,

Thank you for sending the **"DRAFT"** Rules and Regulations to enact and enforce Underground Storage Tanks (UST) pursuant to Title 10, Guam Code Annotated (GCA), Chapter 76, Article 1, Section 76104(f).

The Department of Administration has no objection to the **"DRAFT"**.

Thank you for your time and assistance pertaining to this matter.

Senseramente,

EDWARD M. BIRN

RECEIVED
OCT 02 2019
Guam Environmental Protection Agency

cc: Edith C. Pangelinan, Deputy Director, DOA

AHENSIAN PRUTEKSION LINA'LA GUÅHAN
LOURDES A. LEON GUERRERO, GOVERNOR OF GUAM • JOSHUA F. TENORIO, LIEUTENANT GOVERNOR OF GUAM
WALTER S. LEON GUERRERO, ADMINISTRATOR

SEP 27 2019

RECEIVED
SEP 28 2019
DEPT OF ADMINISTRATION
DIRECTOR'S OFFICE

Mr. Edward M. Birn
Director
Department of Administration
590 South Marine Corps Drive Suite 215
Tamuning, Guam 96913

Reference: 5 GUAM CODE ANNOTATED, CHAPTER 9, ADMINISTRATIVE ADJUDICATION LAW, SECTION 9301(e)

Hafa Adai Mr. Birn:

The Guam Environmental Protection Agency (Guam EPA) has completed its draft rules and regulations to enact and enforce Underground Storage Tanks (UST), pursuant to Title 10, Guam Code Annotated (GCA), Chapter 76, Article 1, Section 76104(f) that states:

> *The Administrator shall enact and enforce other rules and regulations as necessary to establish a UST program, which meets the requirements of Section 9004 of Subtitle I of the Resource Conservation and Recovery Act (RCRA).*

It is the understanding of Guam EPA that the draft UST rules and regulations does not include any classification specifications or wage and benefit determination, the Agency's intent is to comply with 5 GCA Section 9301(e), which requires a review and a written statement of approval from the Department of Administration. The Agency is seeking your written concurrence/approval with our draft UST rules and regulations so that we can include it as part of our administrative adjudication record to I Liheslaturan Guåhan.

For your kind consideration and expeditious review, attached herewith are the Agency's draft UST rules and regulations and Environmental Impact Statement. We understand that your department is not without its own personnel challenges, and we appreciate your assistance in helping our Agency meet its mission in protecting the island's human health and the environment.

Doc. No. 35GL-20-2341.

Should you have any question(s) regarding the draft UST rules and regulations, please feel free to contact Mr. Vincent J Pereira or Mr. Michael O'Mallan at 671-300-4751/2.

Very Respectfully,

WALTER S. LEON GUERRERO
Administrator

Enclosure: Guam Draft UST Regulations

AHENSIAN PRUTEKSION LINA'LA GUÅHAN
LOURDES A. LEON GUERRERO, GOVERNOR OF GUAM • JOSHUA F. TENORIO, LIEUTENANT GOVERNOR OF GUAM
WALTER S. LEON GUERRERO, ADMINISTRATOR

ECONOMIC IMPACT STATEMENT
FOR THE UNDERGROUND STORAGE OF REGULATED SUBSTANCES PROPOSED RULES AND REGULATIONS AS DETERMINED BY THE GUAM ENVIRONMENTAL PROTECTION AGENCY

The Guam Environmental Protection Agency (Guam EPA) seeks to propose rules and regulations for the underground storage of regulated substances by way of underground storage tanks (USTs). In accordance with 10 GCA §76104(d), and as enacted by passage of Guam Public Law 30-36 on June 19, 2009, the Guam EPA administrator shall "enact, modify, update, repeal, and enforce rules and regulations governing UST design, construction, installation, release detection and inventory control, compatibility, record maintenance, reporting, corrective action, closure, and financial responsibility in order to enforce this Chapter;"

The promulgation of these proposed rules and regulations seeks to administratively satisfy the following:

- Compliance with the United States Environmental Protection Agency's (USEPA) for governing local USTs in a manner that is consistent or more stringent with federal regulations under Resource Conservation and Recovery Act (RCRA), Subtitle I, and in accordance with 40 CFR 280;
- A requirement to achieve State Program Approval (SPA) for local primacy and funding to have sole authority over USTs on Guam, pursuant to 40 CFR 281;
- Adherence to the $250 annual fee associated with permitting a UST, in accordance with 10 GCA §76117(a); and
- Administer nominal fees that will allow Guam EPA to comply with RCRA I requirements such as regular release detection equipment testing and walkthrough inspections that seek to ensure proper operation and maintenance as keys for preventing and quickly identifying regulated substance releases.

At this present time, Guam does not have a SPA UST state program. Guam EPA administers a UST Program utilizing the federal regulations, rendering the regulated community to bear cost burdens to comply with both federal mandates and local statutes. These proposed regulations will incorporate current RCRA I requirements for USTs, and provide Guam with the proper administrative mechanism to move towards a single UST SPA program that will be aligned with federal regulations.

This proposed rulemaking action requires Guam EPA to implement regulations that mirror current RCRA I mandates without discretion to consider less restrictive alternatives. Guam EPA finds that imposing additional nominal fees along with the $250 annual permit fee is crucial to bolster environmental protection by increasing emphasis on properly operating and maintaining equipment. The lack of proper operation and maintenance of UST systems has been found to be one of the main causes of the release of regulated substances to the environment, which could have significant and adverse impacts on the environment, with substantial cleanup and remediation costs.

Doc. No. 35GL-20-2341.

In the spirit of the Agency's compliance with transparency and open governance, Guam EPA hereby provides the following statements for consideration under requirements of 5 GCA §9301(f)(1-6). In addition, Guam EPA will also be including EPA's national Environmental Impact Statement that included Guam in its survey.

(1) The purpose and the need for the rule or regulation; an assessment of the risk and the cost of the imposed rules or regulation. In addition, government agencies proposing a new rule or regulation must include with the assessment, the justification for the new rule or regulation.

Guam EPA has determined that these proposed rules and regulations for USTs is unlikely to create a serious inconsistency or interference with any other actions planned or undertaken by other instrumentalities of the Government of Guam.

Considerations for this determination are as follows:

a) In 1988, USEPA promulgated a regulation for state approved UST programs (40 CFR Part 281). Since states are the primary implementers of the UST program, USEPA wanted to set up a process where state programs could operate in lieu of the federal program if certain requirements were met. 40 CFR Part 281 sets forth minimum requirements that Guam must meet to allow our regulations to operate in lieu of the federal regulations.

b) UST regulation is important in protecting our natural and fragile island environment from releases of petroleum products. Since December 1988, USEPA mandated states and US territories to develop and implement a UST program that would require facilities to upgrade their underground tanks to prevent spills, overfilling, and corrosion. This mandate led to the enactment of Guam Public Law 30-36 on June 19, 2009. Guam P.L. 30-36 provided for Guam EPA with the statutory authority to develop the island's UST Program.

c) Statutory authority to propose rules and regulations is codified in 10 GCA §76104(d). Furthermore, 10 GCA §76104(f) states the Guam EPA Administrator shall "enact and enforce other rules and regulations as necessary to establish a UST program, which meets the requirements of Section 9004 of Subtitle I of RCRA." These regulations are in accordance with 40 CFR Part 280 and 40 CFR 281.

d) These proposed UST rules and regulations will also seek to establish the following:
   a. Alignment with federal requirements that is similar to certain key provisions of the 2005 Energy Policy Act. The UST provisions of the Energy Policy Act focus on preventing releases. These provisions expand eligible uses of the Leaking Underground Storage Tank (LUST) Trust Fund and includes other provisions that govern inspections, operator training, delivery prohibition, secondary containment and financial responsibility, and cleanup of releases that contain oxygenated fuel additives;
   b. Assurance that owners and operators perform proper operation and maintenance;
   c. Address UST systems deferred in the 1988 UST regulations;
   d. An update to the requirements on current technology and practices; and
   e. Technical and editorial corrections in operation and maintenance of USTs as needed.

(2) The financial impact of the proposed rule or regulation upon those persons or corporation entities directly affected by the proposed rule or regulation, and upon the people and the economy of Guam.

There are approximately 150 facilities on island that collectively own 331 regulated USTs. Of these facilities, about 100 non-governmental entities own regulated USTs. The remaining USTs are owned by the state or federal government.

Calendar Year	*Interim Permit Fee*[1]	*Number of Tanks*	*Amount*
2019	*$250.00*	*282*	*$70,500.00*
2018	*$250.00*	*282*	*$70,500.00*
2017	*$250.00*	*282*	*$70,500.00*
2016	*$250.00*	*282*	*$70,500.00*

[1] *A $250.00 annual fee associated with permitting a UST is already codified in statute, and is assessed in accordance with 10 GCA §76117(a).*

Guam EPA reiterates that these proposed rules and regulations are administrative in nature, and will have little to no adverse financial impacts on public and private entities since all UST owners and operators have been subjected to fees that are associated with federal regulations under 40 CFR Part 280 and Guam P.L. 30-36. The promulgation of these rules and regulations is the final step for Guam to achieve SPA. With SPA, the regulated community will be subjected to fees and fines from a single local regulation, as opposed to both local and federal regulations at this current time.

Type of Application	*Permits*	*Variance*
Permit Application Fee per Tank (New Installation)	*$500.00*	*$550.00*
Permit to Operate Fee per Tank (Annual)	***$250.00***	***Interim Fee***
Permit to Transfer	*$250.00*	
Permit to Modify	*$150.00*	*$200.00*
Permit to Close	*$500.00*	*$550.00*
Permit to Install OWS	*$500.00*	*$550.00*
Permit to Close OWS	*$500.00*	
Request for Proposal (Copy)	*$25.00*	
Installer's Certification (2 years)	*$150.00*	
Operator's Certification A & B (2 years)	*$150.00*	
Operator's Re-Certification (2 years)	*$100.00*	

For Guam to achieve SPA, it is critical to ensure administrative compliance with 40 CFR Part 281. These proposed rules and regulations also seek to safeguard the island from potential environmental calamities, with economic benefits in mind, especially after considering the impacts of impending military buildup, and other future development on our island. Nominal fees outlined above will enhance the Agency's ability to ensure adherence to 40 CFR Part 280 in the best interest in protecting our island's fragile environment:

(3) Any potential increase or decrease in the price or availability of any good or service on Guam directly or indirectly attributable to the proposed rule or regulation.

The Agency does not anticipate any increase or decrease in the cost of living, nor does it anticipate any specific increase or decrease in the price or availability of any goods or services on Guam, as a result of these proposed rules and regulations.

(4) Any direct or indirect impact upon employment on Guam or any increase or decrease in the availability of a particular job or jobs in general, attributable to the proposed rule or regulation.

There are no monetary costs or benefits to the Agency or other regulatory agencies associated with the proposed rules and regulations. Guam EPA's UST program personnel receive regulatory documentation requiring review for closure reports, site assessments, permit applications, installation notification forms, release notifications, and release response reports in compliance with the October 13, 2015 federal UST requirements.

In a market setting where producer cannot reliably pass through cost, the most significant economic impacts are related to reduce facility profits. In some cases, managers can cut supply or employment costs (this could result in smaller worker paychecks). In cases where costs exceed facility profits, it is likely that in the long term a facility would exit the market. A critical factor, therefore, is an estimated of average firm or facility profit.

A more likely response by affected firms will be to adapt by increasing prices on higher margin products and services. While overall employment impacts are unclear, it is possible that there may be an increase in labor demand due to the additional requirements placed on owners and operator, and additional demand for third-party testing services.

(5) Any increase or decrease in the cost of doing business as an enterprise or industry on Guam, or any increase or decrease in doing business in general, attributable to the proposed rule or regulation.

The average cost of removal/closure and replacement of tank systems varies widely and depends on a number of factors, including the number and size of tanks in a tank system, the amount of piping, and location variables such as the depth to the water table.

According to local contractors who perform this type of work, removal of three 10,000-gallon single-walled tanks and installation of three 10,000-gallon tanks with secondary containment could cost anywhere from $350,000 to $750,000, depending on site conditions. This is equivalent to approximately to $4,000 to $8,000 per tank per year over the 30-year life of the tanks. The cost of replacing piping for an average gas station site is estimated to be $25,000 to $42,000. These estimates include the cost of a site assessment, but do not include remediation costs.
The most common tank configuration at small businesses with singled-walled USTs is one to three tanks ranging in size from 8,000 to 10,000 gallons, so these cost estimates are on the high side. About one third of the affected small businesses will incur much lower costs to replace significantly smaller tanks or only one 10,000-gallon tank.

During the course of replacing old UST systems, tank owners may also incur cost for remediation. UST system owners and operators are already required to have financial assurance (insurance, surety bond, letter of credit, etc.) covering a minimum of $500,000 in remediation costs. The Agency is aware of cases where cleanups have cost more than one million dollars, but

costs around $100,000 are typical. These cost are not associated with the proposed rules; however, the requirement to provide tanks and piping installed or prior to August 9, 2013, with secondary containment may result in UST system owners incurring remediation costs sooner than would otherwise be the case.

(6) Any adverse or beneficial economic impact which is attributable to the proposed rule or regulation.

The economic impacts associated with the costs of these proposed rules and regulations could include changes in facility operation and closure of facilities due to cost increases under the regulation.

In addition, the UST regulations may create negative and positive employment impacts, including both reductions in employment to reduce costs and increases in employment to ensure implementation of regulatory provisions. Finally, the regulation may affect public spending related to cleanup of contaminated sites.

Assessment Of The Potential Costs, Benefits, And Other Impacts Of The Final Revisions To EPA's Underground Storage Tank Regulations

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April 2015

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Acronyms And Terms

AHFDS – Airport hydrant fuel distribution system

ASTSWMO – Association of State and Territorial Solid Waste Management Officials

ATG – Automatic tank gauge / gauging – an automated process that monitors product level and provides inventory control

BLS – United States Bureau of Labor Statistics

BTEX – benzene, toluene, ethylbenzene, and xylenes

CFR – Code of Federal Regulations

CITLD – continuous in-tank leak detection

EGT – emergency generator tank

EPA – United States Environmental Protection Agency

EPAct – Energy Policy Act of 2005

FCT – field-constructed tank

Fill pipe – access by which a tank is filled

IRS – United States Internal Revenue Service

LLD – line leak detector / detection – a device that alerts the tank operator to the presence of a leak in underground piping by restricting or shutting off the flow of product through the piping, or by triggering an audible or visible alarm

LUST – leaking underground storage tank

MIDAS – modeling of infectious diseases agents study

NACS – National Association of Convenience Stores

NAICS – North American Industry Classification System

NRDA – natural resource damage assessment

OMB – United States Office of Management and Budget

OUST – Office of Underground Storage Tanks, United States Environmental Protection Agency

PAHs – polycyclic aromatic hydrocarbons

RFA – Regulatory Flexibility Act

SBA – United States Small Business Administration

SBREFA – Small Business Regulatory Enforcement Fairness Act of 1996

SIR – statistical inventory reconciliation – a leak detection method where inventory, delivery, and dispensing data is statistically analyzed

SISNOSE – significant impact on a substantial number of small entities

SPA – state program approval

SPCC – Spill Prevention, Control, and Countermeasure

Spill bucket – contained sump installed at the fill or vapor recovery connection points to contain drips and spills that can occur during delivery

Sump – subsurface area pit designed to provide access to equipment located below ground, and, when contained, to prevent liquids from releasing into the environment

SWDA – Solid Waste Disposal Act

TPH – total petroleum hydrocarbons

Turbine sump – sump designed to provide access to the turbine area above the tank

TVM – time value of money

UDC – under-dispenser containment – a device for collecting fluids spilled beneath a dispenser (pump) (e.g. dispenser pan)

UMRA – Unfunded Mandates Reform Act

UST – underground storage tank

WTP – willingness to pay

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Executive Summary

Overview

In 1984, Congress responded to the increasing threat to groundwater from leaking underground storage tank (UST) systems by adding Subtitle I to the Solid Waste Disposal Act (SWDA). SWDA required the U.S. Environmental Protection Agency (EPA) to protect the environment and human health from UST releases by developing a comprehensive regulatory program for UST systems storing petroleum or certain hazardous substances. In 1986, Congress amended Subtitle I of SWDA and created the Leaking Underground Storage Tank Trust Fund (LUST Trust Fund) to oversee and pay for cleanups at sites where the owner or operator is unknown, unwilling to pay, or unable to pay.

EPA promulgated the UST regulation in 1988 (40 CFR Part 280). This regulation set minimum standards for new tanks and required owners and operators of existing tanks to upgrade, replace, or close them. The 1988 regulation set deadlines for owners and operators to meet the new requirements. In 1988, EPA also promulgated a regulation for state program approval (40 CFR Part 281). EPA has not significantly changed these regulations since 1988. In 2005, the Energy Policy Act (EPAct) further amended Subtitle I of SWDA. EPAct requires states that receive federal Subtitle I money from EPA to meet certain requirements. EPA developed grant guidelines for states regarding: operator training; inspections; delivery prohibition; secondary containment; financial responsibility for manufacturers and installers; public record; and state compliance reports on government UST systems.

After Congress passed EPAct, EPA decided to revise the 1988 UST regulation (at 40 CFR Part 280), primarily to ensure parity in Indian country. Key EPAct provisions (such as secondary containment and operator training) apply to all states receiving federal Subtitle I money, regardless of their state program approval status. However, these key provisions do not apply in Indian country (or in states and U.S. territories that do not meet EPA's operator training or secondary containment grant guidelines). In order to establish federal UST requirements similar to the UST secondary containment and operator training requirements of EPAct, EPA needed to revise the 1988 UST regulation. Without these changes, EPAct provisions will not apply in Indian country. These revisions will also fulfill the objectives of the EPA-Tribal UST Strategy (August 2006) in which both EPA and tribes recognized the importance of ensuring parity in implementing UST program requirements in states and territories, as well as in Indian country.[1]

EPA decided now is also an appropriate time to change the 1988 UST regulation to reflect technology improvements, address outdated requirements, and place a stronger emphasis on operations and maintenance. While EPA has issued many guidance documents and used various implementation approaches and techniques over the last 25 years, we have not made significant changes to the original 1988 UST regulation. Indeed, most states have passed requirements that go far beyond the 1988 UST regulation that provide greater environmental protection. These state regulations fully implement provisions of the EPAct and improve other

[1] See http://www.epa.gov./oust/fedlaws/Tribal%20Strategy_08076r.pdf.

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important areas of the 1988 UST regulation that have become outdated. Furthermore, while information on sources and causes of releases show that releases from tanks are less common than they once were, releases from piping and spills and overfills associated with deliveries have emerged as more common problems.[2] Dispenser-related failures have also emerged as a leading source of releases. The lack of proper operation and maintenance of UST systems is a main cause of release from these areas. The final UST regulation places an emphasis on ensuring that equipment is properly maintained and working. It highlights the importance of operating and maintaining UST equipment so releases are prevented and detected early in order to avoid or minimize potential soil and groundwater contamination.

EPA worked diligently to ensure our regulatory development process was open and transparent. Over a two year period, we provided all stakeholders – state and tribal regulators; federal facilities; petroleum industry members, including representatives of owners and operators; equipment manufacturers; small businesses; local governments; and environmental and community groups – an opportunity to share their ideas and concerns through a variety of meetings, conference calls, and email exchanges. EPA thoroughly considered all input we received.

From this extensive stakeholder outreach, EPA compiled potential proposed changes to the UST regulation. EPA shared all ideas with stakeholders and gave them an opportunity to comment on each idea submitted. We then revised the list of potential changes and added items based on data, analysis, and consideration of costs and benefits. Ultimately, EPA identified the items in the proposed UST regulation as those which needed regulatory changes at the time; the proposed UST regulation was issued in November 2011 for a 90-day public comment period. EPA then extended this public comment period for an additional 60 days. EPA received submissions from over 190 commenters. Based on these comments, EPA has revised the 2011 proposed UST regulation and is now finalizing the UST regulation, as described below.

Regulatory Changes

EPA is revising the 1988 UST regulation to: establish federal requirements similar to certain key provisions of the EPAct; ensure owners and operators perform proper operation and maintenance; address UST systems deferred in the 1988 UST regulation; update the regulation to encompass current technology and practices; and make technical and editorial corrections. Specifically, EPA is requiring the following set of revisions (hereafter referred to as the Selected Option):

- Establish federal requirements for secondary containment and operator training similar to those established by EPAct for states that receive federal Subtitle I money

- Add operation and maintenance requirements

[2] U.S. Environmental Protection Agency, Office of Underground Storage Tanks, "Evaluation of Releases from New and Upgraded Underground Storage Tank Systems – Peer Review Draft," U.S. EPA, August 2004, and U.S. Environmental Protection Agency, Office of Underground Storage Tanks, "Petroleum Releases at Underground Storage Tank Facilities in Florida," Peer Review Draft, March 2005.

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- Walkthrough inspections
- Overfill prevention equipment inspections
- Spill prevention equipment tests
- Containment sump tests
- Operability tests for release detection equipment

- Address UST systems deferred in the 1988 UST regulation[3]
  - Remove release detection deferral for emergency generator tanks (EGTs)
  - Remove deferrals for airport hydrant fuel distribution systems (AHFDSs) and UST systems with field-constructed tanks (FCTs)

- Provide for other changes to improve release prevention and detection and program implementation
  - Require testing after repairs to spill and overfill prevention equipment and secondary containment
  - Eliminate flow restrictors in vent lines as an overfill prevention option for all new tanks and when overfill prevention equipment is replaced
  - Require closure of lined tanks that cannot be repaired according to a code of practice
  - Address responses to interstitial monitoring alarms
  - Retain vapor monitoring and groundwater monitoring as methods of release detection for tanks and piping (for those installed before the effective date of today's final UST regulation) only if owners and operators demonstrate proper installation and performance through a site assessment
  - Require notification of ownership change
  - Establish requirements for demonstrating compatibility with fuels containing greater than E10 and greater than B20

- Make general updates to the UST regulation
  - Reference newer technologies, including explicitly adding statistical inventory reconciliation (SIR) and continuous in-tank leak detection (CITLD) as release detection methods
  - Update codes of practice listed in the UST regulation
  - Remove old upgrade and implementation deadlines
  - Make editorial and technical corrections

- Revise the state program approval regulation (40 CFR Part 281) to be consistent with the above revisions

[3] In the final UST regulation, EPA is also addressing the 1988 UST regulatory deferrals of wastewater treatment tank systems that are not part of a wastewater treatment facility regulated under sections 402 or 307(b) of the Clean Water Act, USTs containing radioactive material, and emergency generator UST systems at nuclear power generation facilities regulated by the Nuclear Regulatory Commission. However, because these regulatory changes will not result in any incremental costs to the regulated community, this RIA does not factor these systems into any part of the analysis.

In addition to the Selected Option, EPA considered two other regulatory alternatives, described as Alternative 1 and Alternative 2. Alternative 1 is overall more stringent than the Selected Option. Alternative 2 is overall less stringent than the Selected Option. **Exhibit ES-1** summarizes the requirements under each alternative.

Exhibit ES-1

Options Considered For The Final UST regulation

Requirement Description	Options		
	Selected	**Alternative 1**	**Alternative 2**
Release Prevention			
Walkthrough inspections	30-day	30-day (as proposed in Nov 2011)*	Quarterly
Overfill prevention equipment inspections	3 year	Annual	Not required
Spill prevention equipment tests	3 year	Annual	3 year
Containment sump testing	3 year	Annual	Not required
Testing after repairs to spill and overfill prevention equipment, and secondary containment	Required	Required	Required
Eliminate flow restrictors in vent lines for all new tanks and when overfill prevention equipment is replaced	Required	Required	No change from existing regulation
Release Detection			
Operability tests for release detection equipment	Annual (plus annual check of sumps)	Annual (as proposed in Nov 2011) *	Annual (plus annual check of sumps)
Add SIR/CITLD to regulation with performance criteria	Required	Required	Required
Response to interstitial monitoring alarms	Required	Required	Required
Groundwater and vapor monitoring for release detection	Continue to allow with site assessment	5-year phase out (as proposed in Nov 2011)*	No change from existing regulation
Remove release detection deferral for emergency generator tanks	Required	Required (as proposed in Nov 2011)*	Required
Other			
Require notification of ownership change	Required	Required	Required
Closure of lined tanks that cannot be repaired according to a code of practice	Required	Required	Required
Requirements for demonstrating compatibility with fuels >E10 and >B20	Required	Required (as proposed in Nov 2011)*	No change from existing regulation
Remove deferrals for airport hydrant fuel distribution systems and UST systems with field-constructed tanks	Regulate under alternative release detection requirements	Require AHS/FCT notify implementing agency and report releases (with no other requirements)	Maintain deferral
EPAct-related Provisions			
Operator training	Required	Required	Required
Secondary containment	Required	Required	Required

* In the 2011 proposed UST regulation, these changes generally consisted of more or stricter requirements than what is in the final UST regulation. For example, the 30-day walkthrough inspections in the 2011 proposed UST regulation included monthly check of sumps. Please see the 2011 proposed UST regulation for details.

EPA designed this assessment in accordance with the Office of Management and Budget's (OMB) requirements for regulatory review under Executive Order 12866 (as amended by Executive Order 13258), which applies to any significant regulatory action. This document also fulfills these requirements:

- Regulatory Flexibility Act, as amended by Small Business Regulatory Enforcement Fairness Act of 1996
- Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*
- Executive Order 13045, *Protection of Children From Environmental Health Risks and Safety Risks*
- Unfunded Mandates Reform Act of 1995
- Executive Order 13175, *Consultation and Coordination With Indian Tribal Governments*
- Executive Order 13132, *Federalism*
- Executive Order 13211, *Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use*

Summary Of Findings

Within the constraints of data availability, EPA in this analysis identified all quantifiable and qualitative impacts for the UST regulation. EPA obtained sufficient data to identify, by state, the number of units likely to be affected by each change in the final UST regulation. In our analysis, we use these data to assess the compliance costs imposed upon units and relevant state governments. In conducting these analyses, EPA also assessed the sensitivity of outcomes to key assumptions. Separately, the analysis monetizes a number of impacts of the final UST regulation including: avoided costs generated by avoided releases and reduction in severity of releases; avoided product loss; and avoided vapor intrusion damages. This analysis quantifies, but does not value, groundwater impacts. Finally, due to data and resource limitations, EPA was unable to quantify or value in this analysis human health benefits or ecological impacts, but addresses these qualitatively.

In addition to identifying costs and positive impacts, EPA in this analysis also examined the economic and distributional impacts of the final UST regulation. The economic impact analysis includes the final UST regulation's effect on facility closures, employment, and energy output and cost. In the analysis of the final UST regulation's distributional impacts, we examined small business impacts, effects on minority and low-income populations, impacts on children's health, and potential impacts on state financial assurance funds. Finally, EPA's analysis considered the final UST regulation's impacts related to certain executive orders and statutes, including the Unfunded Mandates Reform Act, tribal governments, and federalism.

The main conclusions of this analysis are:

- **Compliance costs**[4] – EPA estimates $160 million in annual compliance costs for the final UST regulation, including costs of $130 million for conventional UST systems and EGTs; $10 million for AHFDSs; $11 million for FCTs; $5.5 million

[4] Compliance costs include direct compliance costs and state oversight costs. For this regulatory impact analysis, direct compliance costs and state oversight costs provide a reasonable proxy to assess the final UST regulation's social costs. See Chapter 3.1 for further discussion.

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for owners and operators to read the final UST regulation; and less than $1.0 million in state government administrative costs. Compliance costs range from approximately $70 million under Alternative 2 to $290 million under Alternative 1.

- **State and local government costs** – Annual state and local government costs, including compliance costs to UST systems owned or operated by state and local governments, state program approval costs, state costs for processing ownership changes, and one-time notification costs for previously deferred systems, are approximately $6.8 million. These costs range from approximately $3.6 million under Alternative 2 to $14 million under Alternative 1.[5]

- **Avoided costs** – Avoided remediation costs associated with conventional UST systems form the majority of positive impacts from the final UST regulation.[6] EPA estimates that the final UST regulation will avoid total costs of $310 million per year (range: $120 million per year to $530 million per year) under the Selected Option. This includes: $300 million (range: $110 million to $510 million) in avoided remediation costs from avoided releases and avoided groundwater contamination incidents; $4.5 million (range: $1.7 million to $7.9 million) in avoided vapor intrusion remediation costs; and $3.1 million (range: $860,000 to $6.5 million) in avoided product loss. Total avoided costs are $450 million (range: $210 million to $670 million) under Alternative 1 and $230 million (range: $45 million to $420 million) under Alternative 2.[7]

- **Benefits** – Due to data and resource constraints, EPA was unable to quantify or monetize many of the final UST regulation's benefits, including human health and ecological benefits. EPA estimates that the final UST regulation could potentially protect 50 billion to 240 billion gallons of groundwater each year.[8] Categories of nonmonetizable or nonquantifiable benefits that are qualitatively discussed in this analysis include: avoidance of human health risks, mitigation of acute exposure

[5] If all applicable state and local government costs were incurred in the first year, rather than annualized and discounted, state and local governments would incur approximately $3.8 million in costs under the Selected Option. This includes $0.2 million for states to apply for state program approval and to read the regulations, $0.2 million for states to process one-time notifications of AHFDSs and FCTs and ownership changes that occur in the first year, and $3.6 million for state and local government owners and operators of UST systems to comply with requirements that come into effect in the first year (approximately 80 percent of which would be for state and local government owners and operators to read the final UST regulation).

[6] For purposes of this analysis, "avoided remediation costs" include avoided administrative, response, remediation, and oversight costs.

[7] Note that due to modeling and data limitations, EPA was unable to estimate avoided remediation costs associated with avoided releases and avoided groundwater contamination from AHFDSs and FCTs. In addition, EPA's estimates of avoided remediation costs do not include non-use values that individuals may place on the existence of uncontaminated water supply.

[8] See chapter 4.10 for details on how this estimate was derived.

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events and large-scale releases (e.g., releases from AHFDSs and FCTs[9]), protection of ecological biota, and avoided property devaluation.

- **Compliance costs and avoided costs under the alternative baseline** – Under the alternative baseline scenario that assumes declines in the universes of both UST systems and releases over time, EPA estimates $160 million in annual compliance costs for the final UST regulation. Estimated costs do not change substantially under the alternative baseline scenario and range from $70 million under Alternative 2 to $290 million under Alternative 1. EPA also estimates total avoided costs of $210 million (range: $81 million to $360 million) under the Selected Option in the alternative baseline scenario. These avoided costs range from $160 million (range: $31 million to $290 million) under Alternative 2 to $310 million (range: $140 million to $460 million) under Alternative 1.

- **Average economic impacts** – Motor fuel retailers, which account for roughly 80 percent of UST systems, are expected to bear approximately 70 percent of the total costs under the Selected Option. To establish how the final UST regulation may impact the market, EPA examined whether the final UST regulation imposes a cost greater than the average after-tax profit margin of 1.8 percent for motor fuel retailers.[10] Using this benchmark, we estimate approximately 19 firms may exit the market if they cannot pass costs through to customers. This number represents less than 0.1 of one percent of the total universe of 148,000 facilities. In comparison, between 2005 and 2013, the number of gas station facilities decreased by an average of 2,024 stations per year.

- **State financial assurance funds** – Decreases in release frequency and severity may decrease payments required of state financial assurance funds by $160 million or more per year under the Selected Option.[11] To the extent that these funds are maintained by taxes other than those assessed on UST operators, decreases in these payments effectively represent a reallocation of costs from public entities to the private entities responsible for releases.

[9] For example, an estimated 300,000 to 500,000 gallons of fuel were released from a 2.1 million gallon underground FCT at a fuel depot in Portsmouth, VA. Free product was found within 20 feet of a nearby creek in 1987. The release was attributed to tank or piping failures. Another example is Pease Air Force Base, where jet fuel was delivered to the runway apron via an underground fueling system. Historical leakage from the system contaminated soil and groundwater, forming groundwater plumes at many sites along the system. A site release study identified 60 to 70 release points with varying degrees of severity along the refueling system line with free product found under the apron at closure.

[10] When costs exceed facility profits, it is likely that in the long-term, the facility would exit the market. After-tax profit margin based on 2009 data reported to the IRS (see chapter 5.2.3).

[11] See chapter 5.2.4 for details on how this estimate was derived.

Assessment Of Compliance Costs

For this regulatory impact analysis, direct compliance costs and state oversight costs provide a reasonable proxy to assess the final UST regulation's social costs for the following reasons:

- The regulatory requirements generally focus on additional testing and inspection of existing equipment and do not reflect large-scale investments in equipment or significant changes to operations at the facility level. In addition, the facilities affected by the final UST regulation are distributed with relative geographic uniformity for consumers and producers.

- Given the small per-facility costs (approximately $715 per year for the average facility), closures or changes in market structure represent an unlikely response to the final UST regulation. According to the 2007 Economic Census, average revenues in the retail motor fuel sales sector were approximately $3.8 million; the corresponding cost-to-sales ratio for the average facility is less than one-tenth of one percent. Therefore, it is unlikely that significant changes to production or consumer behavior will affect social costs.

- The short- and long-run impacts of the final UST regulation are not likely to differ significantly. Testing and inspection requirements may offer some opportunities for owners and operators to reduce costs by learning over time, but they are not likely to reduce costs enough to facilitate large-scale equipment upgrades.

EPA's calculation of total incremental compliance costs for UST facilities reflects two key components: identifying specific measures necessary for compliance at individual facilities and calculating costs associated with each of these measures. To estimate these costs, EPA developed a compliance cost model that identifies incremental equipment and labor requirements for an individual system. Based on the baseline equipment use profile, existing state regulations, and anticipated responses to the final UST regulation, the model then generates system-specific estimates of compliance costs. Compliance costs include labor and capital costs associated with new equipment and installation, inspection, testing, and recordkeeping. The model also includes other compliance costs, such as those associated with more frequent detection of equipment failure and repair of equipment. Some component costs are specific to individual UST system configurations – for example, AHFDSs or FCTs – while others are consistent across all system types. **Exhibit ES-2** summarizes the findings of our analysis of compliance costs.

Exhibit ES-2

Total Annual Compliance Costs[a,b]

Category	Selected Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Conventional UST systems [c]	$130	$280	$63
Emergency Generator Tanks (EGTs)	$2.0	$2.3	$2.0
Airport Hydrant Fuels Distribution Systems (AHFDSs)	$10	$0.017	$0.0
UST systems with Field-Constructed Tanks (FCTs)	$11	$0.066	$0.0
Cost to Owners/Operators to Read Regulation	$5.5	$5.5	$5.5
State Government Administrative Costs [d]	$0.12	$0.12	$0.12
Total Annual Compliance Costs[e]	**$160**	**$290**	**$70**

[a] Cost estimates were derived using a seven percent discount rate.
[b] Compliance costs include direct compliance costs and state oversight costs. For this regulatory impact analysis, direct compliance costs and state oversight costs provide a reasonable proxy to assess the final UST regulation's social costs. See Chapter 3.1 for further discussion.
[c] Conventional UST systems include all systems that are not AHFDSs, FCTs, or EGTs.
[d] The costs for UST systems directly owned or operated by local, state, and federal government entities are included in the estimates of compliance costs within the other categories (see Exhibit ES-6). Costs shown here reflect the administrative costs for state governments to read the final UST regulation, apply for state program approval, process notifications of ownership changes, and process one-time notifications of EGT, AHFDS, and FCT existence.
[e] Totals may not add up due to rounding.

Assessment Of Cost Savings And Benefits

Avoided remediation costs among conventional UST systems and EGTs provide the basis for a substantial portion of the beneficial impacts associated with the final UST regulation. Avoided remediation costs of the final UST regulation represent cost savings that accrue to owners, operators, and public entities charged with remediating releases at regulated facilities. EPA obtained remediation costs from a survey of state UST cleanup programs and estimates of the distribution of releases by UST system area from internal research.[12] EPA identified four UST technical experts who provided professional judgment regarding the final UST regulation's effects on reduction in release frequency (number of releases per year) and release severity (as measured by groundwater incidents averted). This body of knowledge allowed EPA to estimate total avoided costs, as well as avoided costs per requirement. EPA also estimated avoided costs associated with vapor intrusion and product loss, though these avoided costs are not allocated across requirements.[13] Finally, the analysis provides qualitative discussion of avoided acute events and exposure (including large-scale releases, such as those from AHFDSs and FCTs), avoided human health risks, ecological benefits, and avoided property devaluation. These findings are summarized in **Exhibit ES-3** below.

[12] U.S. Environmental Protection Agency Office of Underground Storage Tanks, "Evaluation of Releases from New and Upgraded Underground Storage Tank Systems – Peer Review Draft," U. S. EPA, August 2004.

[13] These costs were not allocated because we did not ask the experts to estimate quantitatively how different regulatory requirements would specifically affect vapor intrusion or product loss. Vapor intrusion frequency and cost data rely on general information we received from several states and are typically recorded as additional remedial activities at some groundwater sites. The likelihood of vapor intrusion, however, is driven by proximity of receptors and by geology and is not predictably related to the size or age of a plume. Product loss estimates rely on data from Florida and other sources for typical release sizes and are mapped to the estimates of avoided releases.

Exhibit ES-3

Summary Of Positive Impacts

SELECTED OPTION						
Type Of Impact	**Expert 1**	**Expert 2**	**Expert 3**	**Expert 4**	**Average**	**Range**
Monetized Avoided Costs Associated With Conventional USTs And EGTs ($ millions, present value 2012$)[a]						
Releases and groundwater incidents[b]	$330	$110	$260	$510	$300	$110 - $510
Vapor intrusion	$4.3	$1.7	$4.1	$7.9	$4.5	$1.7 - $7.9
Product loss	$2.3	$0.86	$2.9	$6.5	$3.1	$0.86 - $6.5
Total[c]	**$330**	**$120**	**$270**	**$530**	**$310**	**$120 - $530**
Non-Monetized Impacts[d]						
Groundwater protected (billion gallons)	130	50	120	240	130	50 - 240
Acute events and large-scale releases (e.g., releases from AHFDSs and FCTs)[e]	n/e	n/e	n/e	n/e	n/e	n/e
Ecological benefits[e]	n/e	n/e	n/e	n/e	n/e	n/e
Human health risks[e]	n/e	n/e	n/e	n/e	n/e	n/e
ALTERNATIVE 1						
Type Of Impact	**Expert 1**	**Expert 2**	**Expert 3**	**Expert 4**	**Average**	**Range**
Monetized Avoided Costs Associated With Conventional USTs And EGTs ($ millions, present value 2012$)[a]						
Releases and groundwater incidents[b]	$490	$200	$410	$650	$440	$200 - $650
Vapor intrusion - low assumptions	$5.9	$2.5	$5.9	$9.1	$5.9	$2.5 - $9.1
Product loss	$2.6	$0.78	$4.1	$7.6	$3.8	$0.78 - $7.6
Total[c]	**$500**	**$210**	**$420**	**$670**	**$450**	**$210 - $670**
Non-Monetized Impacts[d]						
Groundwater protected (billion gallons)	180	74	180	270	170	74 - 270
Acute events and large-scale releases (e.g., releases from AHFDSs and FCTs)[e]	n/e	n/e	n/e	n/e	n/e	n/e
Ecological benefits[e]	n/e	n/e	n/e	n/e	n/e	n/e
Human health risks[e]	n/e	n/e	n/e	n/e	n/e	n/e
ALTERNATIVE 2						
Type Of Impact	**Expert 1**	**Expert 2**	**Expert 3**	**Expert 4**	**Average**	**Range**
Monetized Avoided Costs Associated With Conventional USTs And EGTs ($ millions, present value 2012$)[a]						
Releases and groundwater incidents[b]	$210	$44	$220	$410	$220	$44 - $410
Vapor intrusion - low assumptions	$2.6	$0.56	$3.2	$6.0	$3.1	$0.56 - $6.0
Product loss	$1.5	$0.36	$2.5	$5.2	$2.4	$0.36 - $5.2
Total[c]	**$220**	**$45**	**$220**	**$420**	**$230**	**$45 - $420**
Non-Monetized Impacts[d]						
Groundwater protected (billion gallons)	78	17	96	180	92	17 - 180
Acute events and large-scale releases (e.g., releases from AHFDSs and FCTs)[e]	n/e	n/e	n/e	n/e	n/e	n/e
Ecological benefits[e]	n/e	n/e	n/e	n/e	n/e	n/e
Human health risks[e]	n/e	n/e	n/e	n/e	n/e	n/e

[a] Avoided remediation costs from releases and groundwater incidents are the costs related to site remediation. Avoided vapor intrusion costs include additional avoided costs associated with the remediation of vapor intrusion cases; the RIA does not address human health risk associated with vapor intrusion. Avoided product loss costs are also separate and additive.

Exhibit ES-3

Summary Of Positive Impacts

[b] Expert 2 provided responses that generate benefits that are relatively low compared to estimated costs, unlike the other three experts. Conversations with this expert indicated that this discrepancy may be due to his assumptions about partial noncompliance. See Section 4.5.3 and Appendix H for additional discussion.
[c] Totals may not add up due to rounding. Cost estimates were derived using a seven percent discount rate.
[d] Due to data and resource constraints, EPA was unable to monetize some of the positive impacts of the final UST regulation. Chapter 4 provides a qualitative discussion of these benefits.
[e] Benefits not estimated are denoted by n/e.

Comparison Of Compliance Costs And Positive Impacts

Exhibit ES-4 summarizes the compliance costs and positive impacts of the final UST regulation. The majority of measurable positive effects occur as avoided remediation costs. As discussed in Chapter 4, avoided costs provide a reasonable measure of the positive effects of the final UST regulation.

Exhibit ES-4

Comparison Of Annual Compliance Costs And Cost Savings[f,d]

	Selected Option (2012$ millions)	Alternative 1 (2012$ millions)	Alternative 2 (2012$ millions)
Annual Avoided Costs[a]			
Releases and groundwater incidents: average value *(range of all values in italics)*	$300 *($110-$510)*	$440 *($200-$650)*	$220 *($44-$410)*
Vapor intrusion: average value *(range of all values in italics)*	$4.5 *($1.7-$7.9)*	$5.9 *($2.5-$9.1)*	$3.1 *($0.56-$6.0)*
Product loss *(range of all values in italics)*	$3.1 *($0.86-$6.5)*	$3.8 *($0.78-$7.6)*	$2.4 *($0.36-$5.2)*
Annual Compliance Costs			
Conventional UST systems[b]	$130	$280	$63
Emergency generator tanks (EGTs)	$2.0	$2.3	$2.0
Airport hydrant fuel distribution systems (AHFDSs)	$10	< $0.1	N/A
UST systems with field-constructed tanks (FCTs)	$11	< $0.1	N/A
Cost to owners/operators to read UST regulation	$5.5	$5.5	$5.5
State government administrative costs[c]	$0.12	$0.12	$0.12
Total Annual Avoided Costs *(range of all values in italics)*	**$310** *($120-$530)*	**$450** *($210-$670)*	**$230** *($45-$420)*
Total Annual Compliance Costs[d]	**$160**	**$290**	**$70**
Net Cost (Savings) To Society[d,g] **[Total Compliance Costs *Less* Total Avoided Costs]** *(range of all values in italics)*	**($160)** *$39 - ($370)*	**($160)** *$81 - ($380)*	**($160)** *$25 - ($350)*
Non-Monetized Benefits[e]			
Groundwater protected (billion gallons)	130 (50-240)	170 (74-270)	92 (17-180)
Acute events and large-scale releases (e.g., releases from AHFDSs and FCTs)	Not estimated	Not estimated	Not estimated
Ecological benefits	Not estimated	Not estimated	Not estimated
Human health risks	Not estimated	Not estimated	Not estimated

[a] Avoided costs are estimated for conventional UST systems and emergency generator tanks only. Avoided remediation costs from releases and groundwater incidents are the costs related to site remediation. Avoided vapor intrusion costs include additional avoided costs associated with the remediation of vapor intrusion cases; the RIA does not address human health risk associated with vapor intrusion. Avoided product loss costs are also separate and additive.
[b] Conventional UST systems include all systems that are not AHFDSs, FCTs, or EGTs.
[c] The costs for UST systems directly owned or operated by local, state, and federal government entities are included in the estimates of compliance costs within the other categories. Costs shown here reflect the administrative costs for state

Exhibit ES-4

Comparison Of Annual Compliance Costs And Cost Savings[f,d]

governments to read the final UST regulation, apply for state program approval, process notifications of ownership changes, and process one-time notifications of existence for AHFDS and UST systems with FCTs.

[d] Compliance costs include direct compliance costs and state oversight costs. For this regulatory impact analysis, direct compliance costs and state oversight costs provide a reasonable proxy to assess the final UST regulation's social costs. See Chapter 3.1 for further discussion.

[e] Due to data and resource constraints, EPA is unable to monetize some of the positive impacts of the final UST regulation. Chapter 4 of this document provides a qualitative discussion of these benefits.

[f] Totals may not add up due to rounding. Cost estimates were derived using a seven percent discount rate.

[g] The results show that all but one of the four estimates of cost savings for conventional systems exceed total regulatory costs (including FCT and AHFDS systems). As explained in Chapter 4 and Appendix H, one of the four experts provided estimates of avoided releases and averted groundwater incidents that do not result in net cost savings to society from the Selected Option. However, this expert also assumed a high level of noncompliance with the final UST regulation that is not consistent with the assumption of 100 percent compliance in the cost estimates. As a result, this low-end estimate of potential cost savings likely understates the cost savings that would be associated with a consistent, 100 percent compliance scenario. See Chapter 4 and Appendix H for detailed discussion of how these assumptions affect net benefits of the final UST regulation as calculated using responses from Expert 2.

Exhibit ES-5 summarizes the compliance costs and positive impacts of the final UST regulation under an alternative baseline where universes of UST systems and releases are assumed to decrease at a declining rate over time. Compliance costs do not change substantially under the alternative baseline, while estimates of avoided costs decrease by approximately 31 percent, as the universe of releases contracts substantially under the alternative baseline. In this scenario, annual net savings to society for the Selected Option average $60 million per year.

Exhibit ES-5

Comparison Of Annual Compliance Costs And Cost Savings Under Alternative Baseline[c,e]

	Selected Option (2012$ millions)	**Alternative 1 (2012$ millions)**	**Alternative 2 (2012$ millions)**
Total Annual Avoided Costs[a,b] *(range of all values in italics)*	$220 *($81-$360)*	$310 *($140-$460)*	$160 *($31-$290)*
Total Annual Compliance Costs[c]	$160	$290	$70
Net Cost (Savings) To Society[c,d] **[Total Compliance Costs *Less* Total Avoided Costs]** *(range of all values in italics)*	**($60)** *$74 - ($210)*	**($25)** *$140 - ($170)*	**($87)** *$39 - ($220)*

[a] Avoided costs are estimated for conventional UST systems and emergency generator tanks only.

[b] Due to data and resource constraints, EPA is unable to monetize some of the positive impacts of the final UST regulation. Chapter 4 of this document provides a qualitative discussion of these benefits.

[c] Compliance costs include direct compliance costs and state oversight costs. For this regulatory impact analysis, direct compliance costs and state oversight costs provide a reasonable proxy to assess the final UST regulation's social costs. See Chapter 3.1 for further discussion.

[d] The results show that all but one of the four estimates of cost savings for conventional systems exceeded total regulatory costs (including FCT and AHFDS systems). As explained in Chapter 4 and Appendix H, one of the four experts provided estimates of avoided releases and averted groundwater incidents that do not result in net cost savings to society from the Selected Option. However, this expert also assumed a high level of noncompliance with the final UST regulation that is not consistent with the assumption of 100 percent compliance in the cost estimates. As a result, this low-end estimate of potential cost savings likely understates the cost savings that would be associated with a consistent, 100 percent compliance scenario. See Chapter 4 and Appendix H for detailed discussion of how these assumptions affect net benefits of the final UST regulation as calculated using responses from Expert 2.

[e] Totals may not add up due to rounding. Cost estimates were derived using a seven percent discount rate.

Economic Impacts

EPA's assessment of the economic impacts associated with this final UST regulation focused on the retail motor fuels sector, which accounts for approximately 80 percent of UST owners or operators. In this analysis, EPA describes supply and demand dynamics within the retail motor fuels market and the likely economic responses to increased compliance costs. Our screening assessment finds that average estimated facility-level costs of $715 may result in the market exit of approximately 19 firms, if these firms cannot pass any regulatory costs through to customers. This represents less than 0.1 of one percent of existing retail motor fuel facilities, and an even smaller fraction of all facilities affected by the final UST regulation.[14] In comparison, approximately 2,024 facilities per year closed over the period between 2005 and 2013.

To address uncertainty related to the distribution of costs among UST facilities, we also constructed a worst-case sensitivity analysis, which identified the maximum number of facilities that could face significant economic impacts due to regulatory costs. We defined the worst case as the scenario where the highest possible cost occurred for the smallest facilities. We found that up to 4,500 facilities may exit the market in this unlikely worst-case scenario, representing 3 percent of existing retail motor fuel facilities and a similar rate to annual historical market exits. The limited magnitude of impacts even in the worst-case scenario suggests that the final UST regulation will not affect existing consolidation trends in the retail motor fuels industry, retail motor fuel prices, or consumption.

In addition, EPA's analysis suggests that the final UST regulation could result in a reallocation of costs from the public to private parties responsible for releases.[15] Preventing releases under this UST regulation would increase compliance costs to facility owners, but the avoided releases would in many cases reduce remediation demand for taxpayer-funded state funds. This is likely to improve behavioral incentives, as the parties most likely to cause releases will also be responsible for preventing them. As discussed in Chapter 5, this reallocation could result in savings to state financial assurance funds in excess of $160 million per year.

Other Regulatory And Distributional Issues

As part of our analysis, we assessed the final UST regulation's potential impacts related to:

- **Energy impacts** – The final UST regulation will not have significant adverse effects on energy supply, distribution, or use, including impacts on price and foreign supplies. It is, therefore, not a significant energy action under Executive Order 13211, *Actions Concerning Regulations That Affect Energy Supply, Distribution, or Use* (May 18, 2001).

[14] Census data on number of facilities per firm indicate that virtually all firms earning less than $250,000 per year in 2007 had only one facility. We therefore use "firm" and "facility" interchangeably in this context. See chapter 5.2.3 for details.

[15] For additional information regarding this issue, see Chapter 5.

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- **Regulatory flexibility** – EPA's analysis determined that approximately 634 small entities (less than 1 percent of the universe of affected small entities) may experience economic impacts that exceed 1 percent of revenues, but only 19 of these entities would exit the market as a result of incurring costs greater than or equal to total profits. For various reasons, and especially due to different system configurations for smaller facilities, the actual number of affected entities is likely to be even fewer than the number estimated by the analysis. In comparison, this number is smaller than the recent industry consolidation rate of approximately 2,024 facilities per year in the retail motor fuels sector. The final UST regulation is unlikely to have a significant economic impact on a substantial number of small businesses or small governments.

- **Small government impacts** – The final UST regulation is not expected to have significant small government impacts. EPA's assessment of costs to state and local governments indicated that no government-owned UST facilities will experience costs that exceed 1 percent of revenues.

- **Impacts on minority and low-income populations** – Because the final UST regulation would increase regulatory stringency and reduce the number and size of releases, the final UST regulation is not expected to have any disproportionately high and adverse human health or environmental effects on minority or low-income populations, or on any community.

- **Children's health protection** – Because the final UST regulation is expected to reduce exposure to contaminated groundwater by reducing the number and size of releases, EPA does not expect the final UST regulation to have a disproportionate environmental health risk effect on children, as defined in Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (62 FR 19885, April 23, 1997). Moreover, while the risk assessment did not specifically measure exposure to children, it is unclear that children are disproportionately affected in the baseline. For example, adults could be the more sensitive receptor for cancer effects of contaminated groundwater due to the longer potential exposure from showering (inhalation of vapors) compared to children (ingestion of water while bathing), particularly those under age 5 who are assumed to take more baths and fewer showers.

- **Regulatory planning and review** – Pursuant to the terms of Executive Order 12866 (58 FR 51735, October 4, 1993), EPA determined the final UST regulation is an economically significant regulatory action because it may have an annual effect on the economy of $100 million or more, as defined under part 3(f)(1) of the Order. Findings of the regulatory cost analysis in Chapter 3 indicate the final UST regulation is projected to result in aggregate annual compliance costs of approximately $160 million under the Selected Option, $290 million under Alternative 1, and $70 million under Alternative 2.

- **Unfunded mandates analysis** – The final UST regulation is subject to the requirements of sections 202 and 205 of the Unfunded Mandates Reform Act (UMRA), because it contains federal mandates that may result in the expenditure by state, local, and tribal governments or by the private sector of $100 million or more in any one year. **Exhibit ES-6** provides references for EPA's analyses responding to UMRA requirements under which this final UST regulation is subject.

Exhibit ES-6

Location Of Analyses Responding To UMRA Requirements

Requirement	Location In This Document
Identification of provision of federal law under which rule is being promulgated	Chapter 1
Assessment of costs and benefits to state, local, and tribal governments and the private sector	Chapters 3 and 4
Assessment of the effect on health, safety, and the natural environment	Chapter 4
Assessment of the extent to which such costs may be paid with federal financial assistance	Chapter 3; no Federal assistance is anticipated
Assessment of the extent to which there are available federal resources to carry out this mandate	Chapter 3; no Federal resources are anticipated
Estimates of future compliance costs	Chapter 3
Estimates of disproportionate budgetary effects on any type of government or private sector segment	Chapter 5
Estimates of the effect on the national economy	Chapters 3 and 5

- **Federalism** – Executive Order 13132, *Federalism* (64 FR 43255, August 10, 1999), defines policies that have federalism implications to include regulations with substantial direct effects on states, on the relationship between the federal government and states, or on the distribution of power and responsibilities among the various levels of government. EPA typically considers a policy to have federalism implications if it results in aggregate expenditures by state or local governments of $25 million or more in any one year. As **Exhibit ES-7** below indicates, EPA does not expect any of the regulatory options to have significant federalism implications.

Exhibit ES-7

Summary Of Annual State And Local Government Costs[b]

Element	Selected Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Local Compliance Costs[a]	$5.4	$11.0	$2.8
State Compliance Costs[a]	$1.3	$2.9	$0.70
State Government Administrative Costs	$0.12	$0.12	$0.12
Total State And Local Governments Costs[c]	**$6.8**	**$14.0**	**$3.6**

[a] State and local government compliance costs are included in the total compliance costs presented in Exhibit ES-2.
[b] Cost estimates were derived using a seven percent discount rate.
[c] Total may not sum due to rounding.

- **Tribal governments analysis** – Executive Order 13175, *Consultation and Coordination With Indian Tribal Governments* (65 FR 67249, November 9, 2000), requires EPA to develop an accountable process to ensure meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications. EPA consulted with tribal officials early in the process of developing this UST regulation to welcome meaningful and timely input into its development. EPA began its consultation with tribes on possible changes to the UST regulation shortly after the passage of the Energy Policy Act of 2005. In addition to our early consultation with tribes, EPA again reached out to the tribes as we started the official regulatory process and throughout the development of the UST regulation. EPA sent letters to leaders of over 500 tribes, as well as to tribal regulatory staff, inviting their participation in developing the regulation. EPA heard from both tribal officials who work as regulators as well as representatives of owners and operators of UST systems in Indian country. The tribal regulators raised concerns about ensuring parity of environmental protection between states and Indian country. The changes to the UST regulation are needed to ensure parity between UST systems in states and in Indian country. This final UST regulation will ensure installed equipment is working properly and protects the environment from potential releases.

  As part of this analysis, EPA concluded that the final UST regulation will have tribal implications to the extent that tribally-owned entities with UST systems on Indian country would be affected. However, it will neither impose substantial direct compliance costs on tribal governments, nor preempt tribal law. Total costs to owners and operators of tribally-owned UST systems are approximately $0.67 million.

- **Joint impacts of regulations** – Facilities in the UST system universe are affected by a number of existing regulations, including state regulations and Spill Prevention, Control, and Countermeasure (SPCC) regulations. At the time of the 1988 UST regulation, completely buried tanks greater than 42,000 gallons and located near navigable waters of the United States or adjoining shorelines were subject to both the UST regulation and SPCC regulation. Currently, a subset of UST systems in the universe is regulated by SPCC; these include EGTs, AHFDSs, and FCTs. To the extent that the requirements imposed on these UST systems via the final UST regulation are more or less stringent than the SPCC regulation currently governing them, the final UST regulation may cause an increase or a reduction in overall inspection and monitoring requirements and costs for these UST systems. To account for this, EPA generated baseline assumptions for these systems using information from the Department of Defense, the owner of the majority of all AHFDSs and FCTs. EGTs are assumed to incur all incremental costs beyond state regulatory baseline costs; to the extent that these systems are regulated under SPCC, this may overstate costs. EPA does not believe that the final UST regulation creates a serious inconsistency or interferes with any other actions planned or undertaken by other agencies.

Doc. No. 35GL-20-2341.

Chapter 1. Introduction

This document presents an analysis by the U.S. Environmental Protection Agency (EPA) Office of Underground Storage Tanks (OUST) of the costs, benefits, and economic impacts of the final targeted changes to the underground storage tank (UST) regulation. The final UST regulation serves the purpose of strengthening the existing UST regulation by increasing the emphasis on proper operation and maintenance of UST systems and improved maintenance of release detection equipment. The changes anticipated under this final UST regulation also acknowledge improvements in technology over the last 25 years, including the ability to perform release detection for many tank systems that were previously deferred.

1.1 Background

In 1984, Congress responded to the increasing threat to groundwater from leaking UST systems by adding Subtitle I to the Solid Waste Disposal Act (SWDA). SWDA required EPA to protect the environment and human health from UST releases by developing a comprehensive regulatory program for UST systems storing petroleum or certain hazardous substances. In 1986, Congress amended Subtitle I of SWDA and created the Leaking Underground Storage Tank Trust Fund (LUST Trust Fund) to oversee and pay for cleanups at sites where the owner or operator is unknown, unwilling to pay, or unable to pay.

EPA promulgated the UST regulation in 1988 (40 CFR Part 280). This regulation set minimum standards for new tanks and required owners and operators of existing tanks to upgrade, replace, or close their existing tanks. The 1988 regulation set deadlines for owners and operators to meet the new requirements. By 1998, owners and operators had to meet new UST system requirements, upgrade their existing UST systems, or close them. Owners and operators who chose to upgrade had to ensure that every UST system had spill prevention equipment (e.g., spill buckets), overfill prevention equipment, and was protected from corrosion. In addition, owners and operators were required to monitor their UST systems for releases using release detection (phased in during the 1990s depending on the year of installation of each UST system). Finally, owners and operators were required to have financial responsibility (phased in through 1998) to ensure that they are financially able to pay for any releases that occur. No significant changes have been made to these requirements since 1988.

In 1988, EPA also promulgated a regulation for state program approval (40 CFR Part 281). Since states are the primary implementers of the UST program, EPA wanted to set up a process where state programs could operate in lieu of the federal program if certain requirements were met. This regulation describes the minimum requirements states must meet to have their regulations operate in lieu of the federal regulation.

In 2005, the Energy Policy Act (EPAct) further amended Subtitle I of SWDA. The EPAct requires states that receive federal Subtitle I money from EPA to meet certain requirements. EPA developed grant guidelines for states regarding: operator training; inspections; delivery prohibition; secondary containment; financial responsibility for manufacturers and installers; public record; and state compliance reports on government UST systems.

1.2 Need for Regulatory Action

After Congress passed EPAct, EPA decided to revise the 1988 UST regulation (at 40 CFR Part 280), primarily to ensure parity in Indian country. Key EPAct provisions (such as secondary containment and operator training) apply to all states receiving federal Subtitle I money, regardless of their state program approval status; but these key provisions do not apply in Indian country (or in states and U.S. territories that do not meet EPA's operator training or secondary containment grant guidelines). In order to establish federal UST requirements similar to the UST secondary containment and operator training requirements of EPAct, EPA decided to revise the 1988 UST regulation. Without these changes, EPAct provisions will not apply in Indian country. These revisions will also fulfill the objectives of the EPA-Tribal UST Strategy (August 2006) in which both EPA and tribes recognized the importance of ensuring parity in implementing UST program requirements in states and territories, as well as in Indian country.[16]

EPA decided that this is also an appropriate time to change the 1988 UST regulation to reflect technology improvements, address outdated requirements, and place a stronger emphasis on operations and maintenance. While EPA has issued many guidance documents and used various implementation approaches and techniques over the last 25 years, we have not made significant changes to the original 1988 UST regulation. Indeed, most states have passed requirements that go far beyond the 1988 UST regulation that provide greater environmental protection. These state regulations fully implement provisions of the EPAct and improve other important areas of the 1988 UST regulation that have become outdated.

Furthermore, while information on sources and causes of releases show that releases from tanks are less common than they once were, releases from piping and spills and overfills associated with deliveries have emerged as more common problems.[17] In addition, failures of equipment and operations at the dispenser have emerged as one of the leading sources of releases. The lack of proper operation and maintenance of UST systems is a main cause of release from these areas. Data also indicate that release detection equipment only detects about one quarter of all releases.[18] While some of those releases occur in areas not required to have release detection equipment, other releases that should be detected are not because of problems with the operation and maintenance of the release detection equipment.

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[16] See: U.S. Environmental Protection Agency, Office of Underground Storage Tanks. Strategy for an EPA/Tribal Partnership to Implement Section 1529 of the Energy Policy Act of 2005. August 2006. Accessed at: http://www.epa.gov./oust/fedlaws/Tribal%20Strategy_08076r.pdf.

[17] U.S. Environmental Protection Agency, Office of Underground Storage Tanks. "Evaluation of Releases from New and Upgraded Underground Storage Tank Systems (peer review draft)." August 2004; and U.S. Environmental Protection Agency, Office of Underground Storage Tanks. "Petroleum Releases at Underground Storage Tank Facilities in Florida." March 2005.

[18] About 50 percent of all releases go undetected because they occur in areas where release detection is not required (and therefore is not designed to detect a release). Approximately half of the remaining 50% that should be detected still go undetected partly because of issues with operation and maintenance of the release detection equipment. (U.S. Environmental Protection Agency, Office of Underground Storage Tanks. "Petroleum Releases at Underground Storage Tank Facilities in Florida." March 2005. p. 26.)

Since the beginning of the UST program, preventing petroleum releases into the environment has been one of the program's primary goals. EPA and our partners have made major progress in reducing the number of new releases, but over 5,000 releases are still discovered each year. Because existing publicly-funded mechanisms and institutions frequently cover at least part of the costs of release remediation, many owners and operators of UST systems do not bear the full costs of their actions. Petroleum releases thus represent a negative externality caused by UST system operators, as the individuals and firms that cause releases do not bear their full costs. This represents a failure of the market to fully internalize the cost to society of operating an UST system: private costs do not equal social costs.[19] A combination of revised technical standards and inspection and testing requirements represents the most appropriate method for reducing the number of future releases and mitigating the impact of existing negative externalities.

In revising the 1988 regulation, EPA wanted to make sure the regulation development process was open and transparent and that all stakeholders had an opportunity to share their ideas as well as their concerns. From the beginning of this process, EPA recognized the concerns about costs on owners and operators and was committed to limiting the requirements for retrofits. We reached out to all stakeholders, including state and tribal regulators, federal facilities, members of the petroleum industry including representatives of owners and operators as well as equipment manufacturers, small businesses, local governments, and environmental and community groups. Over a two-year period, we held conference calls, solicited comments and provided multiple opportunities for stakeholders to share their ideas as well as for us to keep them informed of where we were in the process.

From this extensive stakeholder outreach, EPA compiled potential proposed changes to the UST regulation. EPA shared all ideas with stakeholders and gave them an opportunity to comment on each idea. We then revised the list of potential changes and added items based on data, analysis, and consideration of costs and benefits. Ultimately, EPA identified the items in the proposed UST regulation as those which needed regulatory changes at the time; the proposed UST regulation was issued in November 2011 for a 90-day public comment period. EPA then extended this public comment period for an additional 60 days. EPA received submissions from over 190 commenters. Based on these comments, EPA revised the 2011 proposed UST regulation and is now finalizing the UST regulation, as described below.

1.3 Summary of the Final UST regulation

EPA is revising the UST regulation to: establish federal requirements that are similar to certain key provisions of the Energy Policy Act; ensure owners and operators perform proper operation and maintenance; address UST systems deferred in the 1988 UST regulation; update the regulation to current technology and practices; and make technical and editorial corrections.

[19] We refer here to mechanisms other than those whose specific purpose is to fund remediation for new releases from UST systems. For example, if owners and operators in a particular state are compelled to participate in a fund operated by a public (or private) entity, and the contributions made directly by the owners and operators are equal to all the remediation costs, such a policy overcomes the market failure. However, when taxpayers are required to cover any portion of remediation costs through general funds or revenues obtained for other purposes, the negative externality will not be rectified.

Specifically, EPA is requiring the following set of revisions (hereafter referred to as the Selected Option):

- Establish federal requirements for secondary containment and operator training similar to those established by EPAct for states that receive federal Subtitle I money

- Add operation and maintenance requirements
  - Walkthrough inspections
  - Overfill prevention equipment inspections
  - Spill prevention equipment tests
  - Containment sump tests
  - Operability tests for release detection equipment

- Address UST systems deferred in the 1988 UST regulation [20]
  - Remove release detection deferral for emergency generator tanks
  - Remove deferrals for airport hydrant fuel distribution systems (AHFDSs) and UST systems with field-constructed tanks (FCTs)

- Provide for other changes to improve release prevention and detection and program implementation
  - Require testing after repairs to spill and overfill prevention equipment, and secondary containment
  - Eliminate flow restrictors in vent lines as an overfill prevention option for all new tanks and when overfill prevention equipment is replaced
  - Require closure of lined tanks that cannot be repaired according to a code of practice
  - Address responses to interstitial monitoring alarms
  - Retain vapor monitoring and groundwater monitoring as methods of release detection for tanks and piping (for those installed before the effective date of today's final UST regulation) only if owners and operators demonstrate proper installation and performance through a site assessment
  - Require notification of ownership change
  - Establish requirements for demonstrating compatibility with fuels containing greater than E10 and greater than B20

- Make general updates to the UST regulation

[20] In the final UST regulation, EPA is also addressing the 1988 regulatory deferrals of wastewater treatment tank systems that are not part of a wastewater treatment facility regulated under sections 402 or 307(b) of the Clean Water Act, USTs containing radioactive material, and emergency generator UST systems at nuclear power generation facilities regulated by the Nuclear Regulatory Commission. However, because these regulatory changes will not result in any incremental costs to the regulated community, this RIA does not factor these systems into any part of the analysis.

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- Reference newer technologies, including explicitly adding statistical inventory reconciliation (SIR) and continuous in-tank leak detection (CITLD) as release detection methods
- Update codes of practice listed in the UST regulation
- Remove old upgrade and implementation deadlines
- Make editorial and technical corrections

- Revise the state program approval regulation (40 CFR Part 281) to be consistent with the above revisions

1.4 Alternative Regulatory Options

In addition to assessing the impacts of the Selected Option, this document assesses the costs, benefits, and economic impacts of two regulatory alternatives, as outlined in **Exhibit 1-1.** Please refer to the preamble for a discussion of the rationale behind the development of these two alternatives.

While some of the regulatory requirements remain constant across all alternatives, EPA evaluated variations in the subset of proposed requirements that change across alternatives. The differences between the three regulatory options considered in this regulatory impact analysis are described in **Exhibit 1-1**.

Note that each option (i.e., Selected, Alternative 1, and Alternative 2) considered by EPA contains a set of new requirements that does not vary across these options. EPA believes the requirements in this set represent, at a minimum, changes that need to be included in the final UST regulation. Specifically, these requirements are:

- Testing after repairs to spill and overfill prevention equipment, and interstitial spaces
- Adding SIR/CITLD to regulation with performance criteria
- Reporting and testing for interstitial alarms
- Removing the deferral for release detection for emergency generator tanks
- Notification of ownership change
- Closure of lined tanks that cannot be repaired according to a code of practice; and
- Requiring operator training and secondary containment[21]

[21] As explained in the introduction, operator training and secondary containment are being finalized in order to ensure parity in program implementation among states and in Indian country.

Exhibit 1-1

Options Considered For The Final UST regulation

Requirement Description	Options		
	Selected	**Alternative 1**	**Alternative 2**
Release Prevention			
Walkthrough inspections	30-day	30-day (as proposed in Nov 2011)	Quarterly
Overfill prevention equipment inspections	3 year	Annual	Not required
Spill prevention equipment tests	3 year	Annual	3 year
Containment sump testing	3 year	Annual	Not required
Testing after repairs to spill and overfill prevention equipment, and secondary containment	Required	Required	Required
Eliminate flow restrictors in vent lines for all new tanks and when overfill prevention equipment is replaced	Required	Required	No change from existing regulation
Release Detection			
Operability tests for release detection equipment	Annual (plus annual check of sumps)	Annual (as proposed in Nov 2011)	Annual (plus annual check of sumps)
Add SIR/CITLD to regulation with performance criteria	Required	Required	Required
Response to interstitial monitoring alarms	Required	Required	Required
Groundwater and vapor monitoring for release detection	Continue to allow with site assessment	5-year phase out (as proposed in Nov 2011)	No change from existing regulation
Remove release detection deferral for emergency generator tanks	Required	Required (as proposed in Nov 2011)	Required
Other			
Require notification of ownership change	Required	Required	Required
Closure of lined tanks that cannot be repaired according to a code of practice	Required	Required	Required
Requirements for demonstrating compatibility with fuels >E10 and >B20	Required	Required (as proposed in Nov 2011)	No change from existing regulation
Remove deferrals for airport hydrant fuel distribution systems and UST systems with field-constructed tanks	Regulate under alternative release detection requirements	Require AHS/FCT notify implementing agency and report releases (with no other requirements)	Maintain deferral
EPAct-related Provisions			
Operator training	Required	Required	Required
Secondary containment	Required	Required	Required

* In the 2011 proposed regulation, these changes generally consisted of more or stricter requirements than what is in the final UST regulation. For example, the 30-day walkthrough inspections in the 2011 proposed UST regulation included monthly check of sumps. Please see the 2011 proposed UST regulation for details.

Many of the requirements in the final UST regulation will not immediately impose new costs upon UST owners or operators. For example, new requirements for periodic testing of equipment do not require owners or operators to perform those tests at the time the regulation comes into effect; depending on the requirement, owners or operators may have up to three years to satisfy the new requirements.[22] EPA's analysis accounts for this delay in its estimate of costs by discounting the costs associated with each requirement as shown in **Exhibit 1-2**. EPA

[22] Please refer to the preamble section for each requirement for a discussion of the implementation periods.

assumes that the monetized positive impacts associated with these requirements accrue at the end of the year in which costs occur since some beneficial impacts may lag requirements.[23]

Exhibit 1-2

Years Until Final Requirements Become Effective

Requirement	Number of years until effective
Release Prevention	
Walkthrough inspections	3[a]
Overfill prevention equipment inspections	3
Spill prevention equipment tests	3
Containment sump testing[7]	3
Release Detection	
Operability tests for release detection methods	3[b]
Remove deferral for emergency generator tanks	3[c]
Other	
Remove deferral for airport hydrant fuel distribution systems (Subparts B, C, D and H)[24]	3
Remove deferral for UST systems with field-constructed tanks (Subparts B, C, D and H)[9]	3
EPAct-related Provision	
Operator training	3

Please refer to the preamble section for each requirement for a discussion on the rationale behind the delayed implementation periods.

[a] This requirement is effective immediately under Alternative 1.
[b] This requirement is effective after one year under Alternative 1. In addition, under Alternative 1, groundwater and vapor monitoring are eliminated as release detection methods and must be phased out within five years.
[c] This requirement is effective after one year under Alternative 1.

Finally, EPA is including a set of revisions and clarifications that are not expected to have any economic impact, due to either the nature of the requirement or the interaction between the new UST regulation and existing regulation. The only cost associated with these clarifications and changes is the cost of reading the new regulation. These revisions include:

- Updating the regulation to reference newer technologies
- Updating the codes of practice listed in the regulation

[23] EPA does not have data to suggest any particular length of lag for each requirement; for this analysis, we assume that benefits accrue at the end of the year in which costs occur. Chapters 3 and 4 provide detailed descriptions of the methods used to assess costs and beneficial impacts.

[24] Removing deferrals for airport hydrant fuel distribution systems and field-constructed tanks will require these systems to comply with Subpart B, C, D, E, G, H, and J of 40 CFR Part 280 (as described in Subpart K). The final UST regulation requires these systems to comply with Subparts B, C, D, H, and J after 3 years, while compliance with Subparts E and G would be required immediately.

- Updating the regulation to remove old upgrade and implementation deadlines
- Updating the regulation for editorial and technical corrections
- Revising the State Program Approval regulation (40 CFR Part 281) to be consistent with the above revisions

1.5 Scope of Analysis

Within the constraints of data availability, this analysis attempts to capture all quantifiable and qualitative impacts of the final UST regulation. EPA obtained sufficient data to identify, by state, the number of units likely to be affected by each change in the regulation. The analysis uses these data to assess the compliance costs on these units and relevant state governments. In conducting these analyses, EPA also assessed the sensitivity of outcomes to key assumptions. Separately, the analysis monetizes a number of positive impacts of the regulation, including the avoided costs generated by avoided releases and reduction in severity of releases, avoided product loss, and avoided vapor intrusion damages. This analysis quantifies, but does not value, groundwater impacts. Finally, due to data and resource limitations, this analysis was unable to quantify or value human health benefits or ecological impacts, but addresses these qualitatively.

In addition to identifying costs and the positive impacts of the regulation, this analysis also examines the economic and distributional impacts of the regulation. The economic impact analysis includes the final UST regulation's effect on facility closures, employment, and energy output and cost. The analysis of the distributional impacts of the regulation examines the effect of a reduction in releases on state financial assurance funds, impacts on children's health, small business impacts, and impacts on low-income and minority populations. Finally, this analysis considers the final UST regulation's impacts related to certain executive orders and statutes, including the Unfunded Mandates Reform Act, tribal governments, and federalism.

1.6 Report Organization

To support the development of the final UST regulation, EPA designed and conducted this analysis of the regulation's costs, benefits, and economic impacts consistent with the requirements of Executive Order 12866, and OMB Circular A-4.[25] Data, methods, and results of this analysis are presented in the following chapters:

- ***Chapter 2: Universe of UST Systems Affected by the Final UST regulation.*** This chapter identifies a profile of the entities that may be affected by the final UST regulation.
- ***Chapter 3: Assessment of Compliance Costs.*** This chapter summarizes the methods employed by EPA to assess the cost impacts of the final UST regulation.

[25] Executive Order 12866. "Regulatory Planning and Review." October 4, 1993; and U.S. Office of Management and Budget. Circular No. A-4. September 17, 2003.

- ***Chapter 4: Assessment of Benefits and Cost Savings.*** This chapter presents estimates of the benefits and avoided costs of the final UST regulation.

- ***Chapter 5: Distributional Impacts and Considerations.*** This chapter summarizes the assessment of distributional impacts of the final UST regulation, including economic and energy impacts, effects on small businesses and governments, impacts on low-income and minority populations, and children's health effects.

- ***Chapter 6: Other Statutory and Executive Order Analyses.*** This chapter summarizes analyses required by certain statutes or executive orders, including regulatory planning and review, impacts created by unfunded mandates, federalism implications, effects on tribal governments, and joint impacts of the final UST regulation in the context of existing regulations.

- ***Chapter 7: Comparison of Costs, Benefits, and Other Impacts.*** This chapter summarizes and compares the costs, cost savings, and benefits of the final UST regulation.

- ***Appendices.*** We present the details of methods and assumptions we employ in a number of appendices.

Chapter 2. Universe of UST Systems Affected by the Final UST regulation

This regulatory impact analysis addresses the effects of the final regulatory changes on four types of UST systems: conventional UST systems with prefabricated tanks that store and dispense petroleum products; emergency generator tank systems that store fuel for occasional use; UST systems with field-constructed tanks that are typically designed to store large volumes of fuel; and airport hydrant fuel distribution systems that provide large volumes of fuel to aircraft using underground distribution systems.

This chapter describes the universe of systems, facilities, firms, and sectors that are likely to be affected by the final regulatory changes, and documents the extent to which state regulations already require compliance with the final UST regulation.

2.1 Types of Entities Affected by the Final UST regulation

The four types of UST systems that are potentially affected by the final UST regulation are characterized as follows:

- **Conventional UST systems (conventional USTs):** These systems include the universe of facilities and tanks that are currently subject to existing regulations, along with ancillary equipment (e.g., piping, dispensers, sumps, spill prevention equipment, and release detection equipment). The majority of these systems store and dispense petroleum products and are typically found at gas stations. A limited number store other hazardous substances, but the regulatory impact analysis does not consider these UST systems separately.[26] These UST systems are subject to all requirements under 40 CFR Part 280.

- **Emergency generator tank systems (EGTs):** Emergency generator tank systems refer to the tanks and piping for systems that provide longer-term storage of fuel for occasional use as a back-up fuel supply. These tanks are currently deferred from 40 CFR Part 280 Subpart D (release detection) but are subject to all other requirements under 40 CFR Part 280. The final UST regulation does not address emergency tanks at nuclear power plants, which are regulated by the Nuclear Regulatory Commission under 10 CFR Part 50, appendix A.[27]

- **UST systems with field-constructed tanks (FCTs):** Field-constructed tanks are underground bulk storage tanks that are built on-site because they are too large to be pre-fabricated. All identified field-constructed tanks currently in operation are owned by federal facilities and mainly serve operations at military bases. These tanks are currently deferred from all regulation under 40 CFR Part 280, except for Subparts A and F, but are typically subject to regulation under the Oil Pollution

[26] Because tanks storing hazardous substances are also currently subject to the 1988 UST regulation under 40 CFR Part 280, this analysis assumes that incremental costs and benefits associated with the final UST regulation will be comparable to the costs and benefits associated with other conventional UST systems. Although hazardous substance tanks are not included in the total number of active petroleum UST systems, EPA roughly estimates that less than one percent of all active regulated UST systems contain hazardous substances.

[27] See 40 CFR 280.10 Subpart A – Applicability.

Act of 1990, 40 CFR Part 112 (EPA's Spill Prevention, Control, and Countermeasure regulation).

- **Airport Hydrant Fuel Distribution Systems (AHFDSs):** Airport hydrant fuel distribution systems are systems that include one or more tanks (either above-ground or underground), underground piping, and underground ancillary equipment used to fuel aircraft. These systems do not typically have a dispenser at the end of the piping run, but instead have a pressurized hydrant (fill stand). Large commercial and military airports employ these systems, but most commercial systems have only above-ground storage tanks and are thus not affected by the final UST regulation.[28] These systems are currently deferred from all regulation under 40 CFR Part 280, except for Subparts A and F, but are typically subject to regulation under 40 CFR Part 112.

2.2 Configuration of Average Conventional UST System

Conventional UST systems reflect a relatively consistent configuration of standard equipment. While facility size and complexity vary significantly, this analysis assumes that a typical (average) conventional UST system is configured as follows (**Exhibit 2-1**):[29]

Exhibit 2-1

Assumed Average Configuration For A Conventional UST System

System Component	Configuration
Pipes per tank	1
Feet per pipe	100
Fill pipes (per tank)	1
Spill prevention equipment (per fill pipe)	1
Under-Dispenser Containment (UDC) (per tank)	2
Turbine sumps (per tank)	1

These assumptions best characterize motor fuel retailers, which represent approximately 80 percent of the 577,981 conventional UST systems in operation in 2013.[30] EGT systems and other conventional UST systems used to store fuel or hazardous substances are likely to have

[28] Industrial Economics, Inc. "Preliminary Assessment and Scoping of Data Related to Potential Revisions to the UST Regulations." Work Assignment 1-25, Tasks 2-4 November 20, 2008.

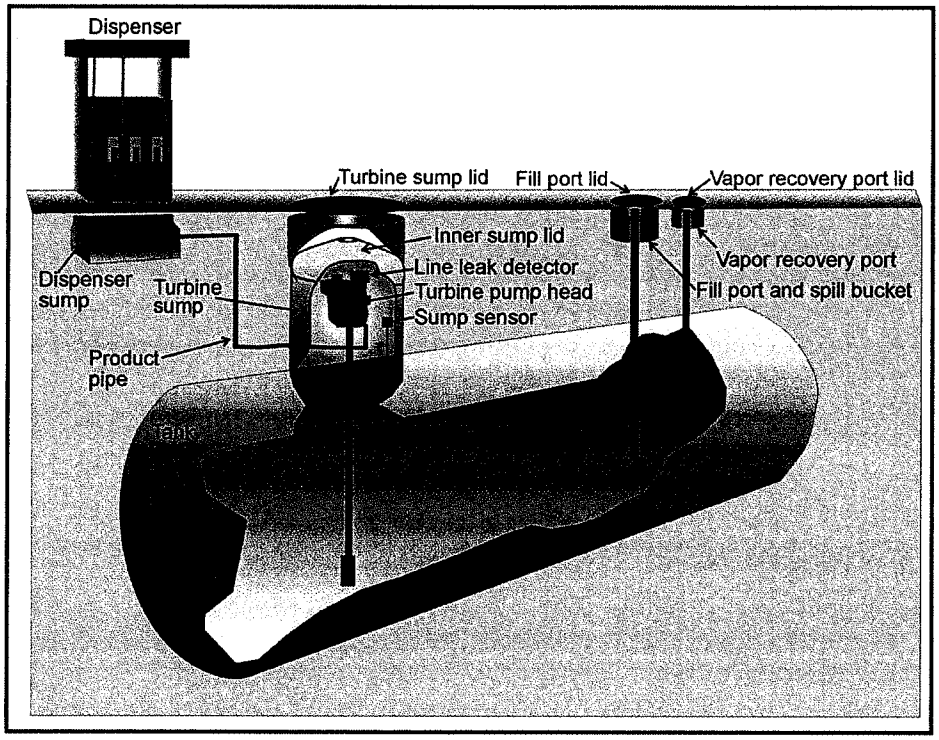
[29] Assumptions based on data collected from pipe installation companies, state data, and EPA professional judgment. See: Industrial Economics, Inc. "Methodology for Secondary Containment for Piping." Work Assignment 1-19, Task 5, October 3, 2008; and E^2, Incorporated. Memoranda and analyses submitted under Contract EP-W-05-018, "U.S. Environmental Protection Agency. Underground Storage Tanks/Leaking Underground Storage Tanks Analytical and Technical Support." Where gaps existed in the analyses, EPA used the best professional judgment of its UST system technical experts. All supporting materials not included in the appendices can be found in the docket for the final UST regulation.

[30] The remaining 20 percent of conventional UST systems consist of EGTs and tanks used for storing and dispensing fuel in commercial settings, hospitals, manufacturing, transportation, communications and utilities, and agriculture. See Exhibit 2-3 for details.

systems with similar components but less complex dispenser systems. The configurations of FCTs and AHFDSs are considered separately, and are described in detail in Appendix A. **Exhibit 2-2** provides an illustration of an UST system at a retail motor fuel establishment. Note that in this exhibit, the "dispenser sump" is a specific form of under-dispenser containment, and the "spill bucket" is an example of spill prevention equipment.

Exhibit 2-2

Configuration of Retail Motor Fuel UST System



2.3 UST Universe Size and Distribution Across Sectors

The December 2013 *Semi-Annual Report of UST Performance Measures* reports a universe of 577,981 active petroleum tanks (UST systems) in the United States and its

territories.[31,32] This total includes conventional UST systems and emergency generator tank systems. Estimates based on state data suggest that approximately 3.0 percent, or 17,339 of the 577,981 active UST systems, are emergency generator tanks.[33]

In addition to EGT and conventional UST systems, the final UST regulation addresses UST systems with FCTs and AHFDSs. While these two types of systems are deferred under current EPA regulation, a subset may be regulated by individual states and included in the total estimate of tanks provided by those states. For the purpose of this analysis, however, these two universes are considered to be separate from the 577,981 tanks identified in the 2013 EPA report. The total universe of UST systems with FCTs and AHFDSs includes approximately 334 UST systems with FCTs, and 74 AHFDSs (each hydrant system is supported by an average of roughly eight linked tanks) operated by the U.S. Department of Defense (DoD), 12 FCTs operated by the U.S. Department of Energy (DoE) and 10 AHFDSs operated at commercial airports.[34]

Most UST systems in the United States are located at motor fuel retail establishments (i.e., gas stations), and virtually all retail motor fuel establishments use UST systems. Approximately 148,000 (147,902) retail fueling sites operated in the United States in 2013.[35] Of these, approximately 127,000 included convenience stores.[36]

An analysis of state data by EPA concludes that the average retail motor fuel establishment has 3.07 tanks (UST systems).[37] Assuming approximately 3.07 UST systems per

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[31] U.S. Environmental Protection Agency, Office of Underground Storage Tanks. *Semi-Annual Report of UST Performance Measures End of Fiscal Year 2013 – As Of September 2013.* Accessed at: http://www.epa.gov/oust/cat/ca-13-34.pdf. State and territory underground storage tank programs report to EPA periodically throughout the year with data on their UST performance. EPA compiles the data for all states, territories, and Indian country and makes the data publicly available at http://www.epa.gov/OUST/cat/camarchv.htm.

[32] Data indicate that the universe of UST systems has declined steadily over the past two decades. To consider the impacts of declining universe sizes on the results of this analysis, we construct and evaluate an alternative baseline for compliance costs and avoided costs in Chapters 3.4.1 and 4.4.1, respectively.

[33] See: Industrial Economics, Inc. "Detailed Assessment of UST Universe by Tank Use and Industry Sector," Work Assignment 1-25, Task 6, January 23, 2009. The number of EGTs is assumed to be approximately 3.0 percent of all active UST systems based on the weighted average from four state databases.

[34] Based on a meeting with Department of Defense in March 2013 and supplemental information provided to EPA in April 2013. In addition, EPA identified 10 commercial airports with AHFDSs subject to the final UST regulation. DoE FCTs were identified from: U.S. Department of Energy. "U.S. Department of Energy Underground Storage Tank (UST) Compliance Strategy Report," July 31, 2006. This report identifies 12 DoE FCTs in South Carolina. See Appendix A for additional information.

[35] National Association of Convenience Stores. *Who Sells America's Fuel?* Accessed at: http://www.nacsonline.com/YourBusiness/FuelsReports/GasPrices_2014/Retail-Operations/Pages/Who-Sells-Americas-Fuel.aspx. According to NACS, there were 152,995 total retail motor fuel sites in the United States in 2013. Of these, 5,093 were "hypermarketers," which are big-box stores and other merchandisers that also sell motor fuels.

[36] Ibid.

[37] A 2006 analysis of 13 state UST databases performed for EPA estimated that the average retail motor fuel establishment (i.e., facility) has 3.13 tanks. Adjustments to reconcile various estimates of the current universe of USTs with industry estimates of the number of UST systems currently in place at retail motor fuel facilities further decreases the number of tanks per UST system operating in retail motor fuel settings to 3.07 tanks per retail motor

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facility and 147,902 facilities, 454,774 UST systems, or 79 percent of all active UST systems, are associated with retail motor fuel establishments.

In addition to traditional motor fuel retailers, big-box retailers, or hypermarkets, represent a growing segment of the retail motor fuel seller market. This category (NAICS code 452910) includes stores operated by Wal-Mart, Costco, and other large companies. Collectively, these firms operate approximately 5,100 filling stations; each station is likely to have at least three UST systems.[38]

Other industry sectors that report use of UST systems include agriculture (crop production and animal production), commercial (wholesale trade, retail trade, accommodation, and food services), communications and utilities (wired telecommunications carriers and electric power generation, transmission, and distribution), hospitals, manufacturing, transportation, local and state government operations, and federal facilities run by the U.S. Departments of Defense and Energy. Collectively these sectors comprise approximately 120,000 UST systems, including those in the government sector (**Exhibit 2-3**). In many cases, firms in these sectors use UST systems for fueling fleets of vehicles such as school buses, delivery trucks, or rental cars. In other cases, UST systems store fuel for operations or emergency use, used oil, or hazardous substances.

Facilities in sectors other than retail motor fuel have, on average, between 1.5 and 2.0 UST systems at the facilities that use UST systems. The actual number of UST systems at a specific facility, however, is likely to vary significantly depending on facility size and focus.[39]

Results of an analysis of public UST records of 54 states and territories performed for EPA suggest that the average number of UST systems per facility (across all sectors that use conventional UST systems or EGTs), is approximately 2.71.[40]

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fuel facility. See: Industrial Economics, Inc. "Small Entities Screening Analysis of UST Universe by Industry Sector." Work Assignment 3-25, Task 4, February 4, 2010.

[38] National Association of Convenience Stores. *Who Sells America's Fuel?* Accessed at: http://www.nacsonline.com/YourBusiness/FuelsReports/GasPrices_2014/Retail-Operations/Pages/Who-Sells-Americas-Fuel.aspx.

[39] E^2, Incorporated. Review of state databases, "Draft Industry and Facility Profiles," Task Order No. 1010 – General Technical and Programmatic Support in Implementing the Energy Policy Act of 2005. December 18, 2006.

[40] Skeo Solutions. "Summary of Key Data from State Public Record Postings," Work Order 1006, Table 1, October 25, 2013.

Exhibit 2-3

Summary Of Universe Of UST Systems By Sector

Industry Sector	NAICS	2009 [a]		2013 [b]	
		Number of Facilities with UST Systems	Number of UST Systems	Number of Facilities with UST Systems	Number of UST Systems
Retail Motor Fuel Sales	447	161,768	481,108	147,902	454,774
Commercial (wholesale trade, retail trade, accommodation, and food services)	42, 44-45, 72 (excluding 447)	21,652	49,793	27,356	47,068
Institutional (hospitals only)	622	2,220	3,631	2,098	3,432
Manufacturing	31-33	8,822	14,536	8,339	13,740
Transportation (air, water, truck, transit, pipeline, and airport operations)	481, 483-486, 48811	8,153	14,422	7,707	13,633
Communications and Utilities (wired telecommunications carriers; and electric power generation, transmission, and distribution)	5171, 2211	6,641	9,738	6,278	9,205
Agriculture (crop and animal production)	111, 112	847	1,534	801	1,450
Local governments [c]	Government jurisdiction	n/e	24,458	n/e	23,119
State governments [c]	Government jurisdiction	n/e	6,114	n/e	5,780
Federal government [c]	Government jurisdiction	n/e	6,114	n/e	5,780
Total: Conventional UST systems and EGTs		210,103[d]	**611,449**	200,480[d]	**577,981**
FCTs: Department of Defense	Government jurisdiction	239	239	334	334
FCTs: Department of Energy	Government jurisdiction	--	--	12	12
AHFDSs: Department of Defense	Government jurisdiction	162	1,296[e]	71	592[e]
AHFDSs: Commercial Airports	4581	--	--	10	64
Total: FCTs and AHFDSs		**401**	**1,535**	**430**	**1,002**

[a] Analysis based on E², Incorporated. Review of state databases, "Draft Industry and Facility Profiles," Task Order No. 1010 – General Technical and Programmatic Support in Implementing the Energy Policy Act of 2005, Amendment 1, TDD #11. December 18, 2006. Estimate of 168,987 retail motor fuel facilities with UST systems from "2005 U.S. motor fuel station count: 168,987," *National Petroleum News*, May 19, 2005 (annual survey of states to collect data on number of stations), adjusted to reflect 2009 universe of 611,449 UST systems. All sector adjustments proportional except retail motor fuel sales, which reflects the 2008 estimate of 161,768 facilities with UST systems from National Petroleum News. "MarketFacts 2008 Overview." August 2008, used as a proxy for the number of such facilities in 2009. (See also: Industrial Economics, Inc. "Preliminary Assessment and Scoping of Data Related to Potential Revisions to the UST Regulations." Work Assignment 1-25, Tasks 2-4 November 20, 2008.)

[b] Analysis based on 2009 column (see note a above), adjusted to reflect 2013 universe of 577,981 UST systems. All sector adjustments proportional except retail motor fuel sales, which reflects the 2013 estimate of 147,902 facilities with UST systems from *National Association of Convenience Stores. Who Sells America's Fuel?* Accessed at: http://www.nacsonline.com/YourBusiness/FuelsReports/GasPrices_2014/Retail-Operations/Pages/Who-Sells-Americas-Fuel.aspx. The NACS Retail Fuels report noted 152,995 total facilities dispensing motor fuel commercially, of which 5,093 are hypermarketers and not included in the retail motor fuel sales category. (See also: Industrial Economics, Inc. "Preliminary Assessment and Scoping of Data Related to Potential Revisions to the UST Regulations." Work Assignment 1-25, Tasks 2-4 November 20, 2008.)

[c] See: ICF. "Economic Impact Analysis of Additional Mechanisms for Local Government Entities to Demonstrate Financial Responsibility for Underground Storage Tanks." December 1992. Exhibit 3-1. Estimates of local government UST systems adjusted using the 1987 Census of Governments. Consistent with this analysis, the number of government UST systems is assumed to be two percent of all 2013 UST systems owned by state and federal governments and four percent of all 2013 UST systems owned by local governments.

[d] The totals shown are the sum of the number of facilities of the rows above. These estimates are used only to establish distribution of facilities across sectors based on available data.

[e] This number assumes that there are eight tanks per AHFDS. For more detail on assumptions for AHFDSs, see Appendix A.

2.4 Universe of Facilities and Systems Potentially Affected by Final UST regulation

EPA expects that all facilities or UST systems in the universe of conventional UST systems will be required to comply with one or more regulatory changes in the final UST regulation, but the number of facilities and systems affected by each specific regulatory change will vary depending on the extent of current (baseline) state regulations and the type of equipment currently in use.

To estimate the number of systems that will be required to comply with each regulatory change, EPA reviewed publicly available data about state regulations, combined with data from a limited sample of states and equipment providers about the use of different technologies for release prevention and detection.[41]

Exhibit 2-4 identifies the total number of UST systems that could potentially be affected by each regulatory change in the final UST regulation, based on the baseline technology currently in place in the universe of systems. **Exhibit 2-4** identifies the number of UST systems or facilities with relevant technologies, the type of system (i.e., conventional UST and EGT systems, facilities with conventional UST systems or EGTs, AHFDSs, or FCTs), the proportion of the relevant universe of UST systems with the technology, a summary of the assumptions that define the number of affected units, and the source of those assumptions. Note that changes for AHFDSs, EGTs, and FCTs affect only those universes of facilities, and EPAct-related provisions affect only facilities and UST systems in Indian country.[42] See Appendix B for detailed descriptions of the values and sources used in each calculation. The estimates in **Exhibit 2-4** do not reflect baseline state regulations (e.g., whether a state already requires spill prevention equipment testing). As discussed later in this chapter, some baseline state requirements satisfy requirements of the final UST regulation.

[41] E^2, Incorporated. Memoranda and analyses submitted under Contract EP-W-05-018, "U.S. Environmental Protection Agency. Underground Storage Tanks/Leaking Underground Storage Tanks Analytical and Technical Support." Where gaps existed in the analyses, EPA used the best professional judgment of its UST system technical experts. All supporting materials not included in the appendices can be found in the docket for the final UST regulation.

[42] EPA assumes that all states have adopted EPAct-related provisions in the baseline, consistent with existing guidance.

Exhibit 2-4

Potential Number And Type Of Units Affected By Each Requirement

Regulatory Change	Universe	Proportion of Total Universe Affected Annually	Number of Potentially Affected Systems (Annual) [a]	Assumptions	Source
Release Prevention					
Walkthrough inspections	Facilities with Conventional UST systems and EGTs	100.0%	213,277 facilities	All facilities require periodic walkthrough inspections.	Not applicable – all facilities require inspections.
Overfill prevention equipment inspections	Conventional UST systems and EGTs	100.0%	577,981 systems	Percentage of UST systems with overfill prevention equipment.	E², Incorporated, Task Order No. 3003, TDD #7: across 10 states, 99.8% of systems had overfill prevention equipment; EPA conservatively assumes all UST systems have overfill prevention equipment.
Spill prevention equipment tests	Conventional UST systems and EGTs	90.0%	520,183 systems	One-to-one spill prevention equipment to tank ratio; 10 percent have self-monitoring mechanism and do not need monitoring.	EPA estimate based on information discussions with service contractors and inspectors.
Containment sump testing	Conventional UST systems and EGTs	18.3%	105,771 systems	Pipes that use interstitial monitoring and do not use continuous sensors, pressure, vacuum, or liquid-filled leak detection monitoring mechanisms.	E², Incorporated, Task Order No. 3003, TDD #5, Table 13.
Spill prevention equipment inspection after repair	Conventional UST systems and EGTs	2.5%	14,450 systems	Spill prevention equipment requires fix once every four years; repairs are used as the fix 10 percent of the time.	E², Incorporated, Task Order No. 3003, TDD #7: across 10 states, 99.8% of systems had overfill prevention equipment; EPA conservatively assumes all UST systems have overfill prevention equipment; repair/replace frequencies are EPA assumptions.
Overfill prevention equipment test after repair	Conventional UST systems and EGTs	2.0%	11,560 systems	Overfill prevention equipment requires fix once every five years; repairs are used as the fix 10 percent of the time.	EPA estimated that only a small (10%) percentage of overfill devices were repaired rather than replaced based on verbal conversations with service contractors. PEI provided the five-year estimate based on information compiled from their members. This was also supported by answers from 3 vendors dated 11/8/12.
Secondary containment test after repair	Conventional UST systems and EGTs	3.3%	19,324 systems	Tanks and pipes that use interstitial monitoring and do not use continuous sensors, pressure, vacuum, or liquid-filled leak detection monitoring mechanisms. Includes five percent of tanks and 90 percent of piping that use interstitial monitoring. Assumes 20 percent of pipes and five percent of tanks require repair every year.	E², Incorporated, Task Order No. 3003, TDD #5, Table 13; repair/replace frequencies are EPA assumptions.

Exhibit 2-4

Potential Number And Type Of Units Affected By Each Requirement

Regulatory Change	Universe	Proportion of Total Universe Affected Annually	Number of Potentially Affected Systems (Annual) [a]	Assumptions	Source
Eliminate flow restrictors in vent lines for all new tanks and when overfill prevention equipment is replaced	Conventional UST systems and EGTs	13.5%	78,256 systems[b]	13 percent of new UST systems would have installed flow restrictors in vent lines, and 13 percent of existing UST systems with replaced overfill prevention equipment would have installed flow restrictors in vent lines. Assumes five percent turnover of UST systems, a 19 percent test fail rate for flow restrictor, and that 90 percent of fixes require replacement of the flow restrictor.	Information on number of new UST systems that would install flow restrictors provided by Robert Penkes, PEI, in August 2009; remainder from E², Incorporated, Task Order No. 3003, TDD #21.
Release Detection					
Operability tests – ATG	Conventional UST systems and EGTs	33.7%	194,548 systems	UST systems that use automatic tank gauges.	E², Incorporated, Task Order No. 3003, TDD #5, Table 11.
Operability tests – interstitial monitoring	Conventional UST systems and EGTs	18.8%	108,499 systems	UST systems that use interstitial monitoring (excluding five percent that conduct manual testing of the interstice).	E², Incorporated, Task Order No. 3003, TDD #5, Table 11.
Operability tests – line leak detection	Conventional UST systems and EGTs	27.5%	159,221 systems	Pressurized piping systems that use electronic line leak detectors.	E², Incorporated, Task Order No. 3003, TDD #5, Table 11.
Operability tests – groundwater and vapor monitoring	Conventional UST systems and EGTs	4.5%	25,968 systems	UST systems that use vapor monitoring and/or groundwater monitoring as their sole release detection method(s).	E², Incorporated, Task Order No. 3003, TDD #5.
Eliminate groundwater and vapor monitoring as release detection methods (Alternative 1 only)	Conventional UST systems and EGTs	4.5%	25,968 systems	UST systems that use vapor monitoring and/or groundwater monitoring as their sole release detection method(s). Universe affected phases in over five years.	E², Incorporated, Task Order No. 3003, TDD #5.
Add SIR/CITLD to regulation with performance criteria	Conventional UST systems and EGTs	0.5%	2,809 systems	13 percent of UST systems use SIR; 15 percent of these use qualitative methods. Of these, 25 percent are assumed to incur costs to comply.	E², Incorporated, Task Order No. 3003, TDD #5, Table 11.
Response to interstitial monitoring alarms	Conventional UST systems and EGTs	2.4%	14,003 systems	Weighted average annual percentage of UST systems and piping that experience an interstitial monitoring alarm. Assumes 20 percent of tanks and 18 percent of pipes use interstitial monitoring, and that three percent of tanks and 10 percent of pipes experience an alarm in a given year.	E², Incorporated, Task Order No. 3003, TDD #5, Tables 11 and 13.
Remove release detection deferral for emergency generator tanks	EGTs	3.0%	17,339 systems	UST systems assumed to be emergency generator tanks.	Based on review of over 15 state databases and discussions with several state UST program representatives.
Other					

Exhibit 2-4

Potential Number And Type Of Units Affected By Each Requirement

Regulatory Change	Universe	Proportion of Total Universe Affected Annually	Number of Potentially Affected Systems (Annual) [a]	Assumptions	Source
Remove deferral for airport hydrant fuel distribution systems	AHFDSs	100.0%	81 facilities	All airport hydrant fuel distribution systems, including 71 DoD systems and 10 commercial airport systems.	Meeting with U.S. Department of Defense (DoD) in March 2013 and supplemental information provided to EPA in April 2013, plus information based on public comments and additional EPA research to identify commercial airport systems potentially affected. See Appendix A for additional information.
Remove deferral for UST systems with field-constructed tanks	FCTs	100.0%	346 systems	All UST systems with field-constructed tanks, including 334 DoD systems and 12 DoE systems.	Meeting with U.S. Department of Defense (DoD) in March 2013 and supplemental information provided to EPA in April 2013 and U.S. Department of Energy, "U.S. Department of Energy Underground Storage Tank (UST) Compliance Strategy Report," August 2006, p. A-32 to A-34. See Appendix A for additional information.
Require notification of ownership change	Facilities with Conventional UST systems and EGTs	10.1%	21,505 facilities	Annual number of facilities that change ownership.	E², Incorporated, Task Order No. 3003, TDD #27.
Closure of lined tanks that cannot be repaired according to a code of practice	Conventional UST systems and EGTs	<0.1%	80 systems	Annual number of lined UST systems that cannot be repaired	E², Incorporated, Task Order No. 3003, TDD #17, Table 1 and E², Incorporated, Task Order No. 3003, TDD #5.
Requirements for demonstrating compatibility with fuels > E10 and > B20	Conventional UST systems and EGTs	0.04%	234 systems	0.4 percent of conventional UST systems and EGTs use fuels E >10 or B > 20, assume 10 percent can demonstrate compatibility	Based on the count of UST systems from OUST's mid-year and end-year reports, plus the U.S. Department of Energy's (DoE's) Alternative Fuels Data Center listing the amount of stations selling E85 fuel.
EPAct-related Provisions					
Operator training	UST Facilities in Indian country	100.0%	966 facilities	All facilities in Indian country.	Not applicable – applies to all facilities in Indian country.
Secondary containment - new and replaced tanks	UST systems in Indian country	36.2%	947 systems[b]	Approximately 72.4 percent of systems in Indian country are single-walled. Analysis assumes midpoint of time horizon until all units are	E², Incorporated, Tribal Data Analysis, July 2007.

Exhibit 2-4

Potential Number And Type Of Units Affected By Each Requirement

Regulatory Change	Universe	Proportion of Total Universe Affected Annually	Number of Potentially Affected Systems (Annual) [a]	Assumptions	Source
				replaced (year 10, 50 percent of universe affected).	
Threshold for pipe replacement rather than repair	UST systems in Indian country	30.2%	789 systems[b]	Piping replaced every five years, where 60.3% are single-walled. Analysis assumes midpoint of time horizon until all units are replaced (year 10, 50 percent of universe affected).	E², Incorporated, Tribal Data Analysis, July 2007.
Under-dispenser containment for all new dispensers	UST systems in Indian country	48.5%	1,270 systems[b]	Approximately 97 percent of systems require under-dispenser containment. Analysis assumes midpoint of time horizon until all units are replaced (year 10, 50 percent of universe affected).	E², Incorporated, Tribal Data Analysis, July 2007, Industrial Economics, "Preliminary Assessment and Scoping of Data Related to Potential Revisions to the UST Regulations; Tasks 2-4, Work Assignment 1-25," November 20, 2008, Appendix A, and OUST End-of-Year reports.

[a] Figures in this column are calculated assuming that the average number of UST systems per facility is approximately 2.71, per: Skeo Solutions. "Summary of Key Data from State Public Record Postings," Work Order 1006, Table 1, October 25, 2013.

[b] The affected universes presented for these items reflect 50 percent of ultimately affected systems or facilities. Because these requirements take effect over time and future costs are discounted, we present the universe affected at year 10 as a central estimate. In addition, we adjust unit costs to reflect the fact that the total cost of these requirements grows as the number of affected systems or facilities increases.

2.5 Facilities and Systems Affected by Final UST regulation

Many states currently have baseline regulations consistent with one or more requirements in the final UST regulation. As a result, only a portion of the universe of potentially affected facilities will be required to change practices to comply with each regulatory change. Whereas **Exhibit 2-4** displays the number of units that may potentially be subject to each requirement, **Exhibit 2-5** identifies, based on EPA's review of baseline state regulations, the number of units that will be subject to these requirements as a result of the final UST regulation. For nearly all requirements, some portion of the potentially affected universe is already in compliance with the final regulatory changes. For example, in cases where a state's regulatory baseline already requires activities commensurate with the regulatory requirement under a given regulatory option of this final regulation, UST systems within that state are not considered to be "systems affected" by the regulatory option in question, because these systems would not incur any incremental requirements or associated costs under the final regulation. Section B.2 of Appendix B, and the tabular summary of state regulatory requirements on pages B-10 through B-16, contain the complete set of information on state regulatory baselines as they pertain to the regulatory requirements of the final regulation, and provide an accounting of which states are considered by the cost estimation modeling in this RIA to have state regulatory baselines in full, partial, or non-

compliance with each regulatory requirement of the final regulation. The tabular summary on pages B-10 through B-16 of Appendix B indicates the frequency or presence of the regulatory requirement according to each state's regulatory baseline. As indicated above, by comparing these frequencies or requirements with those in each regulatory option of the final regulation (as shown in **Exhibit 1-1**), it is possible to determine whether UST systems in a given state are subject to a particular regulatory requirement under a given regulatory option, based on whether the regulatory baseline of the state in question accords with the regulatory requirement under that regulatory option. If the state regulatory baseline is as stringent, or more stringent, than what is required under the regulatory option (**Exhibit 1-1**), then UST systems in that state are not considered affected by that particular regulatory requirement (and appear in **Exhibit 2-4** but not in the "systems affected" column of **Exhibit 2-5**). Otherwise, the systems are considered to be affected (and appear in both **Exhibit 2-4** and the "systems affected" column of **Exhibit 2-5**).

Alternative Option 2 will affect the smallest number of systems. Among the specific regulatory changes, walkthrough inspections and spill prevention equipment tightness testing affect the largest number of UST systems in all scenarios.[43] In contrast, several regulatory changes (e.g., closure of irreparable lined tanks and pipe replacement requirements) are likely to affect only a small number of systems.

The distribution of incremental impacts of the regulation also depends on the distribution of baseline technologies across states with different baseline regulations. Facilities and systems in states with fewer current regulations may bear a greater proportion of costs and benefits than facilities and systems in states with extensive baseline regulations. A key limitation of available baseline data is that baseline technology data is not available at the state level. For example, it is possible that facilities and systems with specific release detection technologies (e.g., automatic tank gauges (ATGs)) may not be distributed evenly across all states. However, estimates of the percentage of systems using ATGs are available only at the national level. As a result, the regulatory scenarios in Chapters 3 (Compliance Costs) and Chapter 4 (Benefits and Cost Savings) reflect regulatory changes required by an "average" facility in a state under the final UST regulation, assuming that all systems reflect the national profile of existing technologies. Analyses of economic impacts and small businesses in Chapter 5 (Distributional Analyses) assess the possible distribution of compliance impacts related to this uncertainty.

[43] Walkthrough inspections are estimated at a facility level; the number of UST systems estimated as affected by these regulations is 555,003. Note that even those states that currently require walkthroughs do so on a monthly basis, rather than a 30-day basis. This RIA considers facilities in those states to be affected by this regulatory requirement; however, it applies to these facilities only the incremental cost between conducting monthly inspections over a one-year period and conducting 30-day inspections over a one-year period (i.e., a fraction of the cost of one inspection).

Exhibit 2-5

Estimated Systems Not Currently Regulated By States

Description	Universe of Potentially Affected Systems	Systems Affected by Selected Option	Systems Affected by Alternative Option 1	Systems Affected by Option Alternative Option 2
Release Prevention				
Walkthrough inspections [a]	213,277 (facilities)	204,798 (facilities)	204,798 (facilities)	128,986 (facilities)
Overfill prevention equipment inspections [a]	577,981	354,769	395,802	N/A
Spill prevention equipment tests [a]	520,183	388,641	418,547	388,641
Containment sump testing	105,771	80,324	95,366	N/A
Spill prevention equipment inspection after repair	14,450	14,306	14,306	14,306
Overfill prevention equipment test after repair	11,560	11,280	11,280	11,280
Secondary containment test after repair	19,324	14,426	14,426	14,426
Eliminate flow restrictors in vent lines for all new tanks and when overfill prevention equipment is replaced [b]	78,256	63,818	63,818	N/A
Release Detection				
Operability tests – ATG [c]	194,548	190,854	190,854	190,584
Operability tests – interstitial monitoring [c]	108,499	106,438	106,438	106,438
Operability tests – line leak detection [c]	159,221	156,197	156,197	156,197
Operability tests – groundwater and vapor monitoring [c]	25,968	25,475	N/A	25,475
Eliminate groundwater and vapor monitoring as release detection methods [c, d]	25,968	N/A	25,968	N/A
Add SIR/CITLD to regulation with performance criteria	2,809	2, 756	2,756	2,756
Response to interstitial monitoring alarms	14,003	10,634	10,634	10,634
Remove release detection deferral for emergency generator tanks	17,339	10,977	10,977	10,977
Other				
Remove deferral for airport hydrant fuel distribution systems	81 [e]	56	56	N/A
Remove deferral for UST systems with field-constructed tanks	346	198	198	N/A
Require notification of ownership change	21,505 (facilities)	3,220 (facilities)	3,220 (facilities)	3,220 (facilities)
Closure of lined tanks that cannot be repaired according to a code of practice	80	57	57	57
Requirements for demonstrating compatibility with fuels > E10 and > B20	234	234	577,981[f]	N/A
EPAct-related Provisions				
Operator training	966 (facilities)	966 (facilities)	966 (facilities)	966 (facilities)
Secondary containment - new and replaced tanks [b]	947	947	947	947
Threshold for pipe replacement rather than repair [b, g]	789	0	0	0
Under-dispenser containment for all new dispensers [b]	1,270	1,270	1,270	1,270

[a] The universe of affected systems for these requirements varies because some states have current requirements that differ in frequency and ensure baseline compliance in some regulatory scenarios but not others.

[b] The affected universes presented for these items reflect 50 percent of ultimately affected systems or facilities. Because these requirements take effect over time and future costs are discounted, we present the universe affected at year 10 as a central estimate. In addition, we adjust unit costs to reflect the fact that the total cost of these requirements grows as the number of affected systems or facilities increases.

[c] The number of affected systems differs from the universe of *potentially* affected systems for this requirement; however, as indicated in Appendix B, this RIA does not apply state baseline regulatory requirements to any system for this requirement. The number of affected systems is smaller than the number of potentially affected systems because some systems to which this requirement applies are EGTs, and the application of regulatory requirements to these systems is covered in the

Exhibit 2-5

Estimated Systems Not Currently Regulated By States

Description	Universe of Potentially Affected Systems	Systems Affected by Selected Option	Systems Affected by Alternative Option 1	Systems Affected by Option Alternative Option 2

requirement for removing the release detection deferral for EGTs, and affects the numbers shown for this requirement as well.

[d] Universe affected phases in over five years.

[e] The universe of potentially affected units is 81 systems, or 632 tanks (at eight tanks per system for the 71 DoD-owned systems, plus an additional 64 tanks at the 10 commercial airport systems).

[f] As part of the requirements for demonstrating compatibility with fuels > E10 and > B20 proposed in November 2011, all UST systems must maintain equipment records. While 234 represents the number of UST systems subject to demonstrating compatibility with fuels > E10 and >B20 under the Selected Option, all (577,981) UST systems would are subject to the requirement to maintain equipment records under Alternative Option 1.

[g] EPA's screening analysis shows that a requirement to replace piping if more than 50 percent of it requires repairs would likely generate no net costs, as owners or operators would ordinarily pursue replacement under those circumstances. See Appendix C for details.

Chapter 3. Assessment of Compliance Costs

3.1 Introduction

This chapter describes EPA's analysis of the social costs associated with the final UST regulation. OMB guidance suggests that an analysis that relies on measures of opportunity cost and willingness to pay provides a holistic basis for assessing the total cost of any regulation. Specifically, a social cost analysis should focus on measuring changes in consumer and producer surplus by considering the market responses to compliance costs (e.g., changes in demand and supply). Along with the administrative costs incurred by the government, changes in producer and consumer surplus reflect the true cost to society of adopting a set of regulatory measures.

For this regulatory impact analysis, EPA uses a combination of direct compliance costs and state oversight costs to approximate social costs. In this context, compliance costs represent a reliable indicator of social costs for the following reasons:

- The regulatory requirements generally focus on additional testing and inspection of existing equipment, and do not reflect large-scale investments in equipment or significant changes to operations at the facility level. In addition, the facilities affected by the regulation are distributed with relative geographic uniformity for consumers and producers.

- Given the small per-facility costs of the regulation (approximately $715 for the average facility, as documented in this chapter), closures or changes in market structure represent an unlikely response to the regulation. Therefore, it is unlikely that significant changes to production or consumer behavior will affect social costs.

- The short- and long-run impacts of the regulation are not likely to differ significantly. Testing and inspection requirements under the regulation may offer some opportunities for owners and operators to reduce costs by learning over time, but they are not likely to reduce costs enough to facilitate large-scale equipment upgrades.

For these reasons, compliance costs are likely to be a reasonable approximation of social costs over both the short- and long-run. This chapter presents EPA's compliance cost methodology and results, and summarizes the calculation of government oversight costs. The chapter also provides a discussion of key uncertainties and several brief sensitivity analyses. An analysis of the potential economic impacts of the final UST regulation is presented in Chapter 5, and a sensitivity analysis that evaluates the effects of alternative interest rates is presented in Chapter 7.

3.2 Compliance Cost Methodology

In this chapter, EPA presents its methodology for estimating incremental compliance costs of the final UST regulation beyond the current baseline costs of existing federal and state

regulation of underground storage tanks. EPA's analysis focuses on the specific incremental costs that occur as a consequence of the regulation.[44] Throughout this chapter, the analysis distinguishes between three types of costs:

- System-level: Costs that occur at the individual UST tank level, including ancillary equipment.
- Facility-level: Costs that occur at the level of a facility that owns several USTs; typically 2.71 times the system-level cost to reflect UST ownership by the average facility.
- Unit costs: System-level costs related to a particular requirement. For example, the requirement to provide notification of ownership change has a unit cost of approximately $14.

Calculation of total incremental compliance costs for UST facilities reflects two key steps: identifying specific measures necessary for compliance at individual facilities, and calculating costs associated with each of these measures. To estimate these costs, EPA developed a compliance cost model that identifies incremental equipment and labor requirements for an individual system. Based on the baseline equipment, existing state regulations, and anticipated responses to the regulation, the model then generates system-specific estimates of compliance costs. Compliance costs include the labor and capital costs associated with new equipment and installation, inspection, testing, and recordkeeping. The model also includes other compliance costs, such as those associated with more frequent detection of equipment failure and repair of equipment. Some component costs are specific to individual UST system configurations – for example, airport hydrant fuel distribution systems or UST systems with field-constructed tanks – while others are consistent across all system types.

We calculate the compliance costs of the final UST regulation by measuring three factors: the proportion of facilities or UST systems with specific technologies (i.e., the portion of systems that require specific types of upgrades or tests, described in Exhibit 2-4 and Section B.1 of Appendix B); the regulations already in place in each state (i.e., baseline regulations, described in Exhibit 2-5 and Section B.2 of Appendix B); and, the unit cost to comply with each element of the regulation (described in this Chapter, specifically Exhibit 3-1, as well as Appendix D).

An important limitation of our analysis is that we do not have data on the distribution of UST technologies. Consider the following from **Exhibit 2-5**: under the Selected Option, we estimate that overfill prevention tests will be a new requirement for 354,769 systems, and spill prevention equipment tests will be a new requirement for 388,641 systems. These requirements could together affect as few as 388,641 systems if all systems that are affected by overfill

[44] For this final UST regulation, EPA does not specifically attempt to measure baseline regulatory costs. However, costs identified in the 1988 EPA regulation that set original technical standards under 40 CFR Part 280 provide an indication of baseline costs. The 1988 RIA calculated per-tank costs of $28,770, equivalent to $55,836 in 2012 dollars. See: U.S. Environmental Protection Agency. "Regulatory Impact Analysis of Technical Standards for Underground Storage Tanks." August 24, 1988. Volume 1, page ES-7, Exhibit ES-1.

prevention testing are a subset of the systems that are affected by spill prevention testing. In the absence of additional information, it is equally plausible that these two requirements affect the entire universe of USTs if they overlap as little as possible.

EPA has not identified any information that could allow us to reliably narrow the universe of affected USTs to a number smaller than the entire universe. Further, EPA's review of state data suggests that facilities in all states will be subject to some cost under the final UST regulation.[45] Consequently, when considering the average cost of the regulation on a facility or UST system basis, we divide the total cost by the number of facilities or systems in the entire universe.[46]

3.2.1 Categories of Compliance Costs Analyzed

This analysis includes the following categories of compliance costs: operation and maintenance costs; capital costs; and implicit capital costs, or "time value of money costs" associated with earlier detection of equipment failure. Because the final UST regulation focuses on operational improvements, operation and maintenance costs constitute the majority of the compliance costs identified in this analysis. These costs are relatively frequent, recurring costs that mainly involve a service activity. Operation and maintenance activities include the labor and materials costs associated with maintenance of equipment, routine testing, and inspection (whether performed by the owner, operator, or a contractor). This analysis assumes that UST

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[45] The discounted cost per UST system ranges from less than $100 in one state to over $310, with costs in 20 states and territories falling between $290 and $320, costs in another 17 states and territories falling between $230 and $270, and costs in another six states and territories between $210 and $230. The remaining 13 states and territories have per-system costs between $75 and $200, with all but two states or territories having costs upwards of $130 per system. These costs are calculated by considering the regulatory baseline in each state, and the unit costs of each regulatory requirement not already required by the regulatory baseline in a given state. From the example above, states with low per-UST system costs are those with regulatory baselines that substantially overlap with the requirements of the final regulation, while those with the highest costs are those where most or all of the requirements of the final regulation are not already required by the state. Note that the figures presented here assume an average distribution of technologies across states, such that the only variant in UST system costs per state is the existing extent of each state's regulatory baseline.

[46] We address uncertainty in the distribution of technology and costs with a set of sensitivity analyses in section 3.5 of this chapter, and we consider the economic impacts of different distributions of costs in Chapter 5. Our analysis indicates that approximately 81 percent of all facilities incur costs below the average per-facility cost (calculated by dividing total costs by total facilities) and 18 percent of facilities incur per-facility costs in excess of 110 percent of this calculation of average per-facility cost. The remaining one percent of facilities incur costs within the range of 100-110 percent of average per-facility costs.

The cost estimates reported in the RIA and used in the analysis in this footnote do not incorporate high-end technology costs; they reflect the market costs for widely available technologies. The analysis in this footnote represents a worst-case cost scenario only as relates to impacts on small facilities, in order to consider potential business and employment impacts (see Section 5.2.3). To do this, it examines the combined impact of two distinct, high-cost assumptions: 1) that a given subset of UST systems are located in the state or states with the state regulatory baselines that overlap or accord *least* with the final regulation, and thus incur the highest compliance costs; and 2) that this *same subset* of UST systems has or uses the technologies for which regulatory costs are highest. The analysis concludes that even under this bounding scenario in which the smallest, oldest facilities are universally located in states with low baseline regulatory requirements, employment and business impacts are limited. The Chapter 3 cost analysis assumes that the technology distribution of UST systems is similar across states, reflecting standard turnover in facilities and equipment.

facility owners and operators pay in full for these costs when they occur (that is, they do not obtain financing and pay over time).[47] Some of the operation and maintenance activities included in the final UST regulation take the form of recurring requirements occurring less frequently than once per year: for example, overfill prevention equipment inspections are required every three years under the Selected Option. We calculate the total incremental annual cost of these recurring requirements by assuming that an equivalent portion of the universe incurs the cost associated with each such recurring requirement every year: for overfill prevention equipment inspections, we assume one third of the affected universe of UST systems must undergo this inspection each year, such that all UST systems have complied within each three-year inspection period.[48]

Because the final UST regulation does not focus on broad equipment requirements, capital costs represent a small portion of the total compliance costs for this regulation. Capital costs address the purchase and installation of new equipment, such as installing a new double-walled UST or under-dispenser containment. Total capital costs typically include installation, labor, and initial service required to ensure the new equipment is fully functioning. EPA assumes that UST owners and operators finance these compliance costs over the life of the equipment; all capital costs are calculated over a regulatory time horizon of 20 years.[49] The following examples characterize the three types of capital cost calculations that are relevant to this regulatory analysis:

Existing equipment replacements: An UST system owner or operator must upgrade an existing system with new equipment to comply with a requirement under the regulation (e.g., facilities with EGTs may be required to install release detection equipment when the deferral is removed). The incremental compliance cost is the total cost of the new equipment and installation (including removal of existing equipment).[50] Any additional (incremental) operation and maintenance costs are also included.

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[47] Certain one-time costs that occur only once over the regulatory time horizon (e.g., one-time spending on initial operator training for personnel at existing facilities) are also annualized over 20 years.

[48] As noted in Exhibit 1-2, a number of recurring operations and maintenance requirements will not immediately impose costs on UST owners and operators as they may have up to three years (depending on the requirement) to comply with the initial testing or inspection requirement. Where applicable, we discount the annual cost associated with each such requirement by the length of this implementation delay at a seven percent discount rate (consistent with OMB's guidance on discount rate), to account for the fact that owners and operators are not required to conduct the first test or inspection immediately. Chapter 7 also presents results for the Selected Option using a three percent discount rate.

[49] Due to a lack of data on the distribution of ages of UST systems and planned retirements/replacements of existing systems, EPA assumes that owners and operators amortize all capital costs over a 20-year expected regulatory horizon to be consistent with the 20-year expected lifetime of an UST system. Note that this annualization timeframe specifically applies only to UST system (i.e., tank) components; for other associated equipment with a lifetime other than 20 years, EPA assumes that a proportion of the universe is affected per year. For example, EPA assumes that piping is replaced every five years; i.e., one-fifth of the universe must replace it every year. The central analysis uses a seven percent discount rate, consistent with: U.S. Office of Management and Budget. Circular No. A-94. Revised October 29, 1992. Other discount rates are considered in Chapter 7.

[50] This approach may overstate costs, as it does not account for the age of existing equipment (depreciation). Owners and operators typically plan for new capital expenditures over the lifetime of existing equipment, recording depreciation as operations consume its usefulness over time. If an owner or operator is close to

New equipment requirements: An operator is installing new or replacement equipment as an ordinary business expense. Under baseline regulations, *Equipment A* is compliant. However, new regulations require a higher level of compliance for new tank systems that can be satisfied at lowest cost by *Equipment B*. The incremental compliance cost to the operator of the equipment is the additional cost (if any) of purchasing, installing and operating *Equipment B* instead of *Equipment A*. The costs of this requirement reflect the timing of the normal replacement cycle for all equipment in the universe. For example, owners and operators installing new UST systems will be required to use technologies other than flow restrictors to ensure release prevention.

Time value of money (TVM) costs: Under baseline regulations, the average UST system requires inspection every three years. EPA estimates that the baseline three-year inspection, on average, identifies a hypothetical repair or replacement cost of $100 associated with certain equipment. For example, under the final UST regulation, a new annual test could discover the same issue sooner and require repair or replacement two years earlier than it would have been discovered in the baseline. In this example, while the repair expense is the same, the regulation generates a time value of money cost by requiring an owner or operator to incur the repair expenditure sooner.[51]

Costs to Regulated Universe to Review Regulation: This analysis assumes that all facility operators in the universe will be required to read the final UST regulation in order to comply with it. For conventional USTs and EGTs, we estimate that reading and understanding the final UST regulation will require 4.75 hours of labor from a manager at each facility. This equates to a one-time cost of approximately $271 for each facility, or $58 million. This is equivalent to an annual cost of $5.5 million under each regulatory option. For FCTs and AHFDSs, we assume these costs are subsumed in the management costs for these systems (see Appendix A for details).

EPA estimates that the final UST regulation will impose capital costs on the following components due to earlier detection of problems as a result of the new testing requirements:

- Overfill prevention equipment;
- Spill prevention equipment;
- Interstitial areas; and

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replacing certain equipment and is required to replace that equipment when the final UST regulation becomes effective, he or she incurs a lower incremental cost than an owner or operator who only recently installed that equipment. By not attempting to adjust for this factor, EPA assumes that owners and operators replace brand new equipment, a conservatism that results in a higher cost. Using this approach, these annualized one-time costs comprise approximately 10 percent of annual costs under the Selected Option, approximately six percent of annual costs under Alternative 1, and approximately nine percent of annual costs under Alternative 2.

[51] There is significant uncertainty regarding whether total expenditures would increase or decrease over time. More frequent inspections may lead to more frequent repairs and replacements but may also reduce the severity and cost of the problems discovered.

- ATGs, interstitial monitors, vapor monitors, groundwater monitors, and line leak detectors.

The final UST regulation requires testing, in addition to inspections, for several UST system components. EPA assumes that testing adds value to baseline release prevention strategies in two ways: first, testing detects issues with an UST system that may not be detectable in inspections. Second, in some cases, testing will occur more frequently than baseline inspections and therefore may identify issues that occur between inspections. This analysis therefore considers two types of increased capital costs. First, EPA assumes that additional testing required under the final UST regulation will identify malfunctions that prior inspections would have overlooked, and will therefore mandate additional, incremental compliance costs related to equipment repair and replacement. Second, some baseline compliance costs will occur earlier than they would in the baseline, creating time value of money costs as owners and operators incur compliance costs earlier and forgo the use of such funds for other investments. The time value of money cost of incurring a repair sooner is estimated at seven percent, consistent with OMB's guidance on discount rate. The use of a seven percent discount rate for these time value of money costs maintains consistency with the discount rates used for other cost and benefit calculations presented in this RIA, including amortization of capital costs and discounting costs associated with regulatory requirements with delayed implementations. For comparison, Chapter 7 presents results for the Selected Option using a three percent discount rate. See Appendix D for the detailed cost methodology.

The cost estimation methodology in this RIA focuses exclusively on the compliance costs incurred to comply with the regulatory requirements of the final regulation. This differs from the benefit estimation methodology (see Chapter 4), where benefits are monetized based on an estimated number of avoided releases, and the avoided remediation costs associated with those releases.

3.2.2 Estimation of System-Level Compliance Costs for UST Systems

Estimates of system-level compliance costs for each part of the final UST regulation are based on publicly available data on equipment, installation, and testing costs, information collected from professionals in industries that provide relevant equipment and services, and EPA's professional judgment.[52] Costs are estimated to occur according to the regulation implementation schedule identified in **Exhibit 1-2**; we use an annual discount rate of seven percent to adjust costs with compliance windows of more than one year.

Labor costs used in this analysis reflect labor-hour estimates from EPA Information Collection Request 1360.08 and EPA Information Collection Request 1360.12 for specific inspection and recordkeeping tasks. The cost of labor is based on Bureau of Labor Statistics (BLS) labor rates for skill categories appropriate to the retail sector and technical requirements of

[52] E^2, Incorporated. Memoranda and analyses submitted under Contract EP-W-05-018, "U.S. Environmental Protection Agency. Underground Storage Tanks/Leaking Underground Storage Tanks Analytical and Technical Support." Where gaps existed in the analyses, EPA used the best professional judgment of its UST system technical experts. All supporting materials not included in the appendices can be found in Docket EPA-HQ-UST-2011-0301.

the final UST regulation.[53] In particular, EPA selected labor rates that correspond to categories of labor employed in the retail motor fuels sector (NAICS 447). EPA does not expect regulated entities to employ higher skilled workers to comply with this regulation.

The analysis adjusts these rates using a 12 percent overhead factor and a fringe benefits factor of 28.8 percent, which is specific to service-providing industries.[54] For requirements that are likely to be satisfied by third-parties, such as testing, labor costs are included in the market prices (costs) of those services.

A broad explanation of the functionality of the compliance cost estimation model is provided below:

- First, for each regulatory requirement of the rule, the model identifies the number of UST systems are affected. Systems are affected if they have the proper technical components affected by the requirement (seen in **Exhibit 2-4**) *and* are located within a state where compliance with this requirement is not already part of the regulatory baseline (seen in **Exhibit 2-5**). To the extent that UST systems are located in states whose regulatory baselines are in partial compliance with the rule, the cost model makes an appropriate adjustment such that the correct set of incremental costs are applied.

- Then, the cost model derives a set of unit costs for compliance with each regulatory requirement. These costs include labor costs as well as O&M (equipment) costs, and are broken down by one-time costs that are amortized versus annually-occurring costs. As described on page 3-2, some costs apply at the UST-system level, and others apply at the broader facility level (a facility may have more than one UST system). These costs can be seen in **Exhibit 3-1**.

- To estimate costs, the model then applies unit costs for each regulatory requirement to each applicable system. In some cases, the unit costs in **Exhibit 3-1** for a given regulatory requirement are simply applied to the set of affected systems or facilities for that requirement in **Exhibit 2-5**. However, in many cases, state regulatory baselines interact with the regulation's requirements in complex ways, such that this methodology must be adjusted. For example, UST facilities in states that require semiannual walkthrough inspections under their regulatory baselines incur lower costs than UST facilities in states that currently require no walkthrough inspections; the compliance cost model tracks these cases and applies the appropriate incremental cost as necessary.[55]

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[53] Labor rates reflect: U.S. Bureau of Labor Statistics. "Occupational Employment and Wages." May 2011. See Appendix D for the particular Standard Occupational Classification codes used. EPA does not use the costs in its Information Collection Request 1360.08 because those labor rates reflect all industries and do not represent typical costs to the majority of UST owners and operators.

[54] The overhead factor of 12 percent comes from: U.S. Office of Management and Budget. Circular No. A-76. p. D-7. Although this rate reflects government overhead rates, we believe it is also representative of the low-overhead structure of the retail motor fuels sector. The fringe benefits factor is from: U.S. Bureau of Labor Statistics. "Employer Costs for Employee Compensation." December 2012. See Table 10: All workers, service-providing industries.

[55] For additional information on the derivation of the affected universe for each regulatory requirement, see Appendix B. Similarly, Appendix D contains derivations of the unit costs for each regulatory requirement, as well as

Doc. No. 35GL-20-2341.

While the regulation's impacts are not significant enough ($1 billion per year) to require a quantitative assessment of uncertainty, the RIA considers the uncertainty associated with key variables. However, the regulatory requirements modeled in this RIA generally do not lend themselves to a probabilistic assessment of uncertainty because most requirements consist of a task, such as an inspection or test, that has an established cost and must be performed according to a given schedule. Correspondingly, the system is not subject to broad uncertainty related to options for compliance. Moreover, the regulation requires that each such task be performed with a given frequency. Probabilistic uncertainty analyses, which best apply in cases where one of multiple outcomes may occur with a different probability weight for each outcome, do not directly apply to the requirements of this regulation.

To the extent that certain aspects of the cost estimation methodology are uncertain, this RIA includes various sensitivity analyses to address these:

- Input cost uncertainties are addressed by the analysis of alternative labor rates (**Exhibit 3-6**);

- Universe uncertainties, especially regarding the interaction between the uncertainty in which systems contain certain UST system components and which systems are located in states that do not currently require testing/inspection of those components, are addressed by the analysis of compliance cost scenarios (**Exhibit 3-7**); and

- Uncertainties regarding the potential of the rule to result in small business impacts are addressed via a "worst-case scenario" sensitivity analysis where the smallest (i.e., least-revenue) firms are assumed to be located in the states with the least-rigorous state regulatory baselines (i.e., thus incurring the highest incremental costs) (Section 5.2.3).

Because of the deterministic nature of the regulation in requiring each UST system meeting a given criterion to perform a certain task or undergo a certain inspection, probabilistic assessments of uncertainty are not directly applicable.

In addition, specific requirements under the final UST regulation are addressed as follows:

- For regulatory changes that take effect over time as equipment ages, the analysis assumes a constant rate of equipment replacement, and calculates a constant annual payment for the net present value of 20 years of replacement. Appendix D discusses the specific assumptions made in the analysis.

- To identify the total system-level compliance cost of removing deferrals from airport hydrant fuel distribution systems (AHFDSs) and field-constructed tanks

broader descriptions of how the compliance cost model handles labor costs, time value of money costs, and other items of specific relevance to cost estimation for this regulation.

(FCTs), the analysis calculates both the direct costs of removing the deferral of these systems from the regulation under 40 CFR Part 280, and the additional costs of complying with other new regulatory options that apply to all systems (and become relevant when deferrals are removed). For example, under the final UST regulation, owners and operators of these systems must perform annual bulk line testing at prescribed rates or use an automatic tank gauge at prescribed leak rates. Appendix A discusses specific assumptions related to these tank populations.

- To estimate the total system-level compliance cost of removing the deferral from emergency generator tanks, the analysis calculates the cost of complying with specific changes that apply to the broader universe of conventional UST systems and become relevant when the deferral is removed. Removal of the deferral under the final UST regulation means that EGTs must comply with release detection requirements at 40 CFR Part 280, Subpart D.

Exhibit 3-1 presents the unit-level costs for the individual requirements in the final UST regulation.[56]

[56] See Appendix D for a detailed discussion of these costs.

Exhibit 3-1

Unit Costs For The Requirements In The Final UST regulation (Selected Option)[a]

	ONE-TIME [b] ($)	O&M [c] ($)	REPAIR/REPLACEMENT COST [d] ($)
Release Prevention			
Walkthrough inspections	$0.00	$16.99	$0.14
Overfill prevention equipment inspections	$0.00	$228.91	$67.07
Spill prevention equipment tests	$0.00	$138.38	$37.53
Containment sump testing	$0.00	$669.32	$86.97
Spill prevention equipment inspection after repair	$0.00	$363.42	$0.00
Overfill prevention equipment test after repair	$0.00	$400.71	$0.00
Secondary containment test after repair	$0.00	$188.23	$0.00
Eliminate flow restrictors in vent lines for all new tanks and when overfill prevention equipment is replaced	$420.37	$0.00	$0.00
Release Detection			
Operability tests – ATG	$0.00	$61.41	$9.40
Operability tests – interstitial monitoring	$0.00	$10.83	$9.73
Operability tests – electronic LLDs	$0.00	$61.41	< $0.01
Operability tests – vapor monitoring	$0.00	$10.83	$1.20
Operability tests – groundwater monitoring	$0.00	$10.83	$0.62
Site assessment – vapor monitoring [e]	$1,111.17	$0.00	$0.00
Site assessment – groundwater monitoring [e]	$935.56	$0.00	$0.00
Add SIR/CITLD to regulation with performance criteria	$10.66	$0.00	$0.00
Response to interstitial monitoring alarms[f]	$0.00	$0.00	$0.00
Remove release detection deferral for emergency generator tanks [g]	$296.94	$193.41	
Other			
Remove deferral for airport hydrant fuel distribution systems [h]	$128,828.95		
Remove deferral for UST systems with field-constructed tanks [h]	$30,744.57		
Require notification of ownership change	$0.00	$14.27	$0.00
Closure of lined tanks that cannot be repaired according to a code of practice	$41,802.90[i]	$0.00	$0.00
Requirements for demonstrating compatibility with fuels > E10 and > B20	$1.93 [j]	$0.00 [j]	$0.00
Cost to owners/operators to read regulation	$271.12	$0.00	$0.00
EPAct-related Provisions			
Operator training	$303.64	$139.36	$0.00
Secondary containment - new and replaced tanks	$8,413.90	$0.00	$0.00
Threshold for pipe replacement rather than repair [k]	$0.00	$0.00	$0.00
Under-dispenser containment for all new dispensers	$1,914.27	$0.00	$0.00

[a] Cost estimates were derived using a seven percent discount rate.

[b] One-time costs presented here are not shown in annual terms. For the purposes of estimating total annual costs for the final UST regulation, these one-time expenditures are annualized over 20 years at a seven percent interest rate.

Exhibit 3-1

Unit Costs For The Requirements In The Final UST regulation (Selected Option)[a]

[c] Operation and maintenance costs presented here are not shown in annual terms, but rather on per-incident terms. In other words, the cost for walkthrough inspections above is the unit cost per walkthrough inspection; the annual cost is the total cost conducting 30-day walkthrough inspections over an annual period.

[d] Time value of money costs due to earlier repair and replacement of equipment reflect costs of repair or replacement sooner than would have occurred in the baseline. For most requirements, these are costs that would occur and be identified by annual tests, i.e., they reflect one year's worth of accumulated issues that require equipment repairs or replacements. Three requirements represent exceptions. TVM costs for overfill prevention and containment sump testing, which occur every three years under the Selected Option, represent the repairs and replacements over three years. In addition, TVM costs for walkthrough inspections represent the repairs and replacements identified on a monthly basis to match the requirement under the Selected Option. See Appendix D for additional details.

[e] The one-time cost presented is the cost of conducting a site assessment or well verification, weighted by the relatively likelihoods that a site assessment or well verification would be necessary to continue using vapor or groundwater monitoring as release detection. Note that a site assessment or well verification would be necessary for fewer than 25 percent of systems using vapor monitoring, and for fewer than 30 percent of systems using groundwater monitoring; the one-time costs presented here do not downward adjust the unit cost estimate to account for the possibility that a site assessment or well verification may not be necessary.

[f] The cost associated with this requirement would be the incremental cost difference between a tightness test (required in the baseline) and an interstitial integrity test (required by the final UST regulation). However, because the cost of an interstitial integrity test is less than the cost of a tightness test, we do not assign any cost to this requirement. See Appendix D for additional information.

[g] Because different subsets of EGTs are subject to different requirements, we present average unit costs that divide the total cost to the affected universe by the total number of affected units. O&M costs include any TVM costs associated with operability tests. See Appendix D for additional details.

[h] Because different subsets of AHFDSs are subject to different requirements, and because different requirements applicable to AHFDSs and FCTs include various types of one-time and O&M costs, we present average unit costs that divide the total cost to the affected universe by the total number of affected units. These costs include any TVM costs associated with operability tests. See Appendix A for additional details.

[i] We assume that this cost occurs in full for the systems that require closure of lined tanks in a given year, rather than annualizing it as described in note b above. See Appendix D for additional details.

[j] This includes an annualized cost of $0.01 related to the cost of storing records for the life of the UST system.

[k] We assume all facilities exceeding the 50 percent threshold for piping replacement would opt to replace piping in the baseline; costs are therefore zero. See Appendix C for detailed calculations.

3.3 Calculation of Incremental Compliance Costs

This analysis estimates the compliance cost of the final UST regulation by calculating the incremental cost of each regulatory change on the population of tank systems in every U.S. state and territory. This procedure relies on national estimates of the number of systems employing specific baseline technologies, as well as EPA's assessment of the baseline regulatory requirements in each state and territory.[57] The analysis categorizes compliance costs into one-time or operation and maintenance costs and amortizes one-time compliance costs over the 20-year regulatory time horizon.[58] As a final step, it discounts annual compliance costs associated with several of the regulatory changes to delayed compliance horizons specified in the final UST regulation (e.g., overfill prevention equipment inspections must be performed within three years of the date the final UST regulation becomes effective).

[57] For details regarding these assumptions, see Appendix B.

[58] See footnote 49 for an explanation of the use of a 20-year time horizon.

To calculate compliance costs, EPA employs a number of assumptions, some of which likely overstate compliance costs:

- **Time value of money costs.** This analysis does not assume the rate at which problems occur in UST systems will decline as a result of the final UST regulation. The number and severity of problems will likely fall due to more frequent testing and inspections, but the rate of decline is uncertain and the analysis does not attempt to adjust for these changes. This likely causes the analysis to overestimate the costs of the final UST regulation.

- **Size of universe.** EPA's analysis assumes that the number of UST systems in the universe remains constant over time, with new systems replacing closures. EPA's end-of-year reporting data reveal that the universe of conventional UST systems has declined at a rate between one and three percent per year since 2000.[59] Assuming this pattern continues, future annual compliance costs due to the final UST regulation are likely to be lower than estimated in this analysis. However, in absence of other data we assume new installations and upgrades will offset all closures, and annual compliance costs will remain constant. Impacts of assuming an alternative baseline universe of UST systems that declines over time are discussed in Sections 3.3.1 and 3.4.1.

- **Full compliance.** EPA assumes all owners and operators subject to each requirement will come into compliance. This ensures a high estimate of costs, as each system subject to the regulation implements the required measures and consequently incurs the related costs.

- **Timeliness of repairs.** EPA assumes all issues identified through testing of equipment will be properly addressed through immediate repair or replacement of equipment. This may overstate costs if owners or operators fail to address identified issues in a timely fashion.

- **Date on which costs are incurred.** EPA assumes all costs are incurred at the beginning of the year in which each requirement of the final UST regulation becomes effective. This may overstate costs that occur at the end of the time frame.

These combined assumptions help ensure that the total costs estimated in each scenario below are not likely to be understated, even in cases where some uncertainty is associated with unit cost estimates for equipment or testing. Two key areas of uncertainty that affect the distribution of costs are noted below.

- **Geographic distribution of technologies:** EPA lacks information on how UST systems with specific equipment (e.g., ATG) are distributed nationally. If most are located within states with existing applicable requirements, then costs could

[59] See: U.S. Environmental Protection Agency, Office of Underground Storage Tanks. *Semi-Annual Report of UST Performance Measures* for fiscal years 1999 and 2013.

be lower (conversely, if most are located in states with no existing applicable requirements, then costs could be higher). In the absence of this data, EPA assumes a uniform distribution of technologies across all states. EPA assesses the extent to which this assumption creates cost uncertainty at the end of this chapter.

- **Distribution of costs across systems:** EPA does not have information on how costs are likely to be distributed among the systems that are subject to new requirements. For example, a correlation among systems that require overfill prevention equipment inspections, spill prevention equipment testing, and secondary containment testing after repair would concentrate costs on these systems in ways that EPA's primary assessment of costs does not capture. While this does not affect total cost estimates, EPA assesses the distributional consequences of an outcome where costs are highly-concentrated in Chapter 5.

3.3.1. Calculation of Incremental Compliance Costs Using an Alternative Baseline

EPA's primary analysis assumes that the universe of UST systems stays constant over time. That is, the analysis assumes that when an UST system enters the universe, another exits, and vice versa. However, data show that the universe of UST systems has been declining over the past two decades (albeit at a slowing rate). Therefore, EPA also assesses compliance costs associated with the final UST regulation based on an alternative baseline that projects a declining universe.

To calculate the rate of universe decline, EPA mapped historical data on the universe of UST systems from 1991 through 2013 to an exponential one-phase decay function, which appears to most accurately represent the observed behavior of the UST system universe over time.[60] Steep declines in the universe of UST systems in past years reflect increases in tank size as well as industry consolidation. However, these declines may be reaching functional limits, both because the number of fuel outlets needed to serve the population is considerable, and because tank sizes may be reaching a practical limit in their ability to be transported and installed.[61,62]

The function used to project future UST universe sizes indicates that over a 20-year time period, the annual number of affected UST systems gradually declines to 574,045 UST systems

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[60] To estimate future UST universe sizes, we used a single exponential decay function, which assumes that a quantity declines at a rate proportional to its value. This is an appropriate function given the singular and slowing rate of decline observed in the universe of UST systems over time. The equation for such an exponential singular decay function is $Y = (Yo - P) * e^{(-k*X)} + P$, where P represents the "plateau," or limit of the function and k represents the function's half-life. (See Appendix J for additional details.)

[61] See: Geyer, Wayne. "Where Has Our Petroleum Storage Capacity Gone?" Steel Tank Institute. Accessed at: https://www.steeltank.com/LinkClick.aspx?fileticket=h8g9YO5y%2Bfl%3D&tabid=108&mid=502. This source indicates simultaneous trends in increasing average tank sizes as well as decreasing UST system totals.

[62] While this alternative baseline assumes a steady decline in the number of UST systems, it is possible that the number of UST systems may actually increase in the future to trend with population growth and economic expansion as more people living in more areas may necessitate more retail motor fuel outlets.

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by year 20 under this alternative baseline.[63] The number of UST systems affected under this alternative baseline is approximately 99.8 percent of the size of the original baseline, which assumes a constant universe size of 577,981 UST systems over this period. As a result, compliance costs associated with the final UST regulation are only marginally smaller under this alternative baseline. See Appendix J for additional details.

3.4 Results of Assessment of Compliance Costs

Exhibit 3-2 presents a summary of the estimated incremental compliance costs associated with the final UST regulation by type of UST system affected. In all options, it is clear that the category of conventional UST systems will bear the largest proportion of compliance costs under the regulation. While compliance costs associated with removal of deferrals from EGTs are constant across regulatory scenarios, other costs vary substantially among the regulatory options. The model parameters used to produce the results discussed in this chapter are presented in Appendix E and were selected to reflect the selected and alternative options described in Chapter 1.

Exhibit 3-2

Annual Compliance Costs Of The Final UST regulation For UST Systems Affected [a]

Option	Selected Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Conventional UST systems [b]	$130	$280	$63
Emergency Generator Tanks (EGTs)	$2.0	$2.3	$2.0
Airport Hydrant Fuel Distribution Systems (AHFDSs)	$10	$0.017	$0.0
UST systems with Field-Constructed Tanks (FCTs)	$11	$0.066	$0.0
Cost to Owners/Operators to Read Regulation (conventional UST systems and EGTs)	$5.5	$5.5	$5.5
Total	**$160**	**$290**	**$70**

[a] Cost estimates were derived using a seven percent discount rate.
[b] Conventional UST systems include all systems that are not AHFDSs, FCTs, or EGTs.

Exhibit 3-3 presents a disaggregation of compliance costs under each regulatory option. The following areas contribute significantly to the differences in compliance costs among the alternatives.

- **Release prevention**: The greatest difference in compliance costs between the Selected Option and Alternative 1 is related to release prevention; specifically, due to the combination of walkthrough inspections, overfill prevention equipment inspections, spill prevention equipment tests, and containment sump tests, testing after repairs, and the elimination of flow restrictors. These requirements account for 66 percent and 88 percent of compliance costs, respectively.[64] This variation is

[63] EPA assumes that owners and operators amortize all capital costs over a 20-year expected regulatory horizon to be consistent with the 20-year expected lifetime of an UST system.

[64] Total release prevention costs are approximately $99 million under the Selected Option and $247 million under Alternative 1. Respectively, these costs round to $100 million, or 63 percent of total Selected Option costs, and $250 million, or 86 percent of total Alternative 1 costs.

largely dependent on the testing or inspection frequency required under each alternative, as well as the fact that compliance costs for AHFDSs and FCTs are considerably lower in Alternative 1. Under Alternative 2, overfill prevention equipment inspections and containment sump tests are not required, and release prevention costs total $38 million, compared to roughly $100 million under the Selected Option.

- **Removal of deferrals for AHFDSs and UST systems with FCTs**: Removal of deferrals for AHFDSs and FCTs is accompanied by tightness testing of equipment under the Selected Option. This tightness test drives most of the compliance cost associated with these systems. Under the Selected Option, total costs for these systems are $21 million, or approximately 13 percent of compliance costs.[65] Under Alternative 1, only notification of the implementing agency and reporting of releases are required for these systems; correspondingly, total costs for these systems under Alternative 1 are below $0.1 million. Alternative 2 maintains the deferrals and therefore has no incremental compliance cost.

In total, these categories represent approximately 50 percent to 90 percent of the total compliance costs, depending on the option.

EPA determines average compliance costs per system by dividing the total cost of the final UST regulation by the total 577,981 systems in the regulated universe of conventional UST systems and EGTs. EPA's analysis shows that the compliance cost for this final UST regulation is approximately $232 per system, or approximately $715 per typical facility among motor fuel retailers, the sector with the highest average number of UST systems per facility.[66]

Exhibit 3-4 presents the same total costs as **Exhibit 3-3** but shows the number of systems affected and the cost of the requirement per affected system.[67] The costs in **Exhibit 3-4** reflect annualized one-time costs, discounting, and adjustments for the adoption of certain requirements over time (e.g., elimination of flow restrictors for new and replaced tanks), and therefore differ from the unit costs presented in **Exhibit 3-1**. It is important to note that the unit costs in **Exhibit 3-4** cannot be summed to obtain a cost per system, as nearly all systems are already in compliance with some requirements of the final UST regulation.

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[65] Specifically, costs associated with AHFDSs total $10.4 million under the Selected Option, while costs associated with FCTs total $10.6 million. Together, these costs total to a rounded sum of roughly $21 million, or 13 percent of total Selected Option costs.

[66] The $232 estimate excludes costs associated with removal of deferrals for AHFDSs and UST systems with FCTs, assumes 3.07 systems per retail motor fuel facility, and includes the annualized cost of $26 per facility for them to review the regulation. This approach does not address variability of baseline compliance across systems; to assess uncertainty associated with this approach, EPA presents a sensitivity analysis in Chapter 5.

[67] For exhibits that show the disaggregation of compliance costs under each regulatory option as well as systems affected, see Appendix D.

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Exhibit 3-3

Total Annual Compliance Costs Due To The Final UST regulation For UST Systems Affected
All values in $ thousands [a]

Description	Selected Option			Alternative 1			Alternative 2		
	Capital Cost (Annualized)	O&M	Total Cost	Capital Cost (Annualized)	O&M	Total Cost	Capital Cost (Annualized)	O&M	Total Cost
Release Prevention									
Walkthrough inspections	$0	$23,000	$23,000	$0	$53,000	$53,000	$0	$7,000	$7,000
Periodic testing/inspections of: - Overfill prevention equipment - Spill prevention equipment - Containment sumps	$0	$64,000	$64,000	$0	$180,000	$180,000	$0	$19,000	$19,000
Testing after repairs to spill and overfill prevention equipment, and secondary containment	$0	$12,000	$12,000	$0	$12,000	$12,000	$0	$12,000	$12,000
Elimination of flow restrictors in vent lines for all new tanks and when overfill prevention equipment is replaced	$2,500	$0	$2,500	$2,500	$0	$2,500	N/A	N/A	N/A
Subtotal – Release Prevention [b]	**$2,500**	**$99,000**	**$100,000**	**$2,500**	**$250,000**	**$250,000**	**$0**	**$38,000**	**$38,000**
Release Detection									
Operability tests for release detection methods (incl. groundwater and vapor monitoring)	$0	$21,000	$21,000	$0	$24,000	$24,000	$0	$21,000	$21,000
Groundwater and vapor monitoring for release detection [c]	$500	$0	$500	See note b	See note b	$1,000	$0	$0	$0
Add SIR/CITLD to regulation with performance criteria	$3	$0	$3	$3	$0	$3	$3	$0	$3

Exhibit 3-3

Total Annual Compliance Costs Due To The Final UST regulation For UST Systems Affected
All values in $ thousands [a]

Description	Selected Option			Alternative 1			Alternative 2		
	Capital Cost (Annualized)	O&M	Total Cost	Capital Cost (Annualized)	O&M	Total Cost	Capital Cost (Annualized)	O&M	Total Cost
Remove release detection deferral for emergency generator tanks [d]	$250	$1,700	$2,000	$290	$2,000	$2,300	$250	$1,700	$2,000
Response to interstitial monitoring alarms [e]	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal – Release Detection [b]	**$750**	**$23,000**	**$24,000**	**$290**	**$26,000**	**$27,000**	**$250**	**$23,000**	**$23,000**
Other									
Remove deferral for airport hydrant fuel distribution systems [f]	See note b	See note b	$10,000	See note b	See note b	$17	N/A		
Remove deferral for UST systems with field-constructed tanks [f]	See note b	See note b	$11,000	See note b	See note b	$66	N/A		
Require notification of ownership change	$0	$46	$46	$0	$46	$46	$0	$46	$46
Closure of lined tanks that cannot be repaired according to a code of practice [g]	$0	$2,400	$2,400	$0	$2,400	$2,400	$0	$2,400	$2,400
Requirements for demonstrating compatibility with fuels > E10 and > B20	< $0.1	$0	< $0.1	< $0.1	$1,100	$1,100	N/A	N/A	N/A
Cost to owners/operators to read regulation	$5,500	$0	$5,500	$5,500	$0	$5,500	$5,500	$0	$5,500
Subtotal – Other [b]	**$5,500**	**$2,400**	**$29,000**	**$5,500**	**$3,500**	**$9,100**	**$5,500**	**$2,400**	**$7,900**
EPAct-related Provisions									
Operator training	$23	$110	$130	$23	$110	$130	$23	$110	$130
Secondary containment	$980	$0	$980	$980	$0	$980	$980	$0	$980
Subtotal – EPAct-related Provisions [b]	**$1,000**	**$110**	**$1,100**	**$1,000**	**$110**	**$1,100**	**$1,000**	**$110**	**$1,100**
Subtotal [b]	**$9,800**	**$120,000**	**$160,000**	**$9,300**	**$280,000**	**$290,000**	**$6,700**	**$63,000**	**$70,000**

Exhibit 3-3

Total Annual Compliance Costs Due To The Final UST regulation For UST Systems Affected
All values in $ thousands [a]

Description	Selected Option			Alternative 1			Alternative 2		
	Capital Cost (Annualized)	O&M	Total Cost	Capital Cost (Annualized)	O&M	Total Cost	Capital Cost (Annualized)	O&M	Total Cost
Additions for new units (beyond those included above) [h]	$5	$0	$5	$5	$0	$5	$5	$0	$5
Total [b]	**$9,800**	**$120,000**	**$160,000**	**$9,300**	**$280,000**	**$290,000**	**$6,700**	**$63,000**	**$70,000**

[a] Cost estimates were derived using a seven percent discount rate.

[b] Totals may not add due to rounding. Costs associated with the removal of deferrals for FCTs and AHFDSs or groundwater and vapor monitoring for release detection under Alternative 1 are included in the total columns only.

[c] Costs under the Selected Option include the cost of conducting a site assessment or well verification, weighted by the probability that one of these is necessary, as a one-time cost. For Alternative 1, costs include a five-year phase out of groundwater and vapor monitoring as release detection methods. Capital and O&M costs are aggregated in this line item for Alternative 1 because this requirement was modeled separately from the other requirements. See Appendix D for details. For Alternative 2, costs include only the cost of operability tests for these types of release detection.

[d] Costs related to removal of deferrals for the regulation of emergency generator tanks include the cost of removal of deferrals, installation and maintenance of ATG on approximately seven percent of systems, installation and maintenance of SIR on 60 percent of systems, and performing operability tests on all EGT systems. See Appendix D for details.

[e] The cost associated with this requirement would be the incremental cost difference between a tightness test (required in the baseline) and an interstitial integrity test (required by the final UST regulation). However, because the cost of an interstitial integrity test is less than the cost of a tightness test, we do not assign any cost to this requirement. See Appendix D for additional information.

[f] Airport hydrant fuel distribution systems include a capital cost because tanks associated with airport hydrant fuel distribution systems without existing ATGs are assumed to install ATGs to comply with the requirement. Similarly, the DoE UST systems with field-constructed tanks include a capital costs because these tanks are assumed to install ATGs to comply with the requirement. UST systems with field-constructed tanks without existing ATGs are assumed to conduct annual precision tightness tests to comply with the requirement. Capital and O&M costs are aggregated in these line items because various components of the compliance with release detection include both capital and O&M costs. See Appendix A for details.

[g] Although the closure of lined tanks represents a capital cost, we consider it an operation and maintenance cost as a modeling convenience. See Appendix D for details.

[h] As a simplifying assumption, EPA assumes that UST systems enter and exit the universe at a constant annual rate, such that the total number of UST systems in the universe does not change. We assume that operation and maintenance costs associated with these systems offset each other, as the number of entries equals the number of exits; however, new systems entering the universe will still incur incremental capital costs associated with certain requirements (e.g., a new emergency generator tank would need to install a release detection method). For modeling purposes, we account for these new units in the "Additions for new units." The costs shown reflect the capital costs associated with new units for all but the following requirements: elimination of flow restrictors for new tanks, requirement of secondary containment for new tanks, and requirement of under-dispenser containment for new dispenser systems.

Exhibit 3-4

Discounted And Annualized Cost Per System Affected By Requirement [a]

Description [b]	Selected Option		Alternative 1		Alternative 2	
	Cost per System [c]	Systems Affected	Cost per System [c]	Systems Affected	Cost per System [c]	Systems Affected
Release Prevention						
Walkthrough inspections	$42	555,003	$96	555,003	$20	349,551
Periodic testing/inspections of: - Overfill prevention equipment - Spill prevention equipment - Containment sumps	$334	190,623[d]	$860	210,266[d]	$48	388,641[d]
Testing after repairs to spill and overfill prevention equipment, and secondary containment	$311	40,011	$311	40,011	$311	40,011
Eliminate flow restrictors in vent lines for all new tanks and when overfill prevention equipment is replaced	$40	63,818	$40	63,818	N/A	N/A
Release Detection						
Operability tests for release detection methods [d]	$126	165,492	$144	165,492	$126	165,492
Groundwater and vapor monitoring for release detection [e]	$59	25,475	$40	25,968	$19	25,475
Add SIR/CITLD to regulation with performance criteria	$1	2,756	$1	2,756	$1	2,756
Remove release detection deferral for emergency generator tanks [f]	$181	10,977	$207	10,977	$180	10,977
Response to interstitial monitoring alarms [h]	$0	10,634	$0	10,634	$0	10,634
Other						
Remove deferral from airport hydrant fuel distribution systems [g]	$128,829	81	$214	81	N/A	N/A
Remove deferral from UST systems with field-constructed tanks [g]	$30,745	346	$192	346	N/A	N/A
Require notification of ownership change	$5	8,726	$5	8,726	$5	8,726
Closure of lined tanks that cannot be repaired according to a code of practice	$41,803	57	$41,803	57	$41,803	57
Requirements for demonstrating compatibility with fuels > E10 and > B20	$0	234	$2	577,981	N/A	N/A
Cost to owners/operators to read regulation	$9	577,981	$9	577,981	$9	577,981
EPAct-related Provisions						
Operator training	$51	2,618	$51	2,618	$51	2,618
Secondary containment	$443	2,217[d]	$443	2,217[d]	$443	2,217[d]

[a] Cost estimates were derived using a seven percent discount rate.

[b] Requirements that apply at the facility level are converted to a system basis using a conversion factor of 2.71 systems per facility.

[c] Important: these unit costs cannot be summed to obtain a total cost per system because nearly all systems are already in compliance with some requirements of the final UST regulation.

[d] Because the number of systems affected varies depending on the individual testing requirements, we estimate the number of systems affected by all three requirements by dividing their total cost by the sum of their unit costs. For example, if the three requirements had total unit costs of $100 and created new costs of $100,000, we would estimate that they affect 1,000 systems.

[e] Costs under the Selected Option include the cost of operability tests for these types of release detection as the operation and maintenance cost, as well as the cost of conducting a site assessment or well verification, weighted by the probability that one of these is necessary, as a one-time cost. For Alternative 1, costs include a five-year phaseout of groundwater and vapor monitoring as release detection methods. For Alternative 2, costs include only the cost of operability tests for these types of release detection.

[f] Costs related to removal of deferrals for the regulation of emergency generator tanks include the cost of removal of deferrals, installation and maintenance of ATG on approximately seven percent of systems, installation and maintenance of SIR on 60 percent of systems, and performing operability tests on all EGT systems. See Appendix D for details. Costs for emergency generator tanks are lower in Alternative 2 because operability tests are performed every 3 years versus every year under other options.

[g] Because different subsets of AHFDSs are subject to different requirements, and because different requirements applicable to AHFDSs and FCTs include various types of one-time and O&M costs, we present average unit costs that divide the total cost to the affected universe by the total number of affected units. These costs include any TVM costs associated with operability tests. See Appendix A for additional details.

[h] The cost associated with this requirement would be the incremental cost difference between a tightness test (required in the baseline) and an interstitial integrity test (required by the final UST regulation). However, because the cost of an interstitial integrity test is less than the cost of a tightness test, we do not assign any cost to this requirement. See Appendix D for more information.

3.4.1 Assessment of Compliance Costs under the Alternative Baseline Scenario

Exhibit 3-5 presents total annual compliance costs of the final UST regulation under the alternative baseline discussed in Section 3.3.1. Annual compliance costs are slightly less than those presented in **Exhibit 3-2**, reflecting the fact that the cumulative universe of affected systems in the alternative baseline is only marginally smaller than the universe in the original baseline. However, as **Exhibit 3-5** shows, most cost reductions are within the rounding error of EPA's estimates for annual compliance costs of the regulation.

Exhibit 3-5

Annual Compliance Costs Of The Final UST regulation Using an Alternative Baseline For UST Systems Affected [a]

Option	Selected Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Conventional UST systems [b]	$130	$280	$62
Emergency Generator Tanks (EGTs)	$2.0	$2.3	$2.0
Airport Hydrant Fuel Distribution Systems (AHFDSs)	$10	$0.017	$0.0
UST systems with Field-Constructed Tanks (FCTs)	$11	$0.066	$0.0
Cost to owners/operators to read regulation	$5.4	$5.4	$5.4
Total [c]	**$160**	**$290**	**$70**

[a] Cost estimates were derived using a seven percent discount rate.
[b] Conventional UST systems include all systems that are not AHFDSs, FCTs, or EGTs.
[c] Totals may not add exactly due to rounding.

3.5 Sensitivity Analyses

Certain aspects of EPA's compliance cost estimates are characterized by significant uncertainty and are sufficiently large that deviations from chosen assumptions may have a measurable impact on cost estimates. In this section, the analysis evaluates the sensitivity of certain results to variation in key parameters. These sensitivity analyses include evaluations of:

- Total compliance costs to the final UST regulation under an alternative estimate of labor costs. Specifically, the analysis evaluates the effect of using higher labor rates, overhead costs, and fringe benefits factors, and lower average labor costs.

- Highest and lowest compliance cost scenarios for the distribution of technologies for overfill prevention equipment inspections, spill prevention equipment tests, and containment sumps tests. If facilities using these technologies are disproportionately located in states that do not already have similar regulations in place, costs could be higher than estimates presented in the earlier parts of this chapter. Similarly, if affected facilities are located in states that already have similar regulations in place, costs could be substantially lower than estimated.

3.5.1. Compliance Costs of the Final UST regulation Using Alternative Estimates of Labor Rates, Overhead Costs, and Fringe Benefits

For conventional UST facilities, EPA has selected labor, overhead, and fringe benefits rates that best reflect a "typical" UST facility. These labor rates are representative of skilled

labor costs at motor fuel retailers, which own and operate roughly 80 percent of the universe of UST systems. The use of these rates has a material impact on the estimated compliance cost of the final UST regulation because they drive the operation and maintenance costs associated with requirements for walkthrough inspections and operability tests.

To evaluate the impact of alternative labor rates on total compliance cost estimates, EPA considered two alternative scenarios. The first scenario is consistent with the OUST Information Collection Request 1360.12 and reflects labor rates reflective of economy-wide average wages, benefits, and overhead. This represents a high-end estimate because it also includes industries with highly skilled labor requirements and benefits (e.g., law firms).[68]

The second scenario uses specific labor categories and costs representative of retail motor fuel establishments, but assumes that lower-level staff may complete walkthrough inspections.

Exhibit 3-6 presents the results for the three labor category scenarios. While one-time costs are not affected by the change in labor rates, operation and maintenance costs in the high-cost scenario are roughly $40 million higher than EPA's primary estimate, totaling $200 million rather than $160 million (an increase of 25 percent). The majority of this increase is due to higher operation and maintenance costs related to walkthrough inspections and operability tests. In contrast, the low-end labor-rate cost estimate totals approximately $140 million, roughly $20 million (or 13 percent) lower than EPA's central estimate. In addition to lower benefits and labor rates, this low-end estimate assumes that clerical-level personnel will perform walkthrough inspections. For AHFDSs and systems with FCTs, EPA uses constant industry average labor rates across all scenarios.[69]

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[68] These labor categories were reported in U.S. Environmental Protection Agency. Information Collection Request Number 1360.12. February 2011. We used revised labor rates from those categories to reflect 2012 conditions. However, documentation in this analysis did not provide a reason for the use of economy-wide average labor rates, and our assessment of the universe suggests that retail-based rates are more appropriate.

[69] This sensitivity analysis examines only the cost of obtaining labor with the skill sets needed to comply with the regulations. While it is possible that an owner/operator may opt to hire more highly-skilled workers to provide a range of skills beyond what is required for compliance, the broad availability of lower-priced labor and professional services in the market to achieve compliance render this unnecessary for compliance with the rule. Therefore, any acquisition of higher-skilled labor would represent a business decision that incorporates consideration of other factors not related to direct compliance, and is therefore not a cost imposed by the rule. While it may be beneficial for businesses to obtain workers with additional skills to improve their operations, EPA considers only the potential uncertainty of the cost of labor required to perform the required tasks under the rule. In other words, the alternate labor rates sensitivity analyses do not examine whether higher or lower labor rates include the acquisition or procurement or staff with different skill levels; rather, this sensitivity analysis assumes that staff skills are held constant at the level required for compliance with the rule, and that the uncertainty lies within the price at which these staff are available.

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Exhibit 3-6

Compliance Cost Sensitivity Analysis: Alternative Labor Rates [a]

Description	Final UST regulation		
	Lower Estimate ($ thousands) [b]	Primary Estimate used for Analysis ($ thousands) [c]	Upper Estimate ($ thousands) [d]
Release Prevention			
Walkthrough inspections [e]	$11,000	$23,000	$45,000
Periodic testing/inspections of: - Overfill prevention equipment - Spill prevention equipment - Containment sumps	$63,000	$64,000	$64,000
Testing after repairs to spill and overfill prevention equipment, and secondary containment	$12,000	$12,000	$12,000
Elimination of flow restrictors in vent lines for all new tanks and when overfill prevention equipment is replaced	$2,500	$2,500	$2,500
Subtotal - Release Prevention [i]	**$89,000**	**$100,000**	**$120,000**
Release Detection			
Operability tests for release detection methods (incl. groundwater and vapor monitoring)	$20,000	$21,000	$35,000
Groundwater and vapor monitoring for release detection [f]	$500	$500	$500
Add SIR/CITLD to regulation with performance criteria	$3	$3	$3
Remove release detection deferral for emergency generator tanks	$1,900	$2,000	$2,700
Response to interstitial monitoring alarms [g]	$0	$0	$0
Subtotal - Release Detection [i]	**$22,000**	**$24,000**	**$38,000**
Other			
Remove deferral for airport hydrant fuel distribution systems [h]	$10,000	$10,000	$10,000
Remove deferral for UST systems with field-constructed tanks [h]	$11,000	$11,000	$11,000
Require notification of ownership change	$20	$46	$74
Closure of lined tanks that cannot be repaired according to a code of practice	$2,400	$2,400	$2,400
Requirements for demonstrating compatibility with fuels > E10 and > B20	< $0.1	< $0.1	< $0.1
Cost to owners/operators to read regulation	$2,400	$5,500	$8,900
Subtotal – Other [i]	**$26,000**	**$29,000**	**$32,000**
EPAct-related Provisions			
Operator training	$120	$130	$190
Secondary containment	$980	$980	$980
Subtotal - EPAct-related Provisions [i]	**$1,100**	**$1,100**	**$1,200**
Subtotal [i]	**$140,000**	**$160,000**	**$200,000**
Additions for new units (beyond those included above) [j]	$5	$5	$5
Total [i]	**$140,000**	**$160,000**	**$200,000**

Exhibit 3-6

Compliance Cost Sensitivity Analysis: Alternative Labor Rates [a]

[a] Cost estimates were derived using a seven percent discount rate.

[b] Lower Estimate relies on BLS Industry-Specific Occupational Employment and Wages, NAICS 447000 - Gasoline Stations, May 2011 for: Managerial (41-1011 First-Line Supervisors/Managers of Retail Sales Workers): Technical (53-1021 First-Line Supervisors/Managers of Helpers, Laborers, and Material Movers, Hand); Clerical (53-6031 Service Station Attendants); and BLS National Occupational Employment and Wages, May 2011 for Technical for operability tests (49-2094 Electrical and Electronics Repairers, Commercial and Industrial Equipment) and Legal (23-1011 Lawyers). Benefits rate is 25.1 percent of wages, as reported in BLS Employer Costs for Employee Compensation, December 2012. Table 10: Trade, transportation, and utilities - retail trade. Overhead rate is 12 percent from: U.S. Office of Management and Budget. Circular No. A-76. p. D-7. Assumes that service station attendants perform walkthrough inspections.

[c] Primary Estimate relies on BLS Industry-Specific Occupational Employment and Wages, NAICS 447000 - Gasoline Stations, May 2011 for: Managerial (11-0000 Management Occupations (Major Group)); and Clerical (43-9061 Office Clerks, General); and BLS National Occupational Employment and Wages, May 2011 for Technical for operability tests (49-2094 Electrical and Electronics Repairers, Commercial and Industrial Equipment); Technical (53-1021 First-Line Supervisors/Managers of Helpers, Laborers, and Material Movers, Hand); and Legal (23-1011 Lawyers). Benefits rate is 28.8 percent (BLS Employer Costs for Employee Compensation, December 2012. Table 10: All workers, service-providing industries). Overhead rate is 12 percent from: U.S. Office of Management and Budget. Circular No. A-76. p. D-7.

[d] Upper Estimate relies on BLS Employer Costs For Employee Compensation, December 2012 for Managerial (Table 9, Management, Professional, and Related); Technical and Technical for operability tests (Table 10, Professional and Technical Services (Service Industries)); and Clerical (Table 11, Office and Administrative Support); and BLS National Occupational Employment and Wages, May 2011 for Legal (23-1011 Lawyers). Benefits rate is 28.8 percent (BLS Employer Costs for Employee Compensation, December 2012. Table 10: All workers, service-providing industries). Overhead rate is 12 percent from: U.S. Office of Management and Budget. Circular No. A-76. p. D-7.

[e] Walkthrough inspections under the Lower Estimate rely on clerical labor rates estimated using BLS Standard Occupational Code 53-6031, Service Station Attendants; under other scenarios, we use technical labor rates estimated using BLS Standard Occupational Code 53-1021, First-Line Supervisors/Managers of Helpers, Laborers, and Material Movers, Hand.

[f] Costs under the Selected Option consist of the cost of conducting a site assessment or well verification, weighted by the probability that one of these is necessary, as a one-time cost.

[g] The cost associated with this requirement would be the incremental cost difference between a tightness test (required in the baseline) and an interstitial integrity test (required by the final UST regulation). However, because the cost of an interstitial integrity test is less than the cost of a tightness test, we do not assign any cost to this requirement. See Appendix D for additional information.

[h] The labor rate used for these types of systems, where they are DoD-owned, is the latest ICR labor rate (similar to the upper estimate rate), except for a component of the Operator Training requirement, which uses the United States Air Force labor rate for pay grade E-6 over 3. For AHFDSs located at commercial airports, the labor rates used originate from BLS National Occupational Employment and Wages, May 2011 for NAICS 481100 (Scheduled Air Transportation) for Legal (23-1011), Managerial (11-000), Technical (53-0000), and Clerical (43-000), except for a component of the Operator Training Requirement, which uses the hourly rate for a Fuel Distribution System Worker from December 2012, according to USAjobs.gov.

[i] Totals may not add exactly due to rounding.

[j] As a simplifying assumption, EPA assumes that UST systems enter and exit the universe at a constant annual rate, such that the total number of UST systems in the universe does not change. We assume that operation and maintenance costs associated with these systems offset each other, as the number of entries equals the number of exits; however, new systems entering the universe will still incur incremental capital costs associated with certain requirements (e.g., a new emergency generator tank would need to install a release detection method). For modeling purposes, we account for these new units in the "Additions for new units." The costs shown reflect the capital costs associated with new units for all but the following requirements: elimination of flow restrictors for new tanks, requirement of secondary containment for new tanks, and requirement of under-dispenser containment for new dispenser systems.

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3.5.2 Sensitivity Analysis of Distribution of Technologies for Overfill Prevention Equipment Inspections, Spill Prevention Equipment Testing, and Containment Sump Testing

Because data on the distribution of UST technologies (including release detection and prevention technologies) is available only at a national level, EPA is not able to identify how facilities and systems with certain technologies are distributed across different states. As a result, the cost analysis assumes that technologies are distributed uniformly across all states and territories. For systems that require overfill prevention equipment inspections, spill prevention equipment tests, and containment sump tests, actual compliance costs may differ substantially from EPA's estimates if this assumption does not hold. For example, if facilities using these technologies are disproportionately located in states that do not already have similar inspection/testing requirements in place in the baseline, compliance costs could be higher than the estimates based on a uniform distribution presented in **Exhibit 3-2** and **Exhibit 3-3**. Similarly, if affected facilities are concentrated in states that already have similar regulations in place in the baseline, then actual compliance costs could be substantially lower than estimates based on a uniform distribution.

To investigate the impact of the assumption of uniform distribution of technologies, EPA performed a bounding analysis of the two extreme cases of distribution. **Exhibit 3-7** reports the possible range of values for three scenarios: one where compliance cost is the lowest (i.e., facilities are located in states that already satisfy the final UST regulation), the actual model scenario based on uniform distribution of technologies, and the scenario in which compliance costs are highest. Variation between the minimum and maximum cost scenarios totals approximately $30 million, or approximately 20 percent of the total compliance costs estimated for the regulation. EPA's primary estimate of these costs is near the mid-point of the range of estimates.

Exhibit 3-7

Discounted Highest And Lowest Compliance Cost Scenarios For Technologies For Overfill Prevention Equipment Inspections, Spill Prevention Equipment Tests, And Containment Sump Tests[a]

Regulatory change	Lower ($ millions)	Primary ($ millions)	Upper ($ millions)
Overfill prevention equipment inspections [b]	$29	$29	$29
Spill prevention equipment testing	$17	$19	$25
Containment sump testing	$0	$17	$22
Total [c]	**$45**	**$64**	**$75**

[a] Cost estimates were derived using a seven percent discount rate.
[b] Because the entire universe of systems will be required to perform overfill prevention equipment inspections, EPA does not expect any uncertainty related to the locations of affected systems.
[c] Totals may not sum due to rounding.

3.5.3 Summary of Sensitivity Findings

EPA's sensitivity findings suggest that possible variation in labor rates is likely to produce the most significant impact on the estimated cost of the final UST regulation: plausible

selections for labor rates may reduce selected option costs by approximately $20 million (13 percent) or increase them by $40 million (25 percent). Separately, EPA has identified potential variation of approximately 20 percent related to the distribution of technologies involved in overfill prevention equipment inspections, containment sump testing, and spill prevention equipment testing. We note that each of these sensitivity analyses reflects variation compared with the primary estimates of costs presented throughout this chapter.

The estimates presented in the body of this chapter represent reasonable, conservative central tendencies for the costs of the final UST regulation.

3.6 State Government Administrative Compliance Costs

In addition to compliance costs related to the operation of UST systems, the final UST regulation will also impose new UST program administration requirements on state government agencies.[70] Specifically, state government agencies will incur costs associated with new notification requirements, and costs associated with obtaining and reading the regulation. This section reviews state government costs associated with these activities.

Costs associated with obtaining and reading the regulation assume that 10 people will each take six hours to read the regulation in each state (using the legal labor rate for states of $47 per hour from OUST's ICR 1360.08 inflated to 2012 dollars). In addition, based on the ICR, we assume that the reporting and recordkeeping burden for states to apply for State Program Approval (SPA) is approximately 28.5 hours (using the clerical labor rate for states of $26 per hour inflated to 2012 dollars). The total compliance cost in nominal terms is therefore approximately $219,000; the annualized compliance cost assuming the 20-year regulatory time horizon is approximately $21,000.[71]

State agencies that do not currently have a requirement for notification of changes in UST ownership or for at least an annual UST registration must also process a certain number of notices due to annual turnover in facility ownership. State government compliance costs for this activity assume a typical nominal recordkeeping cost of $32 per facility, based on OUST's ICR 1360.08 inflated to 2012 dollars; compliance costs assume the use of existing recordkeeping systems. Eight states and territories do not currently have recordkeeping requirements consistent with the final UST regulation.[72] These eight states and territories will incur approximately $100,000 per year, due to an annual turnover rate of approximately 10 percent in UST facility ownership.

Lastly, each state agency will incur costs to process the one-time notifications of existence for AHFDSs and FCTs. State government compliance costs for this activity assume a

[70] In some cases, UST systems are directly owned or operated by local, state, and federal government entities. These costs are subsumed in the estimates of compliance costs presented earlier in this chapter.

[71] Consistent with other parts of this regulatory impact analysis, we amortize one-time or capital costs over the regulatory time horizon of 20 years. If these costs are phased in over a three-year period, annual costs decrease to approximately $19,000.

[72] These states are Arizona, Georgia, Idaho, North Carolina, North Dakota, Nevada, and South Carolina. The Virgin Islands will also incur these costs.

typical nominal recordkeeping cost of $32 per facility, based on OUST's ICR 1360.08 inflated to 2012 dollars; compliance costs assume the use of existing recordkeeping systems. Based on the estimated universe of AHFDSs and FCTs, the total state processing cost in nominal terms is approximately $14,000; the annualized processing cost assuming the 20-year regulatory time horizon is approximately $1,300.

Total annualized state government administrative compliance costs sum to $120,000 per year. Note that under alternative baseline assumptions, these costs would decline by a very small percentage (less than one percent) as the universe of affected systems declines.

3.7 Summary – Total Annual Compliance Costs

In total, EPA estimates that the Selected Option for the final UST regulation will produce incremental costs of approximately $160 million per year compared to the current regulatory baseline. **Exhibit 3-8** summarizes these costs per category. Regardless of the option, conventional UST systems will incur over 80 percent of these costs. Costs to AHFDSs and FCTs comprise approximately 14 percent and 0.03 percent of total costs under the Selected Option and Alternative 1, respectively.

Exhibit 3-8

Total Annual Compliance Costs [a,b]

Category	Selected Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Conventional UST systems [c]	$130	$280	$63
Emergency Generator Tanks (EGTs)	$2.0	$2.3	$2.0
Airport Hydrant Fuels Distribution Systems (AHFDSs)	$10	$0.017	$0.0
UST systems with Field-Constructed Tanks (FCTs)	$11	$0.066	$0.0
Cost to Owners/Operators to Read Regulation	$5.5	$5.5	$5.5
State Government Administrative Costs [d]	$0.12	$0.12	$0.12
Total Annual Compliance Costs [e]	**$160**	**$290**	**$70**

[a] Cost estimates were derived using a seven percent discount rate.
[b] Compliance costs include direct compliance costs and state oversight costs. For this regulatory impact analysis, direct compliance costs and state oversight costs provide a reasonable proxy to assess the final UST regulation's social costs. See Chapter 3.1 for further discussion.
[c] Conventional UST systems include all systems that are not AHFDSs, FCTs, or EGTs.
[d] The costs for UST systems directly owned or operated by local, state, and federal government entities are included in the estimates of compliance costs within the other categories. Costs shown here reflect the administrative costs for state governments to read the regulation, apply for state program approval, process notifications of ownership changes, and process one-time notifications of EGT, AHFDS, and FCT existence.
[e] Totals may not add up due to rounding.

Under the alternative baseline universe assumption described in Section 3.3.1, EPA estimates that the Selected Option for the final UST regulation will produce incremental compliance costs of approximately $155 million per year compared to $156 million in annual costs in the primary analysis; the results of both the primary and alternative scenario round to $160 million in total annual social costs. Under Alternative 1, the alternative baseline universe assumption yields an estimate of approximately $286 million per year in incremental compliance costs, compared to $287 million in the primary analysis; the results in both the primary and

alternative scenarios round to $290 million in total annual social costs. Similarly, under Alternative 2, total annual social costs are approximately $70 million in both the alternative baseline scenario and the primary analysis.

Limitations of Compliance Cost Analysis

While EPA has taken steps to present a sound analysis of compliance costs, it recognizes that certain assumptions and limitations are inherent to this assessment.

Tank configuration: This analysis assumes that a particular configuration of equipment represents the average UST system. This assumption affects the compliance costs of the final UST regulation because systems with different configurations (e.g., more sumps per tank) could have different costs. Mischaracterizing this configuration may under- or overstate total costs as well as system-level costs.

System-level compliance costs: As discussed in Section 3.3, system-level compliance costs are based on public information, input from UST industry professionals, and EPA professional judgment, all of which are assumed to provide the most accurate available data at the time of this regulatory action. EPA recognizes that these data sometimes reflect only a small number of sources, and are therefore characterized by uncertainty.

As a result of these uncertainties, the precise cost of the final UST regulation may differ from the estimate generated by EPA's analysis. The above sensitivity analyses, though not strictly additive, suggest that the outside range of cost uncertainty is less than 35 percent from EPA's central estimates.[73] Moreover, because EPA's estimate is framed by a number of conservative assumptions (outlined in section 3.3), it is unlikely that this analysis understates the costs of the final UST regulation significantly.

[73] The alternative labor rates sensitivity analysis in **Exhibit 3-6** indicates that compliance costs may decrease by up to $20 million or increase by up to $40 million, depending on the set of labor rates specified. This reflects a range spanning from a total decrease of up to 13 percent ($20 million / $160 million) to a total increase of up to 25 percent ($40 million / $160 million). In addition, the technology distribution sensitivity analysis in **Exhibit 3-7** indicates that compliance costs may be overstated by up to $19 million, or understated by up to $11 million. This reflects a range spanning from a total decrease of up to 12 percent ($19 million / $160 million) to a total increase of up to seven percent ($11 million / $160 million). Combining these ranges yields a total outside range of cost uncertainty of less than 35 percent around EPA's central estimates: a potential total decrease of 25 percent (13 percent + 12 percent) to a potential total increase of 32 percent (25 percent + seven percent).

Chapter 4. Assessment of Cost Savings and Benefits

4.1 Introduction

The beneficial impacts of a regulatory change are typically measured in one of two ways: as "social benefits" or as avoided costs. Social benefits usually take the form of reduced environmental damage, reduced human health risk, and improvements in the value of environmental amenities. Benefits also include avoided costs associated with reduced need for cleanup and avoided costs of "averting behavior" (e.g., obtaining replacement water supplies). Ideally, social benefits reflect accurate measures of the total "willingness to pay" (WTP) of consumers to obtain improvements in environmental quality. In other cases, avoided costs (e.g., medical care) can be used to inform proxy estimates of WTP when direct estimates of WTP are unavailable. In the context of this regulation, EPA considers the avoided costs associated with reduced need for remediation (cleanup) of releases because avoided costs represent a real economic cost savings, and because reliable WTP estimates for the value of an avoided cleanup are not available. While avoided costs, or cost savings, could be subtracted from total costs and reported in Chapter 3, they do not typically accrue to the same parties that incur compliance costs. Therefore, for clarity of presentation, we examine them with other benefits and beneficial impacts in this chapter.

This chapter describes the approaches used to evaluate avoided remediation costs and other benefits. It first outlines several different methods attempted for measuring benefits and cost savings in the context of the proposed regulation, and describes the final selected method (expert consultation) in detail. Next, it provides a description of monetized cost savings, including avoided cleanup costs, avoided vapor damage cleanup estimates, and avoided product loss associated with anticipated reductions in releases and reductions in severity of releases. The chapter then presents a screening-level analysis of the quantity of groundwater potentially protected by the regulation. Finally, we provide a qualitative discussion of ecological, human health, and other social benefits.

4.2 Investigation of Empirical Methods for Measuring Cost Savings

The cost savings of the final UST regulation result from the reduced incidence and size of releases that would occur due to the new requirements. EPA examined a number of ways to use quantitative, empirical data on release rates, inspection effectiveness, and program performance to directly estimate the changes in releases that could be expected under the final UST regulation. This section describes the different data sources and methods considered, and the limitations of each.

4.2.1 Engineering Estimates and Literature

One approach to estimating the benefits of this regulation would be to develop an engineering model of the release rates associated with equipment and practices before and after the implementation of the regulation requirements. However, this approach would address only a small number of the final UST regulation components because most of the requirements are not focused on equipment modifications, but instead call for inspections, testing, and maintenance.

These are requirements for changes in human behavior, and are not easily measured using equipment testing.

This suggests that EPA could best measure benefits empirically by examining studies of how release rates change in response to more frequent inspection and testing. Therefore, in the context of the proposed regulation, EPA conducted a targeted review of engineering literature and studies on the effectiveness of testing and inspection programs. While we were unable to identify any studies directly applicable to the proposed UST regulation, we did identify several studies that examined the effects of better inspection and testing rates more generally. We summarize three key studies below.

- **California study of impact of secondary containment on UST system releases (2002):**[74] This study examined whether use of secondary containment throughout UST systems resulted in differences in release rates. The study's conclusions were hampered by a limited sample size, and authors note that releases from other parts of the systems may have affected results. The study did not find a significant relationship between secondary containment and release rates at sites, but did find that facility-level factors (e.g., improper installations) made it more likely than expected that all systems at a facility would either have or lack releases. While the study cannot be used to directly estimate the benefits associated with the proposed or final UST regulation, its conclusions suggest that regulations focusing on effective facility-level inspections may be well-targeted.

- **National Research Council study of effectiveness of state vehicle emissions inspection and maintenance programs (2001):**[75] This study reviewed four state programs and one city program aimed at reducing motor vehicle emissions by requiring inspections and maintenance. While the study did not address UST systems, the structure of vehicle inspection programs is similar to the UST regulation in that both require owners/operators to undertake routine inspections and perform maintenance as needed. The study found that the programs had a measureable impact on ambient air quality, but did not identify whether the differences were statistically significant.[76] The results do not provide a quantitative basis for estimating the impacts of the final UST regulation, but the study suggests that mandatory inspection programs can reduce emissions.

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[74] Young, Thomas M. and Randy D. Golding. Underground Storage Tank Field-Based Research Project Report. Submitted to the California State Water Resources Control Board under contract to the University of California, Davis. May 31, 2002.

[75] Committee on Vehicle Emission Inspection and Maintenance Programs. *Evaluating Vehicle Emissions Inspection and Maintenance Programs.* National Academy Press, 2001.

[76] The study also concluded that the programs had more modest impacts than those predicted by air quality modeling, but this finding is of limited relevance to the current regulation, since no ambient conditions modeling has been conducted.

- **Environmental Results Program (ERP) data:**[77] Data from several environmental results programs (ERPs) show a statistically significant improvement in verified compliance as a result of a combination of self-certification, technical assistance, and inspections. While these programs do not isolate the impact of specific regulatory changes, the results are consistent with other findings that programs that rely in part on self-implemented inspections and reporting can reduce noncompliance.

In general, the literature does not address UST inspection programs directly, and does not provide quantitative results that can be used to estimate the impacts of the final UST regulation. However, the literature does provide data that generally indicate that self-implementing inspection programs (with external validation) do have an impact on equipment maintenance, and generally lead to a reduction in environmental impacts. This suggests that some positive impact should be expected from the final UST regulation.[78]

4.2.2 Statistical Analysis of State Release Data

A different approach to a robust analysis of benefits would be to develop a database of state UST regulations and reported release rates before and after the effective dates of regulations similar to the final UST regulation. With good quality data, it is possible to combine these regulations and reported release rates, and isolate the marginal impacts of various components of the final UST regulation. To collect detailed data at the facility level, however, would require visiting state UST programs individually and collecting detailed site inspection data from state case files and archives. Not only would such an effort be prohibitive in terms of available resources, but our current knowledge of the state programs suggests that variable inspection practices and changes in record-keeping practices over time may limit the ability of the exercise to provide robust results.

In the absence of site-specific data, however, we collected and examined data on state regulatory programs and reported releases from available aggregate sources at the time of the proposed regulation. Specifically, we identified and evaluated data from the following sources:

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[77] See: Vermont Department of Environmental Conservation. "Final Report – Environmental Results Project – Vermont: Underground Storage Tank Facilities." March 17, 2010; Rhode Island Department of Environmental Management. Underground Storage Tank Environmental Results Program, Final Report, Tables I-IV; U.S. Environmental Protection Agency. "Evaluation of Three Environmental Results Programs (ERPs)." August 31, 2009; and U.S. Environmental Protection Agency. "ERP States Produce Results." December 2007.

[78] EPA conducted an updated targeted literature review in October and November 2013 to determine whether additional studies examining the impacts of testing and inspection programs on environmental outcomes had been published. The conclusions of these additional studies are consistent with those described in this section. Additional studies reviewed include: Yin, H. "The environmental and economic impacts of environmental regulations: The case of underground storage tank regulations." January 1, 2006; and Musgrave, M. "The Illinois Underground Storage Tank Fund: Tanks for Nothing," *Politics & Policy* 41(5): 765-787. October 2013. The additional studies reviewed did not directly comment on specific outcomes, in terms of environmental impacts, from UST inspection programs, but did discuss the effects of risk-based insurance and financial assurance programs, which require a degree of regular inspection and maintenance, on avoiding leaks from USTs.

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- **Leak Autopsy Reports:** In 2004 and 2005, EPA released two draft "leak autopsy" studies ("the draft 23-state Autopsy Report" and a separate study examining the State of Florida). These studies examined the sources and extent of releases that occurred in systems that were compliant with the 1998 standards, and identifies the extent to which different baseline releases are associated with failures of equipment in different parts of the UST system (e.g., piping, overfill protection equipment).[79]

- **State Regulatory and Report Data**: State programs are required to report aggregated information to EPA on the number of active UST systems, the number of inspections, and the number of confirmed releases reported in each six-month period.[80] In addition, EPA obtained information about state regulatory programs and the effective dates for state requirements that are similar to the requirements of the proposed regulation.

Using the available data, EPA examined several different statistical approaches, focusing on regression analysis, to compile and examine a set of state-level data that included the number of UST systems in each state in a given year, the number of releases from UST systems in each year, the number of UST inspections conducted in each year, and the presence or absence of regulations designed to prevent releases.

Before conducting regression analysis on the data set of state USTs and releases, EPA first adjusted the data to account for a number of data quality concerns. Of particular concern was the relationship between states with low-frequency inspections and states reporting small numbers of confirmed releases. To ensure that the reported UST releases accurately reflected most or all releases taking place, EPA developed an index that scored each state based on the frequency of inspections. States that reported inspection rates less frequent than every five years, and/or inconsistent inspection frequencies over time, were removed from the sample, based on the assumption that release data from those states may be less reliable due to less frequent third party verification (i.e., state inspection) of system operations. In other words, we assume that owners/operators may be less inclined to report releases or properly maintain their equipment if they are in a state where inspections occur infrequently or inconsistently.

In conducting the analysis, however, EPA identified several fundamental problems with the available data, further limiting the value of a regression analysis approach. These include significant data availability and reliability issues related to the limited number of observations and programmatic changes among states that prevent the isolation of regulation-related impacts. Specifically:

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[79] U.S. Environmental Protection Agency, Office of Underground Storage Tanks. "Evaluation of Releases from New and Upgraded Underground Storage Tank Systems (peer review draft)." August 2004; and U.S. Environmental Protection Agency, Office of Underground Storage Tanks. "Petroleum Releases at Underground Storage Tank Facilities in Florida." March 2005.

[80] Data can be accessed at: http://www.epa.gov/oust/cat/camar chv.htm.

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- **Consistent, accurate release data are not available.** It is likely that measurement error exists in the recording of confirmed releases across states (the dependent variable) and that it is related in some systematic way to the regulatory structure of the state or other explanatory variables (as opposed to random reporting error) in the analysis. In addition, state inspections vary in timing and focus across states; this, in turn, affects the consistency of third-party verified compliance and release information. While EPA attempted to account for this by selecting only states with a high frequency of inspections for inclusion in the analysis, the interaction between inspection frequency and degree and effectiveness of regulation creates sample selection problems (i.e., states with higher release rates due to limited regulation may also be states that do not conduct frequent inspections and therefore have less reliable data).[81] Therefore, normal regression properties do not hold, and results may be biased in ways that do not allow for a reliable interpretation.[82]

- **Many regulations consistent with the proposed UST regulation are currently in place in only a small number of states.** EPA addressed limited variation in the presence of regulations by dropping several regulatory variables from the analysis, but the resulting lack of variation and the small number of observations make it likely that regulatory indicators will proxy for other relevant characteristics of that state.

- **Study design is limited by available data.** Ideally, an analysis of the effectiveness of UST leak prevention regulations would employ observations from a large number of states over a time period that includes years before and after regulations were in place. Such "panel" data would allow for identification of impacts temporally and spatially. Panel data would also allow for fixed-effects estimation, which controls for any unobserved characteristics of states that might affect release rates (such as soil pH or climate), independent of any effect of regulation. Available data superficially appear to be panel data, since they provide information on the number or rate of releases from different states in multiple time periods, along with information on the presence or absence of UST regulations by state. However, for many regulations it is unclear both when the regulation was first promulgated and when the effects of the regulation would be expected to be fully realized (e.g., through inspections).

As discussed in more detail in Appendix F, quantitative analysis of annual UST releases by state did not reveal a consistent measure of the potential impact of release prevention regulations. The data limitations noted above prevented the use of the preferred method of fixed effects estimation using panel data. In the absence of fixed-effects estimation, the analysis cannot

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[81] As noted above, the only reliable approach to identify the relationship between inspection frequency, compliance, and number of releases would require a large-scale data collection effort. In absence of this, we use inspection frequency as an indicator of reliable data.

[82] For example, several regressions found an apparent *positive*, statistically significant relationship between secondary containment requirements and the number of releases per year. However, empirical data from Florida indicate that secondary containment contributes to release reductions of as much as 50 percent.

reliably draw conclusions about the impacts of regulations on releases, independent of any unmeasured characteristics of states that could be affecting the number of releases in each state. In other words, in addition to data quality issues discussed above, the small number of states with specific UST release prevention regulations prevents identification of robust relationships between individual regulations and the number of releases per year.

However, through cross-sectional analysis, EPA was able to estimate that release rates in California and Florida – two states with mature UST regulation regimes – were about 55-65 percent less than one would expect based on release rates at other states during the time period examined. This difference could serve as an upper bound for the potential of leak prevention regulations to reduce the rate of UST releases.[83]

4.3 Final Methodology for Assessment of Positive Impacts: Expert Consultation

In the absence of applicable engineering models and limited empirical state data, we resorted to a consultation with four experts with experience in regulation of USTs and implementation of state inspection programs to estimate the individual effects of each regulatory change. The remainder of this chapter describes in detail the final methodology used to identify reductions in releases associated with the final UST regulation, and the calculation of cost savings associated with those avoided releases.

For the proposed regulation, to ensure that the assessment of regulatory effects relied on broad expertise in regulatory implementation, EPA developed a pool of technical experts with national reputations for leadership in implementation of underground storage tank regulatory programs, or with extensive expertise in assessing spill causation at UST sites. From this pool, several experts were interviewed and five experts were identified. Each of these identified experts has over 20 years of experience in the regulation, assessment, and/or remediation of underground storage tanks, including direction of state programs and implementation of regulations similar to some aspects of the proposed regulation. One of the five experts did not provide input consistent with EPA's analytical methods, and as a result his quantitative estimates were not usable for the evaluation of the proposed regulation.[84] As a result, for the final UST regulation, EPA consulted the remaining four experts to evaluate avoided costs.

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[83] Exhibit 6 in Appendix F shows the degree to which the actual number of releases in Florida and California in 2009, 2005, and from 2002 to 2006 is less than the number of releases that would be expected based on the release rates observed at other states. In 2005 and 2009, the years in which the dummy variable for California was statistically significant from zero, California had between 56 and 63 percent fewer releases than would be expected based on the regression analysis. In 2002-2006, when the period in which the dummy variable for Florida was statistically significant from zero, Florida had between 60 and 65 percent fewer releases than would be expected. EPA strongly cautions against generalizing these results beyond the states included in the analysis. However, these numbers do suggest an upper bound of potential avoided leaks associated with the operation of the mature, relatively stringent programs in both California and Florida.

[84] This expert's baseline estimate of releases was not consistent with EPA's, and he was not able to provide information on how to extrapolate to EPA's universe. In addition, his responses included apparent internal inconsistencies that could not be reconciled without collecting more information about baseline releases. The expert also provided clear opinions about the optimal regulatory structure and suggested that his answers were not reliable unless the regulatory language was amended to include specific technical requirements. This created additional uncertainty in the interpretation of his results.

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EPA provided an identical set of written questions separately to each expert and conducted individual follow-up telephone interviews to clarify and verify responses. Appendix G provides a detailed explanation of the process EPA followed in identifying experts, more detailed information about the qualifications of the experts, the questions distributed to experts, and an explanation of the factors EPA considered when including and excluding expert feedback. Appendix H provides the experts' responses to EPA's questions.

Avoided Costs as a Measure of Beneficial Impacts

Avoided remediation costs represent the key beneficial impacts associated with the regulations. Avoided remediation costs represent cost savings that accrue to owners, operators and public entities charged with remediating releases at regulated facilities.[85] While avoided remediation costs are not a direct measure of total willingness to pay for environmental improvements, and are therefore not equivalent to social benefits, they represent real cost savings due to reduced demand for baseline remediation.[86]

Calculation of Annual Positive Impacts

The analysis presents the positive effects of the final UST regulation as a constant, recurring, annual value for analytical convenience. The timing of the positive impacts of the regulation is uncertain for several reasons:

- As shown in **Exhibit 1-2** in Chapter 1, the regulatory changes do not take effect simultaneously.
- Irrespective of when they take effect, the changes may require varying lengths of time to achieve full effect.
- EPA relies on its reported confirmed releases to calculate the reductions due to the final UST regulation. Confirmed releases recorded in a particular evaluation year vary significantly in severity and length of time undetected, which introduces variability in the extent to which costs are avoided each year.
- The final UST regulation includes activities such as: frequent inspections and equipment testing to prevent, identify and address releases; near-term shifts in technology; and long-term changes in technology. Each class of changes necessarily focuses on release avoidance and mitigation over different time horizons.

In the absence of detailed data characterizing releases by age and type, EPA assumes that implementation of the final UST regulation will have a uniform annual impact, with beneficial impacts realized on the last day of the year in which costs are incurred (i.e., a one-year delay). For equipment that is phased in over a period of time, we assume that positive impacts accrue at

[85] Chapter 5 provides a more detailed discussion on the potential positive effect of the final UST regulation on state financial assurance funds.

[86] Economists commonly define social benefits as the sum of individuals' willingness to pay to obtain a good or service or avoid an unwanted outcome. Avoided remediation costs may not equal willingness to pay.

the same rate as installation and adjust those impacts so that they are constant over time, maintaining the one-year delay.[87]

4.3.1 Avoided Remediation Costs

This section explains how EPA arrives at its estimates of avoided remediation costs.[88] EPA first explains how it calculates avoided remediation costs based on the source of a release. This is followed by a discussion of the methods used to calculate the number of releases avoided and the number of releases for which severity is mitigated. Finally, the two elements are combined to estimate the total avoided remediation cost due to the final UST regulation.

4.3.2 Calculating Avoided Remediation Costs

This analysis values avoided releases according to their cost of remediation. EPA developed average remediation costs for the four general release size categories reported in the draft 23-state Autopsy Report. The four categories generally conform with classification conventions used by state LUST offices, and the autopsy reports presented leak frequency data for different UST system components for each of the categories. The four categories include:

- Local site extent with soil contamination;
- Local site extent with water contamination;[89]
- Large site extent with soil contamination; and
- Large site extent with water contamination.[90]

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[87] Although remediation costs at a specific site may vary widely across years (if they extend past a year), available data do not support characterization of a typical cost stream that could be applied to each site. For example, some sites may require immediate and expensive response actions, while other sites may require multi-year remediation with a long initial planning phase. We do not have any national or state-level data that could be used to characterize an "average" cost stream: a review of available state-by-state and national level data under Contract Number EP-W-07-011, Work Assignment 3-42 indicated that site-by-site data do not contain payment stream information, and furthermore, due to a multitude of factors influencing time-to-closure or remediation duration at a given site (e.g., groundwater contamination, MTBE contamination, eligibility for state funding, state priority ranking for site, etc.), an "average" cost stream cannot be effectively generalized. As a result, this analysis calculates an average annual cost based on total site remediation cost. Thus, benefits associated with avoided remediation are expressed in annual terms. See Appendix I for detailed explanation of the methodology used to develop remediation cost estimates.

[88] We refer to avoided cleanup costs and avoided remediation costs interchangeably throughout this document.

[89] Water contamination refers to both groundwater and surface water contamination, though groundwater contamination is more common than surface water contamination.

[90] While no specific definition exists for a large site, the LUST Autopsy survey instruments used by the states generally define large sites as those with contamination that extends beyond the extent of construction excavation. In addition, EPA classified sites with off-site contamination as large sites.

EPA obtained remediation costs aligned with each of these size categories from a survey of state LUST offices and calculated average expected remediation costs for each of the release categories outlined in the draft 23-state Autopsy Report (**Exhibit 4-1**).[91] Remediation costs associated with groundwater remediation are generally higher than costs for soil remediation. Administrative, response, and oversight costs were provided by New Hampshire, and remediation costs reflect an average of the costs provided by New Hampshire and Utah.[92,93]

Exhibit 4-1

Remediation Costs By Release Extent[a, b]

Remediation Cost Category	Site Size And Contamination Type			
	Small extent, soil only	**Large extent, soil only**	**Small extent, Groundwater Contamination**	**Large extent, Groundwater Contamination**
Typical administrative cost (public notification, fines, fees, etc)[c]	$0	$0	$500	$3,700
Typical response cost (e.g., alerting and sending personnel, assessments and planning, immediate actions to stop the release)[c]	$10,000	$10,000	$10,000	$10,000
Typical remediation cost[d]	$14,800	$103,000	$98,500	$409,500
Typical oversight cost (e.g., monitoring)[c]	$500	$1,000	$1,500	$5,000
Total typical cost per LUST category	**$25,300**	**$114,000**	**$110,500**	**$428,200**

Notes:

[a] Costs shown are one-time costs associated with a site remediation and have been rounded to the nearest hundred dollars.

[b] Costs are presented here in 2008 dollars. EPA inflates these costs to 2012 dollars for use in the analysis.

[c] The costs presented for administrative, response, and oversight costs are based on New Hampshire data only.

[d] The remediation costs shown represent the average costs from data provided by New Hampshire and Utah. Although New Mexico also reported costs, we excluded it for two reasons. First, groundwater cleanup cost estimates from New Mexico are much higher than those for other states ($2.5 million compared with $0.6 million or less for other states) but the state did not provide data on the number or type of sites that resulted in this high estimate of costs. Second, New Mexico has a relatively small number of UST systems (3,773 UST systems as of fiscal year 2013). As a result, New Mexico's costs may be atypical and could skew results to overstate avoided costs.

Sources:

1. New Hampshire Department of Environmental Services, Underground Storage Tank Program, November 18, 2008.
2. Utah Department of Environmental Quality, Underground Storage Tank Program, November 18, 2008.

[91] U.S. Environmental Protection Agency Office of Underground Storage Tanks, "Evaluation of Releases from New and Upgraded Underground Storage Tank Systems," draft, August 2004.

[92] To develop an avoided cleanup cost estimate, EPA collected data from Montana, New Hampshire, New Mexico, South Carolina, Utah, and Virginia, all of which use state financial assurance funds to pay for LUST remediation. Each state UST program office received a questionnaire requesting data on typical cleanup costs broken out by the four general release types; New Hampshire, New Mexico, South Carolina, Utah and Virginia provided responses. New Hampshire provided the most comprehensive set of information, including cleanup costs by category (i.e., administrative, response, remediation, and oversight), while New Mexico and Utah could only provide estimates of remediation costs. Virginia and South Carolina were unable to provide the detail required for this analysis, as neither state was able to break out costs by the extent of release (i.e., large or small).

[93] New Mexico data are excluded from the calculation for two reasons. First, large-extent groundwater cleanup cost estimates from New Mexico are much higher than those for other states ($2.5 million compared with $0.6 million or less for other states) but the state did not provide data on the number or type of sites that resulted in this high estimate of costs. Second, New Mexico has a relatively small number of UST systems (3,773 UST systems as of fiscal year 2013). As a result, we believe that New Mexico may be atypical and could skew results to overstate avoided costs. We therefore do not include its results among the average avoided costs of remediation.

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EPA then used the average cost data from states to develop weighted average costs associated with remediation of releases from different portions of the UST system, based on release frequency data for each source. **Exhibit 4-2** presents, for each of the release sources identified in the draft 23-state Autopsy Report, the probability of a release by LUST category.[94] Using the cost data from **Exhibit 4-1**, inflated to 2012 dollars, EPA estimates a weighted average avoided cost per release size by multiplying the cost per site by the probability of each release type. These are summed across the categories to obtain the weighted average cost by release source.[95, 96] The following section describes how this information is used to generate an estimate of incremental avoided costs.

[94] U.S. Environmental Protection Agency, Office of Underground Storage Tanks. "Evaluation of Releases from New and Upgraded Underground Storage Tank Systems (peer review draft)." August 2004. Release probabilities were calculated using data for 580 spill events collected from 23 states during the development of EPA's Autopsy report effort. Specifically, Figures 3, 16, 17, and 18 in the Autopsy Report provide data on the percent of releases by source, by extent, and by media affected for each extent (local or large). By multiplying the percent of total releases from a given source (e.g., piping), the percent of those releases affecting a given media type (e.g., soil), and the percent of releases affecting that medium that are of a given extent (e.g., local soil), EPA is able to generate the probability distributions in Exhibit 4-2. Note that these sources include California and Florida releases, and may therefore be skewed slightly if those more stringent and established programs have smaller releases. We are unable to adjust the data to correct for this, but its impact, if any, would likely be to reduce the average size and cost of baseline releases slightly, leading to an understatement of regulation-related cost savings.

[95] For more information on this approach and the draft 23-state Autopsy report, see: Industrial Economics, Inc. "Methodology to Estimate Avoided Costs Associated with a Typical UST Leak." October 27, 2008.

[96] If we calculate a weighted-average cost per release where sources are weighted proportionally by their contribution to total releases, we obtain an overall average cost per release of approximately $152,000 in 2012 dollars (See Appendix I for details). This is generally consistent with ASTSWMO's annual average cost estimate for site remediation of roughly $124,000 in 2012. ASTSWMO's average site remediation value may understate typical remediation costs because co-pays, deductibles, and other costs not paid by state funds are excluded. Additionally, because the ASTSWMO estimates depend on expenditures in a given year, these estimates tend to vary substantially over time. See: Association of State and Territorial Solid Waste Management Officials. *State Fund Survey Results 2012.*

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Exhibit 4-2

Probability And Weighted Average Of Avoided Costs Per Release Source And Extent

Release Source (as identified in 23-state Autopsy Report)		Small extent, soil only	Small extent, groundwater contamination	Large extent, soil only	Large extent, groundwater contamination	Total/ Weighted Average
Piping	Probability	40.5%	22.0%	4.5%	33.0%	100.0%
	Cost	$10,900	$25,900	$5,500	$150,700	$193,000
Dispenser	Probability	71.6%	9.7%	5.4%	13.3%	100.0%
	Cost	$19,300	$11,400	$6,600	$60,900	$98,100
Tank	Probability	30.7%	17.7%	17.3%	34.3%	100.0%
	Cost	$8,300	$20,800	$21,000	$156,700	$206,800
STP Area	Probability	50.0%	31.0%	0.0%	19.0%	100.0%
	Cost	$13,500	$36,500	$0	$86,800	$136,700
Delivery Problems	Probability	59.2%	16.8%	1.8%	22.2%	100.0%
	Cost	$15,900	$19,800	$2,200	$101,500	$139,400

Note: Costs shown have been rounded to the nearest hundred dollars. Costs have been inflated to 2012 dollars.
Sources:
1. U.S. EPA, *Evaluation of Releases from New and Upgraded Underground Storage Tanks* (Draft). 2004. ("23-state Autopsy Report")
2. New Hampshire Department of Environmental Services, Underground Storage Tank Program, November 18, 2008.
3. Utah Department of Environmental Quality, Underground Storage Tank Program, November 18, 2008.

4.4 Establishing Avoided Releases

To estimate the number of baseline releases that would be either avoided completely or reduced in severity as a result of the final UST regulation, experts responded to a common set of questions about potential impacts of the regulatory changes under consideration and participated in subsequent individual discussions of specific areas of uncertainty.

Each expert reviewed the requirements under consideration for the final UST regulation and estimated how they would affect the following dimensions of releases:[97]

1. Changes in total frequency (number) of annual confirmed releases;

2. Changes in the number of remaining releases that reach groundwater; and/or

3. Changes in the average quantity released among remaining releases.

Experts had the option of expressing reductions in release severity in terms of the percent reaching groundwater or volume (quantity) of product, depending on how they typically collected and reviewed release data. In addition, experts were given the option of expressing these changes either: 1) as a total national estimate that accounted for variation in existing regulation and technology among states and facilities, or 2) as a change applied to a specific

[97] EPA did not provide experts with information about the universe of facilities or costs associated with remediation; experts did, however, have access to information about the number of confirmed releases in 2008, 2011, and 2012 and their distribution across different parts of the UST system (e.g., tanks, pipes, and STP areas). EPA uses confirmed releases as the baseline estimate of total releases because high quality data on total releases are not available, and release confirmation triggers the remediation costs that would be avoided.

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subset of the tank universe (e.g., 10 percent change among tanks with a certain technology that are not currently regulated).

Experts also estimated the sensitivity of results to changes in the frequency of regulatory requirements (e.g., the impact of inspections occurring at different intervals, consistent with different regulatory options) and noted synergies or dependencies between requirements, such as:

- Dependency between equipment upgrades and walkthrough inspections: Experts consistently noted that simply replacing equipment with newer technologies (e.g., requiring that new systems have secondary containment) is insufficient for preventing all releases. Regular visual inspections are necessary to identify potential problems and ensure timely maintenance when a release has not yet occurred.

- Synergy between equipment maintenance and walkthrough inspections: Experts noted that the combination of operability tests and visual (walkthrough) inspections would result in more avoided releases by identifying equipment problems quickly and ensuring effective maintenance.

- Dependency between operator training and walkthrough inspections: Experts noted that training alone is not adequate to ensure effective site maintenance, and walkthrough inspection requirements are not effective without trained staff.

Experts provided separate estimates of impacts for each regulatory requirement. EPA then used these requirement-specific estimates to calculate total avoided costs for the final UST regulation.[98] It is important to note, however, that when considering relationships among regulatory requirements, experts differed in how they isolated and/or "allocated" impacts across specific requirements because the allocation of impacts across different regulatory requirements could potentially be interpreted in several ways (e.g., one expert might decide that inspections drove all impacts, while another might decide that testing was the primary factor). EPA therefore avoids emphasis on the requirement-specific estimates provided by each expert, and considers their results in total.[99]

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[98] Experts were also asked to provide an estimate of the "total cumulative impact" for the final UST regulation in aggregate. This general estimate was used only to verify that the experts' logic was internally consistent, and to identify areas of overlap or synergy among the regulatory requirements. Because of adjustments required to align expert responses with the combination of regulatory requirements ultimately selected for the final UST regulation (e.g., using experts' sensitivity responses for tanks on tribal lands rather than their responses for tanks overall), we are unable to assess the magnitude of overlap or synergy. However, the fact that the average of the experts' cumulative estimates is higher than the average of their requirement-specific totals indicates that they do not believe there is significant overlap among requirements. As a result, benefits are unlikely to be overstated due to overlap.

[99] Note that EPA carefully examined and reviewed each requirement-specific estimate from each expert, and verified the results and assumptions with each expert, particularly in cases where results reflect a wide range. For detailed information on expert responses, see Appendix H.

In general, EPA applies the estimates presented by the experts to the number of affected units. In cases where reductions involved a range of values, EPA selected the midpoint of the range of values identified by each expert. Where experts' comments reflect qualitative assumptions that substantially affect their quantitative estimates, the analysis acknowledges those factors as caveats to estimated rates of release avoidance. If these assumptions assume regulatory language more stringent or significantly different than the final language, the analysis does not include any benefits for that requirement.[100]

To calculate the number of releases completely avoided as a result of potential regulatory changes, EPA combines the estimated reductions as identified by experts with a release distribution based on data from the draft 23-state Autopsy Report (see Appendix I for more detail). To estimate changes in release severity, the analysis uses the distribution of releases from the same report to quantify the number of groundwater releases avoided due to reduced release volume. **Exhibit 4-3** provides a summary of our findings with respect to avoided releases. Experts' responses suggest that the Selected Option will avoid approximately nine percent to 50 percent of 6,128 annual releases, or roughly 560 to 3,000 releases in the first evaluation year. In addition, as summarized in **Exhibit 4-4**, of the remaining releases, approximately 210 to 900 releases would be reduced in severity (i.e., these releases would occur but instead of reaching groundwater they would remain soil contamination only).[101]

Exhibit 4-3

Avoided Releases

Expert	Selected Option	Alternative 1	Alternative 2
Expert 1	1,100	1,600	590
Expert 2	560	690	170
Expert 3	1,600	2,400	1,200
Expert 4	3,000	3,700	2,200
Average *(Range)*	**1,600** *(560-3,000)*	**2,100** *(690-3,700)*	**1,000** *(170-2,200)*

Note: See Appendices H and I for inputs and methods for calculating these values. Estimates were validated with experts to ensure they accurately capture their opinions.

[100] For example, Experts 1, 2, and 3 attributed reductions to the groundwater and vapor monitoring site assessment requirements; however, these experts also noted that they assumed the requirements would lead users to switch to another leak detection method. Because EPA's cost analysis does not assume that users will necessarily switch methods, we conservatively removed the experts' assumed reductions for this requirement.

[101] EPA assumes that these groundwater releases will instead become soil releases. Hypothetically, if releases are proportionally split as 50 percent groundwater and 50 percent soil before the regulation takes effect, and if the regulation reduces groundwater contamination by 20 percent, releases would be split 40 percent groundwater and 60 percent soil after the regulation.

Exhibit 4-4 **Avoided Groundwater Contamination Incidents**			
Expert	**Selected Option**	**Alternative 1**	**Alternative 2**
Expert 1	900	1,100	620
Expert 2	210	460	88
Expert 3	320	310	280
Expert 4	600	480	570
Average *(Range)*	**510** *(210-900)*	**600** *(310-1,100)*	**390** *(88-570)*
Note: See Appendices H and I for inputs and methods for calculating these values. Estimates were validated with experts to ensure they accurately capture their opinions.			

4.4.1 Avoided Releases Using an Alternative Baseline

EPA's primary analysis assumes that the universe of confirmed releases from UST systems remains constant over the time frame of the analysis. However, both the universe of UST systems and the release rate (defined as the number of confirmed releases divided by the number of UST systems in a given year) have declined over the last two decades.[102] This is consistent with the regulatory context of the past 20 years, in which two key factors have been driving the number of releases. First, the universe of UST systems has been declining as older, smaller tanks have been replaced by newer, larger systems. Second, many of the confirmed releases reported in the 1990s and early 2000s were "legacy" releases associated with older systems that did not meet the technical standards under 40 CFR Part 280 (e.g., tanks that were installed prior to the promulgation of the UST regulation at 40 CFR Part 280). Many of these legacy releases are discovered when tanks are removed during property transactions and other development projects.

As the number of legacy releases has declined, the declining trend in total releases has "flattened" – trend data suggest that release rates have been approximately one confirmed release per hundred tanks in recent years. In addition, it is possible that confirmed releases may *increase* in future years, as UST systems continue to age, and as new fuel blends with potentially higher corrosivity are introduced into the industry. Given this uncertainty, EPA assumes in the primary analysis that release rates remain constant.

However, to address the uncertainty associated with the number of confirmed releases, EPA also assesses avoided costs under the final UST regulation using an alternative baseline that projects a continued decline in the release rate consistent with the recent historical trend, and also captures the decline in the number of UST systems as estimated in Chapter 3, Section 3.3.1.[103] This represents a conservative avoided cost scenario because it does not account for the possibility that aging systems or changes in fuel could result in increases in the number of confirmed releases reported, or that the number of UST systems could increase (if, for example, an expanding economy or population growth demands more service locations).

[102] See Appendix J for charts and data sources that demonstrate these two trends.

[103] This decline in UST systems also captures the effects of declining gasoline use in recent years.

To estimate the rate of universe decline, EPA mapped historical data on the number of UST systems from 1991 through 2013 to an exponential one-phase decay function, which appears to most accurately represent the observed behavior of the UST system universe over time.[104] EPA also mapped historical data on the release rate to a similar decay function. [105] These two functions were then used to project future UST universe sizes as well as future release rates. We used the results from these two projections to estimate future number of confirmed releases.[106]

The cumulative universe of releases over 20 years under this alternative baseline is approximately 69 percent of the number of cumulative releases over 20 years in the primary analysis. The alternative baseline contains proportionally fewer releases than UST systems because two separate declining trends, UST systems and release rate, are used to estimate the future decline in releases. This compounds the projected decline in releases.

Exhibits 4-5 and **4-6** provide a summary of our findings with respect to avoided releases and avoided groundwater contamination events, respectively, assuming the alternative baseline releases occur. The alternative baseline results in a reduction of roughly 31 percent of both avoided releases and avoided groundwater contamination relative to the original baseline. Correspondingly, in the alternative baseline scenario, approximately 390 to 2,100 releases are avoided under the Selected Option, compared to 480 to 2,600 under Alternative 1 and 120 to 1,500 under Alternative 2. Under the alternative baseline, approximately 140 to 620 groundwater contamination incidents would be avoided under the Selected Option, 210 to 790 under Alternative 1, and 61 to 430 under Alternative 2.

Exhibit 4-5

Avoided Releases Under Alternative Baseline

Expert	Selected Option	Alternative 1	Alternative 2
Expert 1	760	1,100	410
Expert 2	390	480	120
Expert 3	1,100	1,700	840
Expert 4	2,100	2,600	1,500
Average	**1,100**	**1,500**	**720**
(Range)	*(390-2,100)*	*(480-2,600)*	*(120-1,500)*

Note: See Appendices H and I for inputs and methods for calculating these values. Estimates were validated with experts to ensure they accurately capture their opinions.

[104] See Section 3.3.1.

[105] To estimate future release rates, we used a single exponential decay function, which assumes that a quantity declines at a rate proportional to its value. This is an appropriate function given the singular and slowing rate of decline observed in the release rate over time. The equation for such an exponential singular decay function is $Y = (Yo - P) * e^{(-k*X)} + P$, where P represents the "plateau," or limit of the function and k represents the function's half-life. See Appendix J for additional details.

[106] We use release rates to project future number of releases (rather than use past trends in the number of confirmed releases) for two reasons: First, as the UST universe and release rate both appear to decline in a way approximating a single-decay exponential function, these projections can be used to estimate future number of releases without the added uncertainty of whether the release trend is truly a single-decay exponential function. In addition, using the release rate projections to estimate future releases yields a more conservative (lower) total number of releases than if we were to use the past trend in the number of releases, which leads to more conservative (lower) avoided remediation cost estimates in the alternative baseline.

Exhibit 4-6

Avoided Groundwater Contamination Incidents Under Alternative Baseline

Expert	Selected Option	Alternative 1	Alternative 2
Expert 1	620	790	430
Expert 2	140	320	61
Expert 3	220	210	190
Expert 4	420	330	390
Average *(Range)*	**350** *(140-620)*	**410** *(210-790)*	**270** *(61-430)*

Note: See Appendices H and I for inputs and methods for calculating these values. Estimates were validated with experts to ensure they accurately capture their opinions.

4.5 Benefits from Avoided Releases and Reduced Release Severity

Two sources of avoided costs constitute the majority of quantifiable positive impacts from the final UST regulation. First, some costs related to release remediation do not occur because a number of releases are altogether avoided. Second, some remaining releases are reduced in severity because of the regulatory requirements (e.g., through earlier detection from walkthrough inspections and improved operability of release detection equipment). To capture this dimension of avoided costs, the analysis relies on incremental avoided groundwater remediation costs—the cost to remediate a groundwater release less the cost to remediate a soil release—as groundwater releases are generally more costly to remediate than soil releases.

In addition to avoiding remediation costs, release prevention and mitigation results in a variety of other beneficial impacts, including:

- Avoided vapor intrusion damages;
- Avoided product loss;
- Human health benefits;
- Avoided acute exposure events and large-scale releases; and
- Ecological benefits (including protection of groundwater quality).

The following sections monetize, quantify, or otherwise describe these impacts.

4.5.1 Avoided Release Remediation

To determine the benefits of avoided releases, the analysis relies on the draft 23-state Autopsy Report's distribution of releases by source (i.e., the part of the UST system that produces the release), and applies the reduction associated with each regulation to the

appropriate source to reduce the number of releases avoided by source.[107,108] Each avoided release is valued according to the weighted average of remediation costs shown in **Exhibit 4-2**.[109]

Exhibit 4-7 presents the total avoided remediation costs under each regulatory option. We estimate that discounted benefits from avoided remediation costs range between approximately $68 million and $380 under the Selected Option, while avoided costs amount to between $82 million and $530 million under Alternative 1 and between $24 million and $290 million under Alternative 2. Consistent with OMB's guidance on discount rates, this chapter presents results using a seven percent annual discount rate; for comparison, Chapter 7 presents results for the Selected Option using a three percent discount rate.

Exhibit 4-7

Discounted Avoided Release Remediation Costs

Expert	Selected Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Expert 1	$140	$210	$80
Expert 2	$68	$82	$24
Expert 3	$190	$330	$160
Expert 4	$380	$530	$290
Average *(Range)*	**$190** *($68-$380)*	**$290** *($82-$530)*	**$140** *($24-$290)*

Note: Cost estimates reflect a seven percent discount rate.

4.5.2 Reduction in Release Severity

EPA expects that the regulatory requirements will reduce the volume and duration of releases. As a result of the smaller quantity released and the shorter duration of the release, releases are assumed to be less likely to reach groundwater, thus reducing release severity. To assess the impact on remediation costs associated with reduced release severity, the analysis focuses on changes in the number of releases that would have involved groundwater in the baseline, but because of the final UST regulation, involve only soil. While this metric does not capture all of the release mitigation effects of the regulatory requirements, avoided groundwater contamination is likely to be among the most significant effects of the regulation. The difference in remediation costs between soil and groundwater releases is substantial: remediation cost for an average groundwater release is approximately $290,000, while an average soil release costs

[107] We exclude the 'Other' category of releases from the draft 23-state Autopsy Report because it does not map to the reductions designated by the experts. Because 'Other' accounts for only 1 percent of releases in the study, we distribute those releases proportionally across the remaining release sources.

[108] We use five system sources to identify release types: piping, dispenser, tank, sump turbine pump area, and delivery problems. We then assign each regulation's effect to source types based on the regulation (e.g. spill bucket tightness tests are assumed to affect releases from delivery problems).

[109] This approach assumes that avoided releases are well-represented by the distribution of release severity that is identified in the draft 23-state Autopsy Report.

approximately $74,000 to remediate.[110] Remediation costs across release extent and medium contaminated range from $27,000 to $460,000 based on typical site remediation costs from New Hampshire and Utah.[111]

To estimate the number of releases that are reduced in severity, we use experts' estimates of reductions in groundwater involvement and distribute them across release source, medium contaminated, and release extent.[112] We distribute remaining releases according to the draft 23-state Autopsy Report results and calculate additional benefits from remediation due to reductions in groundwater contamination following the regulation. We calculate avoided costs from reduced release severity by subtracting the cost to remediate all remaining releases after the final UST regulation is in effect from the cost to remediate all remaining releases in the baseline. In both cases, we remove from consideration the same number of fully-avoided releases and consider only the avoided costs from shifting releases from groundwater to soil.

A key limitation of this approach may lead to a conservative estimate of the effects of the final UST regulation. The analysis assumes that the distribution of releases across size (i.e., extent) does not change as a consequence of changes in groundwater contamination. In reality, changes in the likelihood of groundwater contamination are probably (at least in part) a consequence of reductions in release volume and duration. The same reductions in release volume that lower the incidence of groundwater contamination would likely also reduce the number of large extent releases of all types and decrease the average size of smaller releases. That is, new requirements should both reduce the number of groundwater contamination events and large extent events of all types. Our model captures only changes in the number of times that groundwater would be contaminated, and does not consider cost savings associated with smaller soil-only sites or small groundwater contamination incidents. We therefore likely understate avoided remediation costs.[113]

Exhibit 4-8 displays EPA's findings regarding discounted avoided costs due to the mitigation of groundwater incidents. The analysis calculates avoided remediation costs by taking the difference between estimated remediation costs before and after the regulatory changes are implemented. This difference accounts for both the reduction in groundwater release incidents as well as the increase in soil contamination events.[114] EPA estimates that benefits from averted

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[110] These costs reflect a simple average of the costs to remediate a large extent and local extent release of each medium.

[111] Release extent is classified in the draft 23-state Autopsy Report as either local or large. Releases that do not extend beyond the area excavated during remediation are considered local, while releases that extend beyond property lines are considered large. Extent does not explicitly involve a measure of release volume.

[112] See Appendix I for details on the calculation of avoided costs.

[113] A change in the distribution of releases could also potentially cause the "average size" and cost of soil-only releases to *increase* (because larger groundwater releases are eliminated but become "large" local soil-only releases). While this could result in higher average costs for local releases, (i.e., the cost savings for avoiding a groundwater release might be less than the difference between "average" groundwater and soil releases), the analysis also does not consider the cost savings associated with reducing the size of groundwater releases that still reach groundwater or the cost savings associated with reducing the size of soil releases.

[114] This occurs because the analysis maintains the total number of releases constant: every groundwater release that is avoided still requires remediation as a soil release.

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groundwater releases range from approximately $46 million to $190 million under the Selected Option, $80 million to $290 million under Alternative 1, and $20 million and $130 million under Alternative 2. Avoided costs from reduced groundwater contamination are additive to avoided costs from avoided releases.

Exhibit 4-8

Discounted Avoided Groundwater Remediation Costs

Expert	Selected Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Expert 1	$190	$290	$130
Expert 2	$46	$120	$20
Expert 3	$71	$80	$61
Expert 4	$130	$120	$120
Average *(Range)*	**$110** *($46-$190)*	**$150** *($80-$290)*	**$84** *($20-$130)*

Note: Cost estimates reflect a seven percent discount rate.

4.5.3 Total Avoided Remediation Costs from Avoided Releases and Reduced Release Severity

Exhibit 4-9 displays the sum of avoided remediation costs across both avoided releases and mitigated groundwater incidents for all four experts. Because experts with the lowest estimate in one of these categories did not necessarily have similarly low estimates in the other, the range of total avoided costs is not equal to the sum of the ranges from **Exhibits 4-7** and **4-8**.

Exhibit 4-9

Total Discounted Avoided Remediation Costs[a]

Expert	Selected Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Expert 1	$330	$490	$210
Expert 2[b]	$110	$200	$44
Expert 3	$260	$410	$220
Expert 4	$510	$650	$410
Average *(Range)*	**$300** *($110-$510)*	**$440** *($200-$650)*	**$220** *($44-$410)*

[a] Cost estimates were derived using a seven percent discount rate.

[b] Expert 2 provided responses that generate benefits that are relatively low compared to the other experts. Conversations with this expert indicated that he assumed partial noncompliance of at least 25 percent (that is, a compliance rate of at most 75 percent). To evaluate the potential magnitude of this inconsistency, we examined the impact of scaling Expert 2's avoided remediation costs from 75 percent compliance to 100 percent compliance. This adjustment resulted in avoided remediation costs of greater than $150 million annually under the Selected Option, assuming a seven percent discount rate. See Appendix H for additional discussion.

Although the values generated by the experts' responses cover a wide range, we note that the avoided cost estimates tend to spread evenly around the mean. Expert 4 consistently represents the high-end estimate of avoided costs, and Expert 2 consistently represents the low-

end. While we are not able to explain why Expert 4's estimates are consistently higher than those of the other experts, we do note one source of uncertainty that applies to Expert 4's estimates. The experience of most experts is related to implementing state regulatory programs, which directly consider the universe of confirmed releases evaluated in this analysis. However, the experience of Expert 4 considers system engineering and changes in UST-related equipment. As a result, Expert 4's estimates consider all potential releases and then align these to EPA's universe of confirmed releases. While this approach is methodologically sound, it requires one more assumption on the part of the expert to derive a total estimate.[115]

In contrast, Expert 2's responses generate benefits estimates that are low compared to the responses of other experts. Comments provided by the expert indicated, and subsequent conversations with him verified, that he assumed a significant level of noncompliance with the regulations in deriving his estimates. His estimates assume that at least 25 percent of facilities will not correctly implement the requirements (that is, a compliance rate of at most 75 percent). The expert noted that this assumed level of compliance did not include intentional noncompliance, but did attempt to account for a lack of awareness or human error by owners/operators. This assumption is methodologically sound, but is not consistent with the full compliance assumed in our cost analysis. As a result, the values provided by Expert 2 may significantly understate benefits relative to costs. To evaluate the potential magnitude of this inconsistency, we scale Expert 2's avoided remediation costs from 75 percent compliance to 100 percent compliance as a sensitivity analysis. This adjustment results in total avoided remediation costs greater than $150 million annually under the Selected Option, assuming a seven percent discount rate. Appendix H provides additional discussion of the effect of assumed noncompliance on the experts' responses and potential net benefits of the final UST regulation.

4.5.4 Benefits from Avoided Releases and Reduced Release Severity under the Alternative Baseline Scenario

Exhibits 4-10 and **4-11** present avoided remediation costs associated with the avoided releases and avoided groundwater incidents shown in **Exhibits 4-5** and **4-6** under the alternative baseline scenario. In the alternative baseline scenario, avoided release remediation costs range from $47 million to $260 million under the Selected Option, between $56 million and $370 million under Alternative 1, and between $17 million and $200 million under Alternative 2. Averted groundwater remediation costs, meanwhile, range from $32 million to $130 million under the Selected Option, $55 million to $200 million under Alternative 1, and $14 million to $92 million under Alternative 2. These alternative estimates represent conservative estimates of the potential value of avoided releases, because they do not consider possible factors that may lead to increases in the number of releases reported or the number of UST systems in the future.

[115] The type of universe adjustment conducted by Expert 4 will not necessarily result in estimates that are overstated, and could instead result in estimates that are understated. The adjustment is noted here simply as an additional source of uncertainty unique to this expert.

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Exhibit 4-10

Discounted Avoided Release Remediation Costs Under Alternative Baseline

Expert	Selected Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Expert 1	$94	$140	$56
Expert 2	$47	$56	$17
Expert 3	$130	$230	$110
Expert 4	$260	$370	$200
Average *(Range)*	**$130** *($47-$260)*	**$200** *($56-$370)*	**$95** *($17-$200)*

Note: Cost estimates reflect a seven percent discount rate.

Exhibit 4-11

Discounted Avoided Groundwater Remediation Costs Under Alternative Baseline

Expert	Selected Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Expert 1	$130	$200	$92
Expert 2	$32	$84	$14
Expert 3	$49	$55	$42
Expert 4	$89	$83	$85
Average *(Range)*	**$75** *($32-$130)*	**$100** *($55-$200)*	**$58** *($14-$92)*

Note: Cost estimates reflect a seven percent discount rate.

Exhibit 4-12 displays the sum of avoided remediation costs across both avoided releases and mitigated groundwater incidents under the alternative baseline scenario. Because experts with relatively lower estimates in one of these categories did not necessarily have similarly low estimates in the other, the range of avoided costs presented is not the sum of lower and higher bounds in **Exhibits 4-10** and **4-11**. As the cumulative release universe in the alternative baseline scenario is roughly 69 percent of cumulative releases in the original baseline, total avoided costs in the alternative baseline are approximately 31 percent lower than they are in the primary analysis.

Exhibit 4-12

Total Discounted Avoided Remediation Costs Under Alternative Baseline

Expert	Selected Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Expert 1	$230	$340	$150
Expert 2	$79	$140	$31
Expert 3	$180	$290	$150
Expert 4	$350	$450	$280
Average *(Range)*	**$210** *($79-$350)*	**$300** *($140-$450)*	**$150** *($31-$280)*

Note: Cost estimates reflect a seven percent discount rate.

4.5.5 Avoided Costs by Requirement

Exhibit 4-13 presents overall avoided remediation costs by requirement for the Selected Option. The exhibit shows the avoided costs for each requirement based on experts' responses to the effects of the individual requirements in the final UST regulation. Beneficial impacts are concentrated similarly to costs: the majority of avoided costs are captured by walkthrough inspections, overfill prevention equipment tests, spill bucket tightness tests, containment sump tests, and operability tests.[116] Estimates in **Exhibit 4-13** assume that cost savings associated with each regulatory requirement occur one year after implementation and reflect discounting. Similar exhibits presenting overall avoided remediation costs by requirement for Alternative 1 and Alternative 2 are included in Appendix I.

The model used by EPA to estimate avoided remediation costs is not designed to measure avoided costs from large-scale releases such as those typically associated with UST systems with FCTs and AHFDSs. Releases from these types of systems constitute a small portion of total releases, but may be large in volume and can result in significant groundwater impacts. Our analysis does not estimate the benefits associated with changes in operation of these systems. However, we include a qualitative discussion of these acute events later in this chapter.

Exhibit 4-13

Total Discounted Avoided Costs By Requirement For Conventional UST Systems[a,b] ($ millions)
Selected Option

Description[c]	Expert 1	Expert 2	Expert 3	Expert 4	Average
Release Prevention					
Walkthrough inspections	$140	$44	$130	$270	$150
Overfill prevention equipment inspection	$23	$1.1	$19	$25	$17
Spill prevention equipment testing	$16	$7.3	$36	$21	$20
Containment sump testing	$9.3	$18	$1.0	$9.7	$9.4
Testing after repairs to spill and overfill prevention equipment, and secondary containment	$2.7	$11	$1.9	$7.9	$5.9
Eliminate flow restrictors in vent lines for all new tanks and when overfill prevention equipment is replaced	$2.2	$7.5	$0.85	$1.5	$3.0
Subtotal - Release Prevention	**$190**	**$89**	**$190**	**$330**	**$200**
Release Detection					
Operability tests for release detection methods	$130	$13	$61	$170	$92
Groundwater monitoring site assessment[d]	$0.00	$0.00	$0.00	$0.00	$0.00
Vapor monitoring site assessment[d]	$0.00	$0.00	$0.00	$0.00	$0.00
Add SIR and CITLDS usage[e]	$0.21	$0.00	$0.94	$0.56	$0.43

[116] Some requirements, particularly those that target narrow subpopulations of the UST system universe, may generate higher avoided costs than this analysis suggests. Three sources of uncertainty drive these smaller universe results. First, EPA's model is calibrated to estimate avoided costs for broad-based national changes at average facilities; extrapolation of these results to small populations may not reflect specific subpopulations (e.g., UST systems in Indian country). Second, several experts stated that their estimates of impacts for requirements affecting narrow subsets of UST populations are more uncertain than broader estimates. Finally, experts emphasized that equipment replacement, inspection, training, and testing are all essential to ensure release reductions, and they used judgment to emphasize the different roles of these different activities. Therefore, the assignment of specific impacts to each of the requirements is potentially less accurate than the aggregate estimates of avoided impacts.

Exhibit 4-13

Total Discounted Avoided Costs By Requirement For Conventional UST Systems[a,b] ($ millions)
Selected Option

Response to interstitial monitoring alarms	$0.80	$10	$0.21	$0.78	$2.9
Remove release detection deferral for EGTs	$0.68	$2.2	$7.6	$5.9	$4.1
Subtotal - Release Detection	**$130**	**$25**	**$70**	**$170**	**$99**
Other					
Notification of ownership changes[f]	$0.00	$0.00	$0.00	$0.00	$0.00
Replacement of lined tanks that cannot be repaired according to a code of practice[g]	$0.00	$0.00	$0.01	$0.00	$0.00
Requirements for demonstrating compatibility with fuels >E10 and >B20[h]	$0.00	$0.11	$0.00	$0.12	$0.06
Subtotal – Other	**$0.00**	**$0.11**	**$0.01**	**$0.12**	**$0.06**
EPAct-related Provisions					
Operator Training	$1.0	$0.04	$0.60	$1.5	$0.80
Secondary containment	$1.0	$0.66	$7.6	$2.4	$2.9
Subtotal - EPAct-related Provisions	**$2.1**	**$0.69**	**$8.2**	**$3.9**	**$3.7**
TOTAL	**$330**	**$110**	**$260**	**$510**	**$300**

[a] Cost estimates were derived using a seven percent discount rate.

[b] Reductions in frequency and release severity (as measured by changes in groundwater contamination) do not adequately capture the positive impacts of preventing releases from very large systems such as AHFDSs and UST systems with FCTs. Releases from these types of systems constitute a small portion of total releases, but may be large in volume and can result in significant groundwater impacts. Especially in the case of AHFDSs, even minor problems can create large releases due to the significant pressure under which contents are stored. The model used by EPA to estimate avoided remediation costs is not designed to measure avoided costs from very large releases such as those typically associated with AHFDSs and FCTs, and we therefore do not offer an estimate of avoided costs for requirements that apply to these systems.

[c] Some requirements, particularly those that target narrow subpopulations of the UST system universe, may generate higher avoided costs than this analysis suggests. Three sources of uncertainty drive these smaller universe results: First, EPA's model is calibrated to estimate avoided costs for broad-based national changes at average facilities; extrapolation of these results to small populations may not reflect specific subpopulations (e.g., UST systems in Indian country). Second, several experts stated that their estimates of impacts for requirements affecting narrow subsets of UST populations are more uncertain than broader estimates. Finally, experts emphasized that equipment replacement, inspection, training, and testing are all essential to ensure release reductions, and they used judgment to emphasize the different roles of these different activities. Therefore, the assignment of specific impacts to each of the requirements is potentially less accurate than the aggregate estimates of avoided impacts.

[d] Experts 1, 2, and 3 attributed reductions to the groundwater and vapor monitoring site assessment requirements; however, these experts also noted that they assumed the requirements would lead users to switch to another leak detection method. Because EPA does not assume that users will necessarily switch methods, we conservatively removed the experts' assumed reductions for this requirement. Expert 4 did not attribute reductions to these requirements.

[e] Expert 2 assumed negligible effect of the requirement to add SIR and CITLDS usage on release frequency and severity.

[f] All experts assumed no effect, or in the case of Expert 3, a negligible effect, of the requirement for notification of ownership changes on reductions in release frequency or severity.

[g] Although all experts attributed some reduction in release frequency or severity to this requirement, the number of tanks that cannot be repaired according to a code of practice is assumed to be so small that estimated benefits are negligible.

[h] Experts 1 and 3 attributed reductions to the compatibility requirement but noted that the majority of the benefit should be attributed to E10 users, which are not included in this requirement. As a result, we conservatively removed these experts' assumed reductions for this requirement.

As noted in **Exhibit 4-1**, EPA excluded the highest state-level remediation cost values from its calculation of average cost of release remediation. While this step contributes toward a conservative (low) estimate of avoided costs, the possibility remains that the average remediation costs used in **Exhibit 4-13** overestimate the positive impacts of the final UST regulation if state data provided are not representative of national average remediation costs. In **Exhibit 4-14**, we therefore estimate the positive effects of the final UST regulation using only the lowest

remediation costs available.[117] As shown in **Exhibit 4-14,** EPA's estimate of the avoided remediation costs of the final UST regulation using the lowest state cost estimates is $73 million to $330 million per year under the Selected Option. While this is not a true "lower bound" estimate, these estimates reflect costs that lead to lower than average costs when compared to figures reported by ASTSWMO.[118] Similar exhibits presenting overall avoided remediation costs by requirement for Alternative 1 and Alternative 2 are included in Appendix I.

Exhibit 4-14

Sensitivity Analysis: Total Discounted Avoided Costs By Requirement Based On New Hampshire Remediation Costs[a,b] ($ millions)
Selected Option

Description[c]	Expert 1	Expert 2	Expert 3	Expert 4	Average
Release Prevention					
Walkthrough inspections	$86	$27	$81	$170	$92
Overfill prevention equipment inspection	$15	$0.74	$13	$16	$11
Spill prevention equipment testing	$11	$5.0	$24	$14	$14
Containment sump testing	$6.1	$13	$0.68	$6.5	$6.5
Testing after repairs to spill and overfill prevention equipment, and secondary containment	$1.7	$6.9	$1.2	$5.1	$3.7
Eliminate flow restrictors in vent lines for all new tanks and when overfill prevention equipment is replaced	$1.3	$5.1	$0.57	$0.97	$2.0
Subtotal - Release Prevention	**$120**	**$58**	**$120**	**$220**	**$130**
Release Detection					
Operability tests for release detection methods	$77	$7.3	$38	$100	$56
Groundwater monitoring site assessment[d]	$0.00	$0.00	$0.00	$0.00	$0.00
Vapor monitoring site assessment[d]	$0.00	$0.00	$0.00	$0.00	$0.00
Add SIR and CITLDS usage[e]	$0.13	$0.00	$0.58	$0.36	$0.27
Response to interstitial monitoring alarms	$0.49	$6.2	$0.13	$0.50	$1.8
Remove release detection deferral for EGTs	$0.42	$1.2	$4.7	$3.6	$2.5
Subtotal - Release Detection	**$78**	**$15**	**$43**	**$110**	**$61**
Other					
Notification of ownership changes[f]	$0.00	$0.00	$0.00	$0.00	$0.00

[117] These were provided by the State of New Hampshire's UST program.

[118] If we calculate a weighted-average cost per release where sources are weighted proportionally by their contribution to total releases using the lowest remediation cost data available (i.e., from New Hampshire), we obtain an overall average cost per release of approximately $103,000 (See Appendix I for details). Under the alternative baseline, total avoided costs based on New Hampshire remediation costs range from $51 million to $230 million in the Selected Option. This represents an extreme lower bound analysis of avoided remediation costs.

Additionally, we consider whether the remediation costs used in this analysis are consistent with those reported by ASTSWMO. As noted above, ASTSWMO estimates the annual average remediation cost per site to be roughly $124,000 in 2012. If we value the releases and groundwater incidents avoided under each option using the ASTSWMO average site remediation cost, we obtain total avoided costs that are consistent with the primary estimates used in this analysis. Specifically, avoided remediation costs are approximately $96 million to $450 million under the Selected Option, $140 million to $520 million under Alternative 1, and $32 million to $340 million under Alternative 2. However, ASTSWMO's average site remediation value may understate typical remediation costs because co-pays, deductibles, and other costs not paid by state funds are excluded.

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Exhibit 4-14

Sensitivity Analysis: Total Discounted Avoided Costs By Requirement Based On New Hampshire Remediation Costs[a,b] ($ millions)

Selected Option

Replacement of lined tanks that cannot be repaired according to a code of practice[g]	$0.00	$0.00	$0.00	$0.00	$0.00
Requirements for demonstrating compatibility with fuels >E10 and >B20[h]	$0.00	$0.07	$0.00	$0.08	$0.04
Subtotal – Other	**$0.00**	**$0.07**	**$0.00**	**$0.08**	**$0.04**
EPAct-related Provisions					
Operator Training	$0.66	$0.02	$0.38	$1.0	$0.52
Secondary containment	$0.67	$0.44	$4.8	$1.5	$1.9
Subtotal - EPAct-related Provisions	**$1.3**	**$0.46**	**$5.2**	**$2.5**	**$2.4**
TOTAL	**$200**	**$73**	**$170**	**$330**	**$190**

[a] Cost estimates were derived using a seven percent discount rate.

[b] Reductions in frequency and release severity (as measured by changes in groundwater contamination) do not adequately capture the positive impacts of preventing releases from very large systems such as AHFDSs and UST systems with FCTs. Releases from these types of systems constitute a small portion of total releases, but may be large in volume and can result in significant groundwater impacts. Especially in the case of AHFDSs, even minor problems can create large releases due to the significant pressure under which contents are stored. The model used by EPA to estimate avoided remediation costs is not designed to measure avoided costs from very large releases such as those typically associated with AHFDSs and FCTs, and we therefore do not offer an estimate of avoided costs for requirements that apply to these systems.

[c] Some requirements, particularly those that target narrow subpopulations of the UST system universe, may generate higher avoided costs than this analysis suggests. Three sources of uncertainty drive these smaller universe results: First, EPA's model is calibrated to estimate avoided costs for broad-based national changes at average facilities; extrapolation of these results to small populations may not reflect specific subpopulations (e.g., UST systems in Indian country). Second, several experts stated that their estimates of impacts for requirements affecting narrow subsets of UST populations are more uncertain than broader estimates. Finally, experts emphasized that equipment replacement, inspection, training, and testing are all essential to ensure release reductions, and they used judgment to emphasize the different roles of these different activities. Therefore, the assignment of specific impacts to each of the requirements is potentially less accurate than the aggregate estimates of avoided impacts.

[d] Experts 1, 2, and 3 attributed reductions to the groundwater and vapor monitoring site assessment requirements; however, these experts also noted that they assumed the requirements would lead users to switch to another leak detection method. Because EPA does not assume that users will necessarily switch methods, we conservatively removed the experts' assumed reductions for this requirement. Expert 4 did not attribute reductions to these requirements.

[e] Expert 2 assumed negligible effect of the requirement to add SIR and CITLDS usage on release frequency and severity.

[f] All experts assumed no effect, or in the case of Expert 3, a negligible effect, of the requirement for notification of ownership changes on reductions in release frequency or severity.

[g] Although all experts attributed some reduction in release frequency or severity to this requirement, the number of tanks that cannot be repaired according to a code of practice is assumed to be so small that estimated benefits are negligible.

[h] Experts 1 and 3 attributed reductions to the compatibility requirement but noted that the majority of the benefit should be attributed to E10 users, which are not included in this requirement. As a result, we conservatively removed these experts' assumed reductions for this requirement.

4.6 Avoided Vapor Intrusion Damages

Vapor intrusion generally occurs when petroleum or highly-dissolved concentrations of free product come into direct contact with building sumps and foundations, elevator shafts, and preferential pathways (e.g. improperly sealed utility lines). Intrusion can also occur when these substances come close to building foundations.[119] The cost to remediate vapor intrusion is typically incremental to the cost to remediate a LUST site. Based on information provided by four states, EPA estimates that, on average, 5.5 percent of all releases cause vapor intrusion

[119] Davis, Robin V. "Petroleum Hydrocarbon Vapor Intrusion Investigations: Current General Practice." Leaking Underground Storage Tanks, Utah Department of Environmental Quality, February 9, 2010. Accessed at: http://www.epa.gov/oust/pviwebinar_approach.pdf.

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issues. Each of these instances requires additional remedial actions valued at approximately $42,000 beyond ordinary release remediation costs.[120] As reported in **Exhibit 4-15**, given 770 to 3,600 avoided releases and mitigated groundwater incidents, we estimate between 42 and 200 avoided vapor intrusion incidents under the Selected Option. This reduction would avoid between $1.7 million and $7.9 million per year in avoided remediation costs related to vapor intrusion. Under Alternative 1, this range increases to $2.5 million to $9.1 million, and under Alternative 2, this range decreases to $0.6 million to $6.0 million per year.

Exhibit 4-15

Avoided Vapor Intrusion Costs ($ millions)

	Expert 1	Expert 2	Expert 3	Expert 4	Average *(Range)*
Selected Option					
Total avoided releases and avoided groundwater incidents	2,000	770	1,900	3,600	2,100 *(770-3,600)*
Avoided vapor intrusion incidents	110	42	100	200	110 *(42-200)*
Avoided vapor intrusion costs	$4.3	$1.7	$4.1	$7.9	$4.5 *($1.7-$7.9)*
Alternative 1					
Total avoided releases and avoided groundwater incidents	2,700	1,100	2,700	4,200	2,700 *(1,100-4,200)*
Avoided vapor intrusion incidents	150	63	150	230	150 *(63-230)*
Avoided vapor intrusion costs	$5.9	$2.5	$5.9	$9.1	$5.9 *($2.5-$9.1)*
Alternative 2					
Total avoided releases and avoided groundwater incidents	1,200	260	1,500	2,800	1,400 *(260-2,800)*
Avoided vapor intrusion incidents	66	14	82	150	78 *(14-150)*
Avoided vapor intrusion costs	$2.6	$0.6	$3.2	$6.0	$3.1 *($0.6-$6.0)*

Under the alternative baseline, avoided vapor intrusion costs fall due to the smaller universe of releases. In the Selected Option, avoided costs are $1.2 million to $5.5 million. Under Alternative 1, avoided costs range from $1.7 million to $6.3 million; under Alternative 2, they range between $0.4 million and $4.1 million.

4.7 Avoided Product Loss

Releases into the environment cause operators to lose otherwise marketable fuel products. **Exhibit 4-16** presents costs avoided due to product loss. The analysis calculates the product loss associated with avoided releases by multiplying the average volume associated with each release source by the number of releases of that type before and after the final UST regulation is in effect. Based on the estimates of avoided releases presented by the experts, the draft 23-state Autopsy Report's distribution of releases, and average release volumes reported in the Florida

[120] New Hampshire, Utah, South Carolina, Virginia, and New Mexico were contacted for LUST remediation costs, but only New Hampshire was able to provide a cost for cleanup actions related to vapor intrusion. Other state programs contributed data to the frequency of incidents, but not to costs.

study, EPA estimates that approximately 0.25 million gallons to 1.9 million gallons per year of diesel and gasoline releases are avoided as a consequence of the Selected Option. At an average price of $3.73 per gallon, owners and operators avoid losing approximately $0.9 million to $6.5 million in product due to releases.[121] These values range from 0.22 million gallons to 2.2 million gallons, or $0.8 million to $7.6 million, under Alternative 1. Under Alternative 2, these values decrease to a range of 0.10 million gallons to 1.5 million gallons, or $0.4 million to $5.2 million. Limited data on release size do not support an analysis of avoided product loss associated with releases that are reduced in severity. This estimate of avoided product loss there understates total likely avoided product losses.

Exhibit 4-16

Value Of Avoided Product Loss

Expert	Selected Option		Alternative 1		Alternative 2	
	Thousand gallons	$ millions	Thousand gallons	$ millions	Thousand gallons	$ millions
Expert 1	650	$2.3	750	$2.6	440	$1.5
Expert 2	250	$0.9	220	$0.8	100	$0.4
Expert 3	830	$2.9	1,200	$4.1	710	$2.5
Expert 4	1,900	$6.5	2,200	$7.6	1,500	$5.2
Average	**900**	**$3.1**	**1,100**	**$3.8**	**690**	**$2.4**
(Range)	*(250-1,900)*	*($0.9-$6.5)*	*(220-2,200)*	*($0.8-$7.6)*	*(100-1,500)*	*($0.4-$5.2)*

Releases are valued using an average price of motor fuel in 2012. Prices per gallon for all grades of retail motor gasoline and No. 2 diesel fuel (all concentrations of sulfur) were $3.63 and $3.97, respectively, as reported by: U.S. Bureau of Transportation Statistics. "Sales Price of Transportation Fuel to End-Users." National Transportation Statistics 2013. Table 3-11. Accessed at: http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/NTS_Entire_0.pdf. We weight these prices according to prime supplier sales volumes in 2012 published by the Energy Information Administration, which summed to 347,234.5 thousands of gallons per day for gasoline and 143,270.6 thousands of gallons per day for all grades of diesel fuel (U.S. Energy Information Administration. Petroleum & Other Liquids. Prime Supplier Sales Volumes. Accessed at: http://www.eia.gov/dnav/pet/pet_cons_prim_dcu_nus_a.htm.).

Under the alternative baseline, avoided costs due to product loss are lower than in the original baseline as there are relatively fewer releases. Under the Selected Option, avoided costs due to product loss are $0.6 million to $4.5 million. Under Alternative 1, avoided costs range from $0.5 million to $5.2 million; under Alternative 2, they range from $0.3 million to $3.6 million.

4.8 Human Health Benefits

Exposure to petroleum through ingestion, dermal contact, and inhalation can cause a range of health effects, including cancer and non-cancer impacts associated with benzene, and non-cancer impacts (e.g., neurological impacts) associated with other petroleum constituents

[121] Releases are valued using an average price of motor fuel in 2012. Prices per gallon for all grades of retail motor gasoline and No. 2 diesel fuel (all concentrations of sulfur) were $3.63 and $3.97, respectively, as reported by: U.S. Bureau of Transportation Statistics. "Sales Price of Transportation Fuel to End-Users." National Transportation Statistics 2013. Table 3-11. Accessed at: http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/NTS_Entire_0.pdf. We weight these prices according to prime supplier sales volumes in 2012 published by the Energy Information Administration, which summed to 347,234.5 thousands of gallons per day for gasoline and 143,270.6 thousands of gallons per day for all grades of diesel fuel (U.S. Energy Information Administration. Petroleum & Other Liquids. Prime Supplier Sales Volumes. Accessed at: http://www.eia.gov/dnav/pet/pet_cons_prim_dcu_nus_a.htm.).

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such as toluene.[122] In addition, exposure to jet fuel, such as that stored in AHFDSs and FCTs at commercial and military airports, can result in non-cancer impacts to skin, nervous, and respiratory systems.[123] The types of health risks that may be avoided by the final UST regulation are described in more detail below.

The complex nature of petroleum mixtures and the limited toxicological data available both for petroleum mixtures and for individual component compounds of petroleum limits EPA's ability to comprehensively document the health effects associated with the most significant releases. However, the toxicological testing that has been conducted on some common components of total petroleum hydrocarbons (TPH) suggests that exposures to TPH through inhalation or ingestion of gasoline or diesel could result in the following effects:

- Neurological effects, such as central nervous system depression, have been associated with acute and chronic exposures to toluene and xylenes; n-hexane exposure has been associated with effects on peripheral neuropathy;
- Hematological effects associated with oral and inhalation exposure to benzene and with oral and inhalation exposure to naphthalene;
- Renal and hepatic effects associated with BTEX compounds and other aromatic hydrocarbon compounds;
- Developmental effects associated with intermediate exposures to ethylbenzene and xylenes; and
- Carcinogenic effects of oral exposures to certain polycyclic aromatic hydrocarbons (PAHs) including benzo(a)pyrene, benz(a)anthracene, and dibenz(a,h)anthracene.[124]

Health risks may also be associated with exposure to kerosene, which may be stored in USTs or used as a component in jet fuel. Although risks associated with kerosene have not been studied as widely as those associated with petroleum, existing data suggest that these risks primarily include non-cancer impacts to the skin, nervous, and respiratory systems.[125] In the baseline, some of these risks may be reduced due to existing monitoring standards under the

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[122] For example, see: Paustenbach, D J, et. al. "Benzene toxicity and risk assessment, 1972-1992: implications for future regulation." *Environ Health Perspect,* December 1993, 101(Suppl 6):177–200.

[123] U.S. Department of Labor Occupational Safety and Health Administration. "Safety and Health Topics: Jet Fuel (JP8)." Accessed at: http://www.osha.gov/dts/chemicalsampling/data/CH_248748.html.

[124] U.S. Department of Health and Human Services. Public Health Service. Agency for Toxic Substances and Disease Registry. "Toxicological Profile for Polycyclic Aromatic Hydrocarbons." August 1995.

[125] See, for example: U.S. Department of Labor Occupational Safety and Health Administration. "Safety and Health Topics: Jet Fuel (JP8)." Accessed at: http://www.osha.gov/dts/chemicalsampling/data/CH_248748.html; and U.S. Department of Health and Human Services. Public Health Service. Agency for Toxic Substances and Disease Registry. "Toxic Substances Portal – Jet Fuels JP-5 and JP-8." Accessed at: http://www.atsdr.cdc.gov/phs/phs.asp?id=771&tid=150.

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Occupational Safety and Health Administration (OSHA).[126] However, because the final UST regulation includes new requirements for AHFDSs and UST systems with FCTs located at commercial and military airports, avoidance of health risks from kerosene could represent an additional benefit of the final UST regulation.

The magnitude of health benefits associated with avoiding exposure to petroleum and jet fuel components depends on multiple factors. These factors include the number of cancer cases and non-cancer impacts per average UST release, which in turn depends on the number of groundwater users surrounding UST sites; the number of releases prevented through implementation of the final UST regulation; and the willingness-to-pay to avoid a fatal cancer (e.g., the value of a statistical life) or willingness-to-pay to avoid non-cancer impacts. In addition, assumptions about baseline behaviors, such as the assumption that individuals will limit their own exposure in certain cases (e.g., when petroleum contamination exceeds a "taste/odor threshold" and water is no longer palatable), affect the estimated magnitude of health benefits. Based on available information on average plume volumes and ages and the distribution of groundwater users, these benefits are expected to be small.[127] Nevertheless, some larger releases may have significant cancer and non-cancer risks associated with them. Although these health effects are not able to be reliably quantified with available data, they represent additional potential benefits of the regulation.

4.9 Avoided Acute Exposure Events and Large-Scale Releases

Most health effects associated with leaking underground storage tanks reflect long-term exposures, but some releases from UST systems relate to acute events such as fire or explosion. These releases can involve acute exposures, large volumes of free product, extensive ecological damage, and injuries and death, depending on the circumstances of the event. Because these events are both infrequent and difficult to predict, it is not possible to quantify or monetize the impact associated with avoiding them, but the response, remediation, and medical costs associated with a single acute incident could be significant. The final UST regulation is designed to ensure effective maintenance of UST systems, and one benefit will be to reduce the chances of an acute event that could result in a large-scale release and its associated damages (e.g., a well-maintained UST system is less likely to be in a condition where it may explode).

Acute events are especially important in the case of UST systems such as AHFDSs and UST systems with FCTs, which can hold large volumes of fuel. Releases from these systems can result in extensive groundwater and other environmental and health impacts. For instance, an estimated 300,000 to 500,000 gallons of fuel was released from a 2.1 million gallon underground field-constructed tank at a fuel depot in Portsmouth, VA that was in operation from the 1950s to

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[126] U.S. Department of Labor Occupational Safety and Health Administration. "Safety and Health Topics: Jet Fuel (JP8)." Accessed at: http://www.osha.gov/dts/chemicalsampling/data/CH_248748.html.

[127] U.S. Environmental Protection Agency, Office of Underground Storage Tanks. "Petroleum Releases at Underground Storage Tank Facilities in Florida." March 2005. See also: RTI International. "Risk Analysis to Support Potential Revisions to Underground Storage Tank (UST) Regulations." December 22, 2010.

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mid-1980s. Free product was found within 20 feet of a nearby creek in 1987. As of 2011, approximately 143,000 gallons of product had been recovered.[128]

In addition, the final UST regulation may large-scale releases associated with AHFDSs and FCTs. An example of the potential magnitude of the releases from these systems is the pattern of releases at Pease Air Force Base, where jet fuel was delivered to the runway apron via an underground fueling system.[129] Historical leakage from the system contaminated soil and groundwater, forming groundwater plumes at many sites along the system.[130] A site release study identified 60 to 70 release points with varying degrees of severity along the refueling system line with free product found under the apron at closure.[131] While there are no historical records available indicating the amount of leaked fuel or leak origins, the presence of residual soil and groundwater contamination poses a significant threat to human health and the environment.

While the analytical procedure used by EPA to estimate monetized benefits was unable to capture the positive impacts of preventing releases from these types of systems, we note that preventing or mitigating these releases may generate substantial reductions in remediation costs and public exposure.

4.10 Ecological Benefits

A document prepared for EPA outlines the types of ecological damages that can result from land-based pollution releases:[132]

> Measurable damage to ecological resources from land releases generally occurs when groundwater or overland flow of water carry contaminants to a nearby surface water body. Flood events and other acute incidents can cause releases of waste that have an immediate and significant effect on ecological resources (e.g., a surface impoundment dike fails and releases contaminants into a river, killing fish and other biota). More common are gradual increases in contaminant levels due to long-term releases to groundwater. These may have a broad array of impacts on both resources used by humans (such as fish populations) and on "non-use value" such as the value of preserving habitat and species diversity. In addition, biota can be affected by uptake of contaminants from soil, particularly in wetlands or areas where the water table is high.

Because releases from USTs typically reach soil before reaching groundwater, such releases would likely be classified as land releases. Any releases avoided due to the final UST regulation

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[128] Phone conversation and email from Lynne Smith, geologist, and Russ Ellison, Virginia Department of Environmental Quality.

[129] New Hampshire Department of Environmental Services, Air Resources Division. 2007. Permit Application Review Summary, Former Pease AFB Remediation Project, FY04-0453. 10 March 2010. Accessed at: http://www2.des.state.nh.us/OneStopPub/Air/330159078OFY04-0453TypeSummary.pdf.

[130] New Hampshire Department of Environmental Services, Air Resources Division. 2009. Permit Application Review Summary, Former Pease AFB Remediation Project, 09-0113. 10 March 2010. Accessed at: http://www2.des.state.nh.us/OneStopPub/Air/330159094909-0113TypeSummary.pdf.

[131] Hilton, Scott. Site Summaries Pease Air Force Base Newington/Portsmouth. 2008. New Hampshire Department of Environmental Services. 10 March 2010. Accessed at: http://des.nh.gov/organization/divisions/waste/hwrb/fss/superfund/summaries/pease.htm.

[132] Industrial Economics, Inc. "Approaches to Assessing the Benefits, Costs, and Impacts of the RCRA Subtitle C Program." October 2000. Accessed at: http://www.epa.gov/oswer/docs/rcradocs/rcra.pdf. p. 3-17

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may result in ecological benefits. A complete assessment of ecological benefits, however, requires significant location-specific data, and it is often difficult to identify sufficient data to support valuation of both use and non-use values of preserving habitat and species diversity.

The ecological benefits that accrue from the final UST regulation are likely to occur as a consequence of averted groundwater contamination. The resource economics literature contains numerous examples of studies that value these services, as demonstrated by the public's willing-to-pay (WTP) for groundwater protection programs (e.g., see Poe et al. 2001).[133] However, these values are largely context-specific in terms of location, scale, and the specific threat to groundwater considered and do not provide broadly-applicable information on the value of groundwater.

Some attempts have been made to develop standardized values for groundwater, often for purposes of Natural Resource Damage Assessment (NRDA).[134] For instance, the State of New Jersey currently employs a replacement cost approach to determine interim economic losses associated with injuries to groundwater.[135] Even so, replacement cost methods do not constitute a proper WTP valuation. The replacement costs of natural resources and their services capture WTP only when they meet three criteria: 1) replacement provides equivalent quality and quantity of services; 2) the public is actually willing to pay for the replacement; and 3) replacement is the most cost-effective means of restoring the lost services.[136] Even if these conditions are true, this approach may overestimate groundwater values in urban areas, as land is typically more expensive, and underestimate groundwater values in areas where land is less expensive.

Because an assessment of the value of groundwater protected by the final UST regulation is affected by spatial heterogeneity, it requires information about the public's WTP for protection in all states and territories. These data are not available, and EPA is therefore unable to place a value on the groundwater protected. Instead, we provide an estimate below of the total quantity of groundwater that may be protected by the regulation. We note, though, that a portion of the value of restoring groundwater is captured as part of the cost to remediate each release discussed earlier in this chapter. However, while the cost of restoring groundwater to a higher quality after

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[133] Poe, Gregory L., K.J. Boyle, and J.C. Bergstrom. "A Preliminary Meta Analysis of Contingent Values for Ground Water Revisited." In *The Economic Value of Water Quality*, edited by Bergstrom, J.C., K.J. Boyle and G.L. Poe, Cheltenham, United Kingdom: Edward Elgar Publishing Limited. 2001.

[134] Natural Resource Damage Assessment (NRDA) is the process of estimating the monetary cost of restoring natural resources injured by discharges of oil or releases of hazardous substances. Monetary costs, or damages, are estimated by identifying the services provided by the injured natural resources, determining the baseline level of the services provided by the resources, and quantifying the reduction in services that result from the natural resource injury. See: U.S. Environmental Protection Agency. Natural Resource Damage Assessment. Accessed at: www.epa.gov/ superfund/ programs/nrd/nrda2.htm.

[135] New Jersey's approach follows three steps. First, the approach determines the total present value of potential yield from the contaminated area over the relevant period of impairment, typically based on a site-specific or regional recharge rate for the area in question. Second, again considering regional recharge rates, it estimates the amount of land required to protect an equivalent present value total volume of groundwater. Finally, the approach identifies and appraises candidate parcels. The cost of acquiring such a parcel for purposes of protecting a volume of groundwater equivalent to what was lost represents the measure of damages.

[136] Freeman, A.M. III. *The Measurement of Environmental and Resource Values: Theory and Methods*. Resources for the Future: Washington, DC. 2003. p. 460.

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contamination is captured as part of the cost to remediate each release, it cannot be assumed that remediation captures WTP. In many cases, performing remediation to "safe" levels does not fully eliminate contamination, and therefore does not restore the resource to its original value. Therefore, while a significant portion of the value of the quantity of groundwater protected may be captured by the avoided remediation costs, it may not reflect the full WTP of groundwater protection.

Exhibit 4-17 summarizes a screening assessment of the volume of groundwater contamination potentially avoided because of reductions in releases and groundwater contamination incidents. The analysis relies on the EPA risk assessment, which describes typical volumes of groundwater affected by releases of different sizes over various discovery time frames.[137] EPA's analysis estimates that, under the Selected Option, 19 billion gallons to 88 billion gallons of groundwater per year are protected under conservative assumptions of 10-gallon release volumes that migrate for only one year before discovery. Under the upper bound conditions of 5,000-gallon release volumes and 100-year lifetimes, up to 3.9 trillion gallons of groundwater per year would be potentially protected by the Selected Option.[138] We also calculate the impact of 50-gallon releases over one- and five-year time frames. These releases appear most consistent with empirical data in the draft 23-state Autopsy Report. Assuming that 50-gallon releases and one- to five-year time frames represent the average parameters of avoided releases, we estimate that approximately 50 to 240 billion gallons of groundwater would be protected annually from LUST-related releases due to the regulatory changes.[139]

[137] RTI International. "Risk Analysis to Support Potential Revisions to Underground Storage Tank (UST) Regulations." December 22, 2010.

[138] The risk assessment on which this analysis is based did not estimate groundwater contamination volumes outside of a one-mile radius about the point of release. The assessment notes that groundwater may be contaminated outside that radius, but it does not estimate this quantity. Generally, only releases greater than 1,000 gallons are affected by this phenomenon, i.e., groundwater contamination is likely underestimated for the 5,000 gallon, 100-year release scenario.

[139] The release volume data used in the groundwater protection assessment differs from the data used to calculate product loss and may lead to apparent inconsistencies. For instance, under the Selected Option, prevention of 900,000 gallons of product loss over 1,600 releases implies an average of over 500 gallons per release; however, in the groundwater protection analysis, EPA relies on estimates of groundwater contaminated based on releases of 50 gallons for the following two reasons: (1) the volumes of product loss based on Florida data are based on actual data, while the risk analysis relies on a simulation; and (2) the simulation assumes that product is released over a relatively short period of time (approximately one month), which likely overstates the effect of groundwater contamination for any given volume. Given these circumstances, EPA selected an average release volume to characterize groundwater contamination that is significantly lower than the volume implied by the analysis of product loss, but which reduces the risk of overstating positive impacts from groundwater protection.

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Exhibit 4-17

Volume Of Groundwater Protected (billion gallons per year)

	Expert 1	Expert 2	Expert 3	Expert 4	Average *(Range)*
Selected Option					
Total avoided releases and avoided groundwater incidents	2,000	770	1,900	3,600	2,100 *(770-3,600)*
1 year until discovery, 10 gal. release *(24,068,183 gal. GW contaminated)**	48	19	45	88	50 *(19-88)*
1 year until discovery, 50 gal. release *(48,785,436 gal. GW contaminated)**	97	38	92	180	100 *(38-180)*
5 years until discovery, 50 gal. release *(80,192,581 gal. GW contaminated)**	160	62	150	290	170 *(62-290)*
100 year until discovery, 5,000 gal. release *(1,056,971,192 gal. GW contaminated)**	2,100	820	2,000	3,900	2,200 *(820-3,900)*
Primary estimate (average of 50 gal. release over 1 and 5 years)	**130**	**50**	**120**	**240**	**130** *(50-240)*
Alternative 1					
Total avoided releases and avoided groundwater incidents	2,700	1,100	2,700	4,200	2,700 *(1,100-4,200)*
1 year until discovery, 10 gal. release *(24,068,183 gal. GW contaminated)**	66	28	66	100	65 *(28-100)*
1 year until discovery, 50 gal. release *(48,785,436 gal. GW contaminated)**	130	56	130	210	130 *(56-210)*
5 years until discovery, 50 gal. release *(80,192,581 gal. GW contaminated)**	220	92	220	340	220 *(92-340)*
100 year until discovery, 5,000 gal. release *(1,056,971,192 gal. GW contaminated)**	2,900	1,200	2,900	4,500	2,900 *(1,200-4,500)*
Primary estimate (average of 50 gal. release over 1 and 5 years)	**180**	**74**	**180**	**270**	**170** *(74-270)*
Alternative 2					
Total avoided releases and avoided groundwater incidents	1,200	260	1,500	2,800	1,400 *(260-2,800)*
1 year until discovery, 10 gal. release *(24,068,183 gal. GW contaminated)**	29	6	36	66	34 *(6-66)*
1 year until discovery, 50 gal. release *(48,785,436 gal. GW contaminated)**	59	13	73	130	70 *(13-130)*
5 years until discovery, 50 gal. release *(80,192,581 gal. GW contaminated)**	97	21	120	220	110 *(21-220)*
100 year until discovery, 5,000 gal. release *(1,056,971,192 gal. GW contaminated)**	1,300	270	1,600	2,900	1,500 *(270-2,900)*
Primary estimate (average of 50 gal. release over 1 and 5 years)	**78**	**17**	**96**	**180**	**92** *(17-180)*

* Release time to discovery and volume (*average groundwater volume contaminated*). Average groundwater volume contaminated per release based on: RTI International. "Risk Analysis to Support Potential Revisions to Underground Storage Tank (UST) Regulations." December 22, 2010.

Under the alternative baseline, assuming that 50 gallon releases and one- to five-year time frames represent the average parameters of avoided releases, approximately 34 to 160 billion gallons of groundwater would be protected annually under the Selected Option.

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4.11 Measuring Benefits through Housing Price Changes

A growing body of literature documents the effect that leaking USTs may have on local housing prices. Under certain assumptions, these price changes may serve as a proxy for households' willingness-to-pay (WTP) to avoid UST releases. The impact of avoiding or reducing releases on housing prices will, at least in part, overlap with some of the benefits discussed above, including avoided human health risks, ecological benefits, and groundwater quality protection (to the extent that the effects are borne by the private households). However, other factors not previously discussed may also contribute to property devaluation (e.g., aesthetics) due to UST releases. By avoiding releases and groundwater contamination incidents, the final UST regulation may generate benefits that could at least partially be reflected by avoided declines in property values.

To estimate the effect of leaking USTs on housing prices, existing studies rely on hedonic property value models, and examine how house prices vary with proximity to a leaking UST, or how prices respond to a release should one occur. Under certain assumptions, the change in price can be interpreted as a measure of WTP to avoid potential contamination. Hedonic property value models isolate the effect of UST leaks on housing prices by controlling for housing and neighborhood characteristics as well as the presence of the UST facility itself. Several previous studies have found that property values were approximately 10 percent to 17 percent lower, all else constant, at homes in the vicinity of leaking or "high-risk" UST systems.[140] Stated-preference studies on the effect of groundwater contamination from a leaking UST on housing values have found similar results.[141]

Two recent hedonic analyses of UST sites in Maryland attempt to provide insight into the effects of leaking USTs at various stages of the cleanup process by using panel data of home sales in three Maryland counties over 11 years. This dataset includes information on home sales prior to the discovery of UST leaks, as well as during and after leak investigation and cleanup. One of these two studies incorporated home-specific data on the level of groundwater contamination and the extent to which information about the leak was received.[142] Although this study found little impact of leaking USTs on home values in general, the study did find 9 percent to 12 percent depreciation at homes where the private groundwater well was tested for contamination after an UST leak. This depreciation occurred regardless of whether the well water was found to be contaminated. The second study, which relied on the same sales dataset

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[140] See, for example: Simons, Robert A., William Bowen, and Arthur Sementelli. "The Effect of Underground Storage Tanks on Residential Property Values in Cuyahoga County, Ohio." *Journal of Real Estate Research*, 1997, 14(1), 29-42; Simons, Robert A., William Bowen and Arthur Sementelli. "The Price and Liquidity Effects of UST Leaks from Gas Stations on Adjacent Contaminated Property." *The Appraisal Journal*, 1999, 67, 186-194; and Isakson, H. and M.D. Ecker. "The Effect of Leaking Underground Storage Tanks on the Values of Nearby Homes." Technical Report. Department of Mathematics. University of Northern Iowa. 2010. Accessed at: http://faculty.cns.uni.edu/~ecker/research.html.

[141] See: Guignet, Dennis. "The impacts of pollution and exposure pathways on home values: A stated preference analysis." *Ecological Economics*, 2012, 82, 53-6; Simons, Robert A. and Kimberly Winson-Geideman. 2005. "Determining Market Perceptions on Contamination of Residential Property Buyers Using Contingent Valuation Surveys," *Journal of Real Estate Research*, 27(2), 193-220.

[142] Guignet, Dennis. "What Do Property Values Really Tell Us? A Hedonic Study of Underground Storage Tanks." *Land Economics*, 2013, 89(2), 211-226.

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but used information on publicity following the leak rather than the testing of private wells, also found little impact of leaking USTs on home values in general. However, this study found that highly publicized releases decreased surrounding home values by more than 10 percent.[143] Both studies found that property devaluation was most likely to occur when homeowners were aware of the actual or potential contamination.

As a result, we expect that in the presence of adequate information, such as with highly publicized UST releases, there is the potential for property devaluation from releases due to environmental, human health, and aesthetic changes. Studies that examine those price changes could provide valuable insight into the WTP for avoiding such releases. However, because of the small body of available literature characterizing the potential magnitude of these effects, its limited geographic scope, and the large degree of spatial heterogeneity in the characteristics that would drive the benefits of avoided releases, a benefits transfer to estimate avoided property devaluation from UST releases nationwide would not be appropriate. Therefore, we are unable to quantify the potential benefit of the final UST regulation using hedonic property value studies.

4.12 Conclusion

Exhibit 4-18 summarizes the monetized avoided costs and benefits due to the final UST regulation. In total, EPA estimates approximately $120 million to $530 million in costs will be avoided as a consequence of the Selected Option. Although their value cannot be reliably monetized, roughly 50 billion to 240 billion gallons of groundwater per year will avoid contamination due to new requirements. Finally, the regulation will avoid costs associated with acute events, large-scale releases (for example, releases from AHFDSs and FCTs), and property devaluation, and will generate reductions in human health risks and ecological benefits that we could not quantify in our analysis.

Exhibit 4-18

Summary Of Positive Impacts

SELECTED OPTION

Type Of Impact	Expert 1	Expert 2	Expert 3	Expert 4	Average	Range
Monetized Avoided Costs Associated With Conventional USTs and EGTs ($ millions, present value 2012$)[a]						
Releases and groundwater incidents[b]	$330	$110	$260	$510	$300	$110 - $510
Vapor intrusion	$4.3	$1.7	$4.1	$7.9	$4.5	$1.7 - $7.9
Product loss	$2.3	$0.86	$2.9	$6.5	$3.1	$0.86 - $6.5
Total[c]	**$330**	**$120**	**$270**	**$530**	**$310**	**$120 - $530**
Non-Monetized Impacts[d]						
Groundwater protected (billion gallons)	130	50	120	240	130	50 - 240
Acute events and large-scale releases (e.g., releases from AHFDSs and FCTs)[e]	n/e	n/e	n/e	n/e	n/e	n/e
Ecological benefits[e]	n/e	n/e	n/e	n/e	n/e	n/e
Human health risks[e]	n/e	n/e	n/e	n/e	n/e	n/e

[143] Zabel, Jeffrey E. and Dennis Guignet. "A hedonic analysis of the impact of LUST sites on house prices." *Resource and Energy Economics*, 2012, 34, 549-564.

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Exhibit 4-18

Summary Of Positive Impacts

ALTERNATIVE 1						
Type Of Impact	**Expert 1**	**Expert 2**	**Expert 3**	**Expert 4**	**Average**	**Range**
Monetized Avoided Costs Associated With Conventional USTs and EGTs ($ millions, present value 2012$)[a]						
Releases and groundwater incidents[b]	$490	$200	$410	$650	$440	$200 - $650
Vapor intrusion - low assumptions	$5.9	$2.5	$5.9	$9.1	$5.9	$2.5 - $9.1
Product loss	$2.6	$0.78	$4.1	$7.6	$3.8	$0.78 - $7.6
Total[c]	**$500**	**$210**	**$420**	**$670**	**$450**	**$210 - $670**
Non-Monetized Impacts[d]						
Groundwater protected (billion gallons)	180	74	180	270	170	74 - 270
Acute events and large-scale releases (e.g., releases from AHFDSs and FCTs)[e]	n/e	n/e	n/e	n/e	n/e	n/e
Ecological benefits[e]	n/e	n/e	n/e	n/e	n/e	n/e
Human health risks[e]	n/e	n/e	n/e	n/e	n/e	n/e
ALTERNATIVE 2						
Type Of Impact	**Expert 1**	**Expert 2**	**Expert 3**	**Expert 4**	**Average**	**Range**
Monetized Avoided Costs Associated With Conventional USTs and EGTs ($ millions, present value 2012$)[a]						
Releases and groundwater incidents[b]	$210	$44	$220	$410	$220	$44 - $410
Vapor intrusion - low assumptions	$2.6	$0.56	$3.2	$6.0	$3.1	$0.56 - $6.0
Product loss	$1.5	$0.36	$2.5	$5.2	$2.4	$0.36 - $5.2
Total[c]	**$220**	**$45**	**$220**	**$420**	**$230**	**$45 - $420**
Non-Monetized Impacts[d]						
Groundwater protected (billion gallons)	78	17	96	180	92	17 - 180
Acute events and large-scale releases (e.g., releases from AHFDSs and FCTs)[e]	n/e	n/e	n/e	n/e	n/e	n/e
Ecological benefits[e]	n/e	n/e	n/e	n/e	n/e	n/e
Human health risks[e]	n/e	n/e	n/e	n/e	n/e	n/e

[a] Avoided remediation costs from releases and groundwater incidents are the costs related to site remediation. Avoided vapor intrusion costs include additional avoided costs associated with the remediation of vapor intrusion cases; the RIA does not address human health risk associated with vapor intrusion. Avoided product loss costs are also separate and additive.

[b] Expert 2 provided responses that generate benefits that are relatively low compared to estimated costs, unlike the other three experts. Conversations with this expert indicated that this discrepancy may be due to his assumptions about partial noncompliance. See Section 4.5.3 and Appendix H for additional discussion.

[c] Totals may not add up due to rounding. Cost estimates were derived using a seven percent discount rate.

[d] Due to data and resource constraints, EPA was unable to monetize some of the positive impacts of the final UST regulation. Chapter 4 provides a qualitative discussion of these benefits.

[e] Benefits not estimated are denoted by n/e.

4.12.1 Summary of Positive Impacts under the Alternative Baseline Scenario

Exhibit 4-19 summarizes the monetized avoided costs and benefits due to the final UST regulation under the alternative baseline. In total, EPA estimates approximately $81 million to $360 million in costs will be avoided as a consequence of the Selected Option under the alternative baseline. Approximately 34 billion to 160 billion gallons of groundwater per year will avoid contamination due to the proposed requirements in the Selected Option. Overall, positive impacts under the alternative baseline are roughly 69 percent of positive impacts when the original baseline is assumed.

Exhibit 4-19

Summary Of Positive Impacts Under Alternative Baseline

SELECTED OPTION						
Type Of Impact	**Expert 1**	**Expert 2**	**Expert 3**	**Expert 4**	**Average**	**Range**
Monetized Avoided Costs Associated With Conventional USTs and EGTs ($ millions, present value 2012$)[a]						
Releases and groundwater incidents[b]	$230	$79	$180	$350	$210	$79 - $350
Vapor intrusion	$3.0	$1.2	$2.8	$5.5	$3.1	$1.2 - $5.5
Product loss	$1.6	$0.59	$2.0	$4.5	$2.2	$0.59 - $4.5
Total[c]	**$230**	**$81**	**$190**	**$360**	**$220**	**$81 - $360**
Non-Monetized Impacts[d]						
Groundwater protected (billion gallons)	89	34	84	160	92	34 - 160
Acute events and large-scale releases (e.g., releases from AHFDSs and FCTs)[e]	n/e	n/e	n/e	n/e	n/e	n/e
Ecological benefits[e]	n/e	n/e	n/e	n/e	n/e	n/e
Human health risks[e]	n/e	n/e	n/e	n/e	n/e	n/e
ALTERNATIVE 1						
Type Of Impact	**Expert 1**	**Expert 2**	**Expert 3**	**Expert 4**	**Average**	**Range**
Monetized Avoided Costs Associated With Conventional USTs and EGTs ($ millions, present value 2012$)[a]						
Releases and groundwater incidents[b]	$340	$140	$290	$450	$300	$140 - $450
Vapor intrusion	$4.1	$1.7	$4.1	$6.3	$4.1	$1.7 - $6.3
Product loss	$1.8	$0.54	$2.9	$5.2	$2.6	$0.54 - $5.2
Total[c]	**$350**	**$140**	**$290**	**$460**	**$310**	**$140 - $460**
Non-Monetized Impacts[d]						
Groundwater protected (billion gallons)	120	51	120	190	120	51 - 190
Acute events and large-scale releases (e.g., releases from AHFDSs and FCTs)[e]	n/e	n/e	n/e	n/e	n/e	n/e
Ecological benefits[e]	n/e	n/e	n/e	n/e	n/e	n/e
Human health risks[e]	n/e	n/e	n/e	n/e	n/e	n/e
ALTERNATIVE 2						
Type Of Impact	**Expert 1**	**Expert 2**	**Expert 3**	**Expert 4**	**Average**	**Range**
Monetized Avoided Costs Associated With Conventional USTs and EGTs ($ millions, present value 2012$)[a]						
Releases and groundwater incidents[b]	$150	$31	$150	$280	$150	$31 - $280
Vapor intrusion	$1.8	$0.39	$2.2	$4.1	$2.1	$0.39 - $4.1
Product loss	$1.1	$0.25	$1.7	$3.6	$1.7	$0.25 - $3.6
Total[c]	**$150**	**$31**	**$150**	**$290**	**$160**	**$31 - $290**
Non-Monetized Impacts[d]						
Groundwater protected (billion gallons)	54	11	67	120	64	11 - 120
Acute events and large-scale releases (e.g., releases from AHFDSs and FCTs)[e]	n/e	n/e	n/e	n/e	n/e	n/e
Ecological benefits[e]	n/e	n/e	n/e	n/e	n/e	n/e
Human health risks[e]	n/e	n/e	n/e	n/e	n/e	n/e

[a] Avoided remediation costs from releases and groundwater incidents are the costs related to site remediation. Avoided vapor intrusion costs include additional avoided costs associated with the remediation of vapor intrusion cases; the RIA does not address human health risk associated with vapor intrusion. Avoided product loss costs are also separate and additive.

[b] Expert 2 provided responses that generate benefits that are relatively low compared to estimated costs, unlike the other three experts. Conversations with this expert indicated that this discrepancy may be due to his assumptions about partial noncompliance. See Section 4.5.3 and Appendix H for additional discussion.

[c] Totals may not add up due to rounding. Cost estimates were derived using a seven percent discount rate.

[d] Due to data and resource constraints, EPA was unable to monetize some of the positive impacts of the final UST regulation. Chapter 4 provides a qualitative discussion of these benefits.

[e] Benefits not estimated are denoted by n/e.

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Chapter 5. Distributional Impacts and Considerations

5.1 Introduction

This chapter considers specific impacts that may be created by the distribution of the costs and benefits of the final UST regulation. EPA has undertaken several analyses to examine how the pattern of costs and benefits may affect specific populations and sectors of the economy. Specifically, the chapter considers:

- **Economic impacts associated with the costs of the final UST regulation:** These could include changes in facility operation and closure of facilities due to cost increases under the regulation. In addition, the final UST regulation may create negative and positive employment impacts, including both reductions in employment to reduce costs and increases in employment to ensure implementation of regulatory provisions. Finally, the regulation may affect public spending related to cleanup of contaminated sites.

- **Energy impacts associated with the final UST regulation:** EPA considers the potential for this regulation to affect the supply, distribution, or use of energy, including changes in the price of fuel.

- **Impacts on small business and governments:** EPA's regulatory flexibility analysis considers the potential for regulatory costs to have a significant impact on a substantial number of small entities (SISNOSE).

- **Impacts on minority and low-income populations:** EPA considers the potential for the final UST regulation to have disproportionate impacts on minority or low-income populations.

- **Children's health impacts:** EPA considers the potential for the final UST regulation to have a significant or disproportionate impact on the health of children.

Note that the analyses in this chapter employ data and results from EPA's primary analysis assuming a constant number of tanks and releases over 20 years. This chapter does not consider impacts under the alternative baseline scenarios. In general, impacts under alternative baseline assumptions would be slightly smaller, reflecting the smaller universe of affected facilities over time.

5.2 Economic Impacts

In the context of regulatory analysis, an economic impact is an effect on the economic wellbeing, or welfare, of any stakeholder due to compliance with the final UST regulation. Direct economic impacts can be borne by producers (i.e., those who produce, distribute, or sell products associated with the regulation), by consumers (i.e., those who purchase products associated with the regulation), or both.

The economic impacts of the final UST regulation result from increases in compliance costs due to new regulation. In the short run, producers (i.e., owners or operators of facilities with UST systems) can respond to cost increases in one of two ways: by passing through some or all costs to customers (consumers) through increases in price, or by absorbing costs and reducing profitability. If producers cannot pass on to consumers any of their increased compliance costs, the regulation will chiefly affect producers in the short run, and economic impacts may include reduced profits, changes in operation, and in extreme cases, facility closure. If producers are able to increase prices on products to recover some or all compliance costs, the regulation will affect consumers by raising prices. The extent to which producers can pass through costs depends on the structure of the markets in which they operate.

As we discuss in subsequent sections, we do not believe that many firms will be able to pass increases in prices on to consumers through higher fuel prices. While local-level motor fuel retail stations may face similar increases in costs of compliance, consumers' sensitivity to changes in gasoline prices provides a significant disincentive for station operators to increase fuel prices.[144] Instead, compliance costs are likely to be passed on through cross-marketed goods whose demand is less sensitive to changes in prices, such as items for sale at gas station convenience stores.

EPA's assessment of the economic impacts associated with this regulation is presented as follows:

- **Distribution of affected facilities.** We first discuss the universe of affected facilities, with a focus on the retail motor fuels sector. This section also describes supply and demand dynamics within the retail motor fuels market and the likely economic responses to increased compliance costs.

- **Screening level economic impact analysis of average costs on facilities.** EPA presents a screening assessment of the impacts of average estimated facility-level costs on the facilities affected by the regulation.

- **Sensitivity analysis of economic impacts.** To address uncertainty related to the distribution of costs among UST facilities, we present a "worst-case" sensitivity analysis that identifies the maximum number of facilities that could face significant economic impacts due to regulatory costs. This section also briefly discusses implications for facility closures and changes in employment.

- **Impacts on public funding for cleanups.** The final UST regulation is estimated to result in significant cost savings associated with avoided cleanup requirements as releases decline. A significant portion of cleanup costs are currently borne by the public sector, using taxes and fees to fund state cleanup efforts. EPA examines

[144] A high degree of consumer sensitivity to changes in gasoline prices does not imply that prices are equal across gasoline stations in the same area. Factors that affect retail motor fuel prices at the station-level include traffic flows, population density, and intensity of local retail competition on the demand side, while supply can be affected by land cost, station setup, labor costs, and taxes. See: Fischer, Jeffrey. "The Economics of Price Zones and Territorial Restrictions in Gasoline Marketing." Federal Trade Commission. 2004. Accessed at: http://www.ftc.gov/be/workpapers/wp271.pdf. p. 15 – 16

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the potential reduction in public sector liabilities associated with the broader reduction in releases.

5.2.1 Distribution of UST Systems by Industry Sector

As shown in **Exhibit 2-3** in Chapter 2, the majority of UST systems are located at motor fuel retailers (i.e., gas stations). EPA estimates that, of the 577,981 UST systems active in 2013, 454,774 (roughly 80 percent) were located at approximately 148,000 motor fuel locations in the United States.[145] The remaining 123,207 UST systems (roughly 20 percent of the total) are spread across several industries, including the commercial sector (wholesale, retail, accommodation, and food services), manufacturing, transportation, communications and utilities, and hospitals.[146] Notably, the sectors other than retail motor fuels are difficult to characterize with regard to UST systems; depending on their uses, UST systems may occur in varying numbers at facilities of varying size and purpose across all sectors. Only in the retail motor fuel sector do UST systems serve a similar, central function at virtually all facilities in the sector.

In addition to comprising approximately 80 percent of all UST systems, establishments in the retail motor fuels sector also have the highest average number of UST systems per facility, with a facility average of 3.07 (roughly three systems per facility). In comparison, facilities in other sectors have, on average, between 1.47 and 1.81 systems.[147] Because many requirements in the final UST regulation occur at the UST system level, establishments in the retail motor fuels sector have the highest average compliance costs per facility. In total, this sector is likely to bear roughly 70 percent of total costs associated with the final UST regulation.[148]

Because the costs of the final UST regulation will primarily affect the retail motor fuels sector, and because this sector is characterized by a large number of independently-owned facilities and companies, this economic impact analysis focuses on the retail motor fuels sector.

5.2.2 Market Dynamics in the Retail Motor Fuels Sector

This section provides an overview of the U.S. wholesale and retail motor fuels markets, including market concentration, fuel distribution practices, and the implications of market structure for pricing.

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[145] EPA's count of UST systems includes states and territories, while the estimate of retail motor fuel locations includes only facilities in the continental U.S., Hawaii, and Alaska. Because only 4,963 UST systems (approximately 0.9 percent) are located in other U.S territories, we use 148,000 facilities as the total population.

[146] See Chapter 2.1 for more detail.

[147] See **Exhibit 2-3**. For example, we calculate 1.81 systems per commercial facility by dividing 1,450 systems by 801 facilities (agriculture sector).

[148] Total costs under the Selected Option are $160 million, with $130 million directly related to conventional USTs and EGTs (including the cost to read the regulations). Motor fuel retailers will bear approximately 80 percent of these $130 million in costs, which represent roughly 70 percent of total costs under the Selected Option.

Supply-side Characteristics: Ability of Producers to Pass Through Costs

The North American Industrial Classification System (NAICS) code for retail motor fuel sales (i.e., gasoline stations) is 447, and specifically applies to retailers of automotive fuel and automotive oils. Establishments classified under NAICS code 447 include facilities with and without convenience stores, and all have specialized equipment for the storing and dispensing of automotive fuels.[149]

According to the 2007 Economic Census, average revenues for establishments in NAICS sector 447 were approximately $3.8 million. On average, each establishment employed approximately eight employees.[150]

Market Concentration

Market concentration is an indicator of the ability of firms to raise prices in response to changes in the costs of doing business: in markets with fewer, larger companies (i.e., highly concentrated markets), large firms typically have greater ability to pass through price increases to consumers. One indicator of market concentration is the proportion of total sales made by individual firms within a particular market. In markets where concentration is high, few firms earn a relatively large proportion of the total revenues in a market and are sometimes able to pass price increases through to consumers because of limited competition from smaller firms.

The retail motor fuels sector is representative of the broader retail sector in market concentration. Specifically, 41 percent of all sales made by NAICS sector 447 are made by establishments owned by the fifty largest firms in the sector, compared with one-third of sales to the largest 50 firms in the broader retail sector.[151] This level of market concentration does not suggest that retailers will easily pass through price increases.[152]

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[149] 2007 Economic Census, Retail Trade, Industry series. Gasoline Stations: 2007. Accessed at: http://www.factfinder2.census.gov.

[150] While EPA relies on 2007 Economic Census figures for values per facility, this analysis relies on more recent and focused National Petroleum News Survey values for a count of the number of facilities.

[151] 2007 Economic Census, Retail Trade, Industry series. Gasoline Stations: 2007. Accessed at: http://www.factfinder2.census.gov.

[152] A common measure of market concentration can be obtained through the Herfindahl-Hirschman Index ("HHI"), which is calculated by squaring the market share of each firm competing in the market and then summing the resulting numbers. For example, if only two firms operate in a market and each has 50 percent of sales, then the index would register $50^2 + 50^2 = 5{,}000$. The U.S. Department of Justice's merger guidelines categorize markets in which HHI is between 1,000 and 1,800 points as moderately concentrated, and those in which the HHI is in excess of 1,800 points as concentrated. Because the four largest firms in NAICS sector 447 generate only 10 percent of the sales in that market, the HHI will be well below 1,000 for this sector. We conclude that firms' relatively small market share translates into weak pricing power. For additional information, see: U.S. Department of Justice. Herfindahl-Hirschman Index. Accessed at: http://www.justice.gov/ atr/public/testimony/hhi.htm.

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Geographical Concentration

Gasoline stations are generally distributed across the United States in proportion to population. The most populous states have more establishments and higher proportions of gasoline sales.[153] While no data are available regarding the distribution of facilities by size, the retail gasoline market is relatively homogeneous nationwide, and it is likely that facilities of different sizes are distributed according to population as well.

Ownership Structure

The 2013 NACS Retails Fuel Report published by the National Association of Convenience Stores (NACS) classifies motor fuel retailers into three broad categories, depending on the manner in which they obtain their wholesale product:[154]

- **Refinery-Owned:** Less than one percent of facilities are retail operations directly owned by large oil producers. These stations receive wholesale product directly from the oil company's refinery, and their profit is part of the oil company's profit. At these facilities, the parent corporation manages all aspects of the customer experience and establishes a consistent brand identity.

- **Branded Independent Retailers:** Approximately 50 percent of facilities are branded independent retailers. These facilities are owned by independent operators and contract with a refinery to sell a particular brand of gasoline. This owner leverages the supplier's marketing and ensures constant supply in exchange for a surcharge per gallon paid to the supplier. Branded retailers' contracts with refiners typically contain clauses that specify the margins retailers can charge above wholesale prices.

- **Unbranded Independent Retailers:** Approximately 50 percent of facilities are unbranded independent retailers. These retailers purchase gasoline on the open market, without committing to a particular supplier.

Wholesale gasoline is a commodity, but varies in price regionally based on a combination of refinery locations, specific fuel mixes (e.g., to meet air quality standards), and the type of distributors in a region. Types of wholesalers include:[155]

- **Refinery-owned wholesalers**: Refiners (typically large oil companies) distribute directly to their own retail outlets in all regions, and in some areas may also

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[153] U.S. Census Bureau. Industry Statistics Sampler: NAICS 447, Geographic Distribution - Gasoline Stations: 1997. Accessed at: http://www.census.gov/epcd/ec97/industry/E447.HTM.

[154] National Association of Convenience Stores. "Who Sells America's Fuel?" Accessed at: http://www.nacsonline.com/YourBusiness/FuelsReports/GasPrices_2014/Retail-Operations/Pages/Who-Sells-Americas-Fuel.aspx

[155] Kleit, Andrew N. "The Economics of Gasoline: Retailing Petroleum Distribution and Retailing Issues in the U.S." December 2003.

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distribute directly to independent branded and unbranded retailers (competing with other suppliers in the unbranded market).

- **Area Franchisees**: Otherwise known as "jobbers," these firms obtain the right from oil companies to franchise a brand of motor fuel in a particular area. Jobbers are responsible for siting and building new facilities and marketing the brand, which further removes refiners from operating activities. The term is also used to describe wholesale distributors of motor fuels that offer multiple brands.

While some regions have significant competition among distributors, the market power of refiners and the contract structure of many retailers means that retailers in general have little control over the price of their fuel supply.[156] As a consequence, any cost increases must be absorbed by retailers or passed through to customers.

Demand-side Characteristics: Consumer Response to Price Increases

Consumer reactions to price changes are critical in determining whether a producer (i.e., retailer) can pass on costs. The degree to which consumers change the quantity they consume when the price of a good increases is known as the price elasticity of demand. Economists define demand as inelastic if the quantity demanded changes less than price (e.g., quantity demanded changes by one percent when prices rise (or fall) by 1.4 percent). Similarly, demand is said to be elastic if quantity demanded changes proportionally more for a relative change in price.

Motor fuel retailers rely on sales of gasoline for most revenues, though most also sell other automobile-related or convenience products. Research has documented that broad (national) market demand for gasoline is relatively price-inelastic in the short-run: consumers do not make immediate, significant changes in gasoline purchases if prices increase.[157] On its face, this dynamic would suggest that a retailer could pass through any cost increases to consumers. However, the structure of the market for gasoline prohibits significant price fluctuations at the facility level. While national demand is relatively consistent, consumers are highly sensitive to price differences within local markets.[158] Small increases in price at one location can produce relatively large changes in quantity demanded for a particular facility as consumers seek other local retailers with lower costs.

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[156] Other suppliers, e.g. for convenience store items, may be easier with which to negotiate but may not be available to all motor fuel retailers.

[157] Dahl, Carol and Thomas Sterner. "Analyzing Gasoline Demand Elasticities: A Survey." Energy Economics, July 1991. p. 203 – 210.

[158] As noted above, a high degree of consumer sensitivity to changes in gasoline prices does not imply that prices are equal across gasoline stations in the same area. See: Fischer, Jeffrey. "The Economics of Price Zones and Territorial Restrictions in Gasoline Marketing." Federal Trade Commission. 2004. Accessed at: http://www.ftc.gov/be/workpapers/wp271.pdf.

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A recent National Association of Convenience Stores (NACS) survey provides insights into the price pressures faced by local retailers:[159]

- 66 percent of respondents stated that price was the most important factor in their gasoline-purchasing choices.
- 67 percent stated that they would take the time to make a left turn on a busy street to save five cents per gallon of gasoline.
- 39 percent said they would drive 10 minutes out of their way (a 20-minute round trip plus cost of fuel) to save five cents per gallon. This amounts to savings of less than one dollar in terms of fuel for nearly all passenger vehicles on the road today.

Local competition for price-sensitive customers discourages retailers from increasing gasoline prices, except in cases such as wholesale price increases or tax increases where changes are uniform across facilities.[160] Because compliance costs may vary by facility depending on existing technology and practice, it is not likely that retailers will opt to pass through compliance costs by raising gasoline prices. While retailers may be able to increase the prices of other products (e.g., motor oil or convenience store products), it is also likely that some retailers will be forced to absorb some or all of the costs associated with the regulation.

Retailers in relative isolation may be better positioned to pass on increases in cost to consumers. Research shows that store-level pricing is sensitive to the concentration of competition. In areas where motor fuel retailers are relatively sparse, facilities may be better able to pass cost increases on to consumers, for whom the opportunity cost of finding an alternative store is higher when they must travel farther.[161]

However, because consumers are especially price sensitive about gasoline and it is not clear what other options owners or operators have to increase prices, we assume that owners or operators will likely bear the economic impacts of the regulation. We therefore examine producer impacts, including the possibility that some facilities may close due to cost increases.[162]

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[159] National Association of Convenience Stores. "Consumer Research: Price Still Dominates Gas Purchasing Decisions." Accessed at: http://www.nacsonline.com/YourBusiness/FuelsReports/GasPrices_2014/Consumer-Research/Pages/Consumer-Research-Price-Still-Dominates-Gas-Purchasing-Decisions.aspx.

[160] This may vary, depending on the region. For example, in Vancouver, gasoline prices are uniform and rigid (due to tacit collusion among wholesalers), while prices in Ottawa are dispersed and volatile (due to the price-disrupting behavior of "maverick" firms). See: Eckert, Andrew and Douglas S. West. "A Tale of Two Cities: Price Uniformity and Price Volatility in Gasoline Retailing." *Annals of Regional Science*, 2004, vol. 38, issue 1, p. 25-46.

[161] See: Hoch *et al.* "Determinants of Store-level Price Elasticity." *Journal of Marketing Research*, Vol. 32 (1), 1995: p. 17 – 29.

[162] A more detailed analysis of consumer impacts is prohibitively difficult for two reasons. First, the precise set of goods and services whose prices may increase is difficult to characterize. Second, gasoline aside, the main draw to products sold at retail motor fuel facilities is convenience, i.e., ease of access. Most non-fuel products can be purchased for lower prices at grocery stores, for example. Consumers can therefore shop at other types of facilities for the same goods, but typically opt to pay a premium for purchases at a convenient location. Note that, even

5.2.3 Assessment of Market Exits and Employment Impacts

In a market setting where producers cannot reliably pass through costs, the most significant economic impacts are related to reduced facility profits. In some cases, managers can cut supply or employment costs (this could result in smaller worker paychecks). In cases where costs exceed facility profits, it is likely that in the long term a facility would exit the market. A critical factor, therefore, is an estimate of average firm or facility profits.

It is difficult to estimate the profitability of retail motor fuel stations because many are small and privately held and are not required to report profits publicly. However, some evidence suggests that profit margins are below five percent, and data suggest that average after-tax profit margins reported to the IRS for gas stations are roughly 1.8 percent.[163] Holding all other things equal, an annual cost greater than 1.8 percent of gross sales (i.e., a cost greater than $1,800 for a firm earning $100,000 a year) would exceed average reported profits and would therefore cause a motor fuel retailer to operate at a loss. If the facility cannot adjust its prices or lower costs, it will eventually exit the market.[164]

Consistent with the assessment of small business impacts in Section 5.4 of this chapter, EPA considers the impact of the final UST regulation on small facilities in order to identify the most likely facilities to exit the market. Assuming that all motor retail facilities, regardless of income, have an "average" configuration of approximately three tanks, EPA calculates the average total cost per facility to be $715 (2012 dollars), or $658 in 2007 dollars, under the Selected Option (reflecting a cost of approximately $232 per UST system in 2012 dollars, or $214 per system in 2007 dollars).[165,166]

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though consumers will be able to purchase equivalent goods at different locations, there is a reduction in consumer surplus associated with the loss of convenience in the purchase.

[163] For corporations reporting net income, profit margins before non-cash items (depreciation and amortization) and income tax (or credits) were approximately 1.8 percent (2.4 percent less amortization and depreciation, but not taxes paid). Earnings before depreciation and amortization account for the fact that firms can postpone capital expenditures to save cash, and would likely do so while adapting to higher costs. If non-cash items and taxes are included, earnings drop to roughly one (1.3) percent. Our approach averages the two options (2.4 percent, before amortization and discounting, and 1.3 percent, after including non-cash items and taxes) to yield a margin of 1.8 percent, reflecting an assumption that firms will do something to adapt to higher costs while they sort out how to adjust prices, and that firms typically minimize profits reported to the IRS. See: U.S. Internal Revenue Service. SOI TaxStats. Table 7: Corporation Returns with Net Income for 2009. Accessed at: http://www.irs.gov/taxstats/article/0,,id=170693,00.html. See also 2002 - 2012 RMA *Statement Studies*, Sector 447, for a range of profitability data from facilities of different sizes.

[164] Throughout this chapter, EPA refers interchangeably to reductions in net profit and the proportion of revenues that the costs of the final UST regulation will create. In both cases, we refer to the impact of the cost of the final UST regulation on the profitability of a facility.

[165] Specifically, we assume 3.07 UST systems per facility.

[166] Under Alternative 1 the average retail motor fuel facility cost would be $1,509, and under Alternative 2 it would be $369 (2012 dollars). In Indian country, where facilities are required to meet more requirements than elsewhere; average cost per facility is $2,257 under the Selected Option, $3,326 under Alternative 1, and $1,801 under Alternative 2 (2012 dollars).

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Using data from the 2007 Economic Census and the regulatory flexibility screening analysis methodology described in Section 5.4, EPA concludes that a facility-level cost of $658 ($715 in 2012 dollars) would exceed 1.8 percent of total reported 2007 revenues (i.e., be equal to or greater than total profits) for 19 firms, representing less than one-tenth of one percent of the universe of 148,000 motor fuel retail facilities.[167] In comparison, approximately 2,024 facilities per year closed over the period between 2005 and 2013.[168] In some cases, any exits related to regulatory costs may coincide with exits that would have occurred in the baseline. Furthermore, it is likely that many of the affected facilities will also have options to pass through at least a portion of costs, and many small facilities may have fewer than three UST systems. Therefore, EPA concludes that the market impacts associated with this regulation are likely to be diffuse and minimal, assuming a relatively uniform distribution of costs nationwide.

Sensitivity Analysis: Considering Impacts of a "Worst-Case Scenario"

EPA's finding of minimal market impacts rests on an assessment of average facilities with average regulatory compliance costs. If the costs of the final UST regulation are concentrated on certain facilities, it is possible that additional impacts (e.g., market exits) could occur. EPA therefore employs several sensitivity analyses to consider alternative, "worst-case" distributions of regulatory costs across facilities.

To examine the extent to which the distribution of regulatory costs can be "concentrated" on specific facilities, EPA constructs a "worst-case distribution" in which regulatory costs are concentrated on a subset of facilities.[169] To obtain this distribution, we artificially assign costs to create the largest cost for the largest number of facilities, by assuming that the same facilities in

[167] An analogous statement of this outcome is that all facilities with revenues below approximately $36,300 per year would incur new costs equal to or in excess of profits of 1.8 percent of total revenue. Note that U.S. Census data indicate that all firms in the motor fuel sector that earn less than $36,300 are single-location firms.

[168] NPN reported a station count of 147,902 in 2013, compared with 164,094 in 2005. Note that 168,987 represents the total number of establishments offering gas filling services reported by NACS. We adjusted this number downward by the 4,893 "hypermarketer" facilities reported in existence by NACS in 2012 to reach the 164,094 retail motor fuel stations nationally. For the purposes of these calculations, we adjust both station counts downward for the number of "hypermarketers" providing retail motor fuel in 2013, which are not gas stations but rather supermarkets or wholesalers with filling stations. These figures imply a decrease of approximately 16,000 stations over eight years, or approximately 2,024 (1.2 percent) per year. See: National Petroleum News. "MarketFacts 2013"; and National Petroleum News. Market Pulse. "2005 U.S. Motor Fuel Station Count: 168,987," both accessed at: http://www.npnweb.com/. Additionally, see "The U.S. Petroleum Industry: Statistics, Definitions" from the National Association of Convenience Stores (NACS), accessed at: http://www.nacsonline.com/YourBusiness/FuelsReports/GasPrices_2014/Retail-Operations/Pages/Who-Sells-Americas-Fuel.aspx.

[169] Ideally, EPA would evaluate which facilities are likely to incur significant impacts by examining the specific changes each will be required to make to achieve compliance. These costs would be compared with the facility's revenue and profit margin to establish whether it can incur the additional costs and remain in business. To EPA's knowledge, no data of this resolution are available for the large population of facilities with UST systems.

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the state make every regulatory change.[170] We further assume that the smallest facilities in the U.S. are the facilities that must make the regulatory changes.[171]

Exhibit 5-1 displays the universe of retail motor fuel UST facilities in the United States when costs are allocated to concentrate impacts. This creates an allocation of costs that varies broadly, from as little as $30 to over $4,500 per facility.[172]

[170] For example, consider a state with 850 UST facilities that will be subject to three hypothetical technical requirements: Requirement A will affect 500 facilities and cost $50 per facility; Requirement B will affect 250 facilities and cost $100 per facility; and Requirement C will affect 100 facilities and cost $200 per facility. The average cost for all of these facilities is $82 (((50*500) + (250*100) + (100*200))/850). However, the highest cost possible in this state is $350 (costs of $50 from Requirement A, $100 from Requirement B, and $200 from Requirement C), and the largest number of facilities that could incur this cost is 100 (the smallest of the universes affected by Requirements A, B, or C). The next highest cost is $150 (costs of $100 from Requirement B and $50 from Requirement A), which affect 150 facilities, excluding those also affected by Requirement C. The last group would be affected only by Requirement A, with 250 facilities at a cost of $50 per facility. Such an allocation of costs creates an unlikely outcome with a high potential for market exits. Appendix K provides the detailed summary of this threshold calculation.

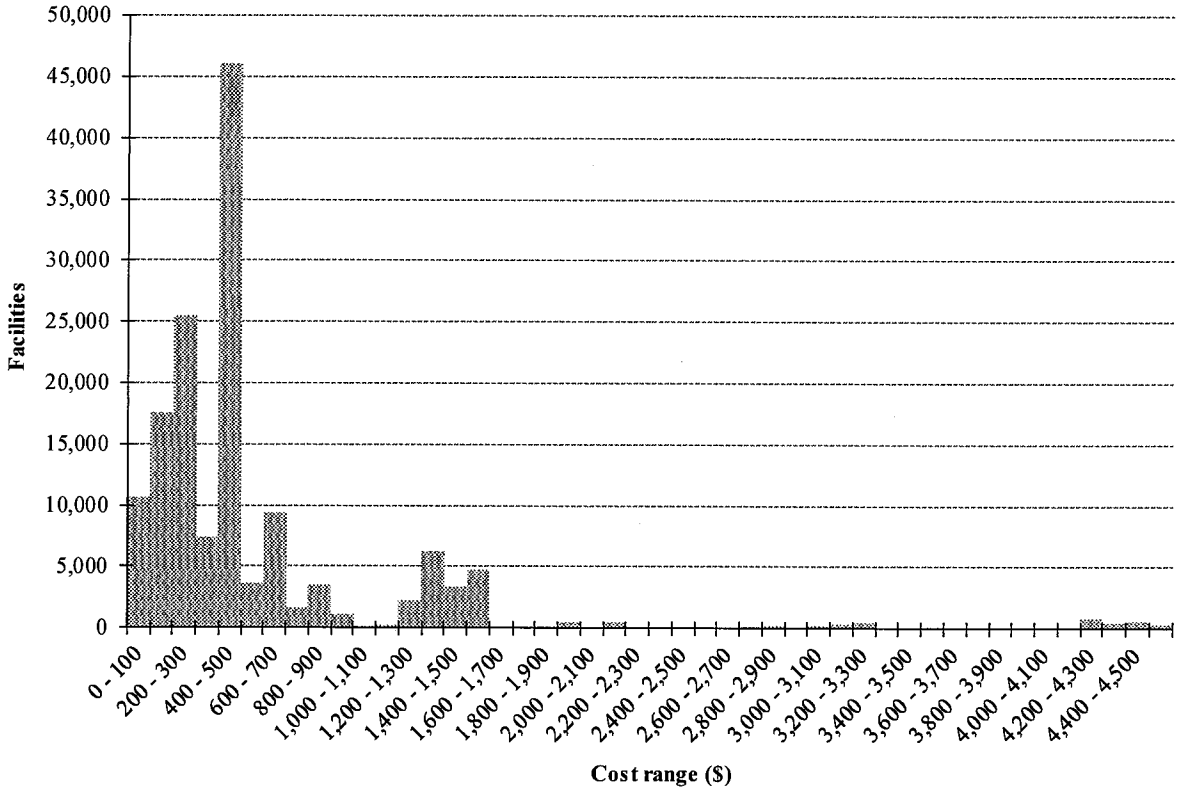
[171] EPA also examined a sensitivity analysis that would specifically consider the effects of "front-loading" capital cost requirements, but this scenario would have no effect on the results of the "worst-case" sensitivity analysis. The "worst-case" scenario examined here already assumes simultaneous implementation of all requirements under the final UST regulation, including several which actually have delayed implementation schedule (e.g., secondary containment tests). In addition, the analysis includes annualized costs for capital requirements for Indian country systems (e.g., secondary containment). The "worst-case" scenario does not address the replacement of closure of lined tanks that cannot be repaired according to a code of practice, and does not assume that full capital costs are incurred in a single year for affected tanks, but the facilities that would be affected by these changes are already among the highest cost facilities identified, and are already therefore included in the number of facilities potentially affected under this worst-case assumption.

[172] One possible concern is whether facilities that are likely to face high costs are geographically concentrated in certain states or regions. To assess this, we examined the geographic distribution of the six percent of facilities that would incur the highest costs if costs were artificially concentrated (specifically, 9,310 facilities incurring costs greater than $1,500). Our analysis includes 4,681 firms incurring costs between $1,500 and $1,600. For simplicity and to preserve a conservative estimate, we assume that these firms all incur costs of $1,600.) The proportion of "highest-cost facilities" does not vary substantially by state, because several regulatory requirements affect only a small percentage of the entire UST universe in any state. The concentration (percentage) of facilities that could be subject to costs over $1,600 is highest in American Samoa, where 6.3 percent of facilities could be affected at that cost. In the remaining 55 states and territories, facilities that could, in a worst-case scenario, incur costs over $1,600 represent less than 3.7 percent of total facilities within each state. Differential economic impacts across states are not likely to occur as a result of disproportionate state-level impacts from this regulation, even in a scenario of maximum concentration of costs across the fewest firms.

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Exhibit 5-1

Distribution Of Retail Motor Fuel UST Facility Costs Using "Worst-Case" Distribution



To assess economic impacts using this unlikely worst-case scenario, EPA pairs the distributions of facility size and costs to maximize the number of situations in which estimated costs would exceed 1.8 percent of gross sales (the average reported retail motor fuel facility profit). Facilities with costs exceeding 1.8 percent of revenues would potentially face a significant economic impact under worst-case assumptions.

Market Exits

Even under the artificially adverse scenario presented above, economic impacts to affected entities are limited. The least compliant facilities in the least regulated states would incur costs under $4,600 in the worst case.[173] This represents less than 1.8 percent of revenues for facilities earning more than $250,000 per year, suggesting that even these facilities could

[173] Facility costs of roughly $4,300 or less are representative of approximately 99 percent of worst-case, high-end cost outcomes. Facilities in Indian country are the only exception, as they will also be required to comply with additional regulations for operator training and secondary containment. Because this group of facilities represents only roughly one percent of facilities with costs at or above $4,300, we do not present them as the main highest-cost scenario.

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absorb all worst-case costs without becoming unprofitable.[174] To assess the worst-case potential impact, EPA assumed that the facilities with the highest costs (those in the right-hand tail of the distribution in **Exhibit 5-1**) are also the facilities with the lowest revenues and allocated costs to those facilities to maximize the number of potential exits. EPA estimates that 4,500 facilities earning less than $250,000 per year in the U.S. (in 2007 dollars) would be subject to costs exceeding 1.8 percent of revenues in the worst-case scenario.[175,176] To the extent that those facilities could not increase prices to offset higher costs, it is likely that at least some of them would exit the market. If all of these facilities exited the market, the closures would constitute roughly three percent of existing facilities.[177] However, this scenario imposes several unlikely assumptions, including:

- **All facilities with income less than $250,000 have average configurations of three UST systems.** In fact, small facilities likely have fewer than three tanks and would therefore be subject costs that are much lower than the facility-level costs estimated here. It is likely that the smallest facilities also operate only a single UST system, which would reduce their compliance costs by approximately 67 percent.[178] Under such circumstances, most small operators would not be subject to a significant economic impact even in the worst-case scenario.

- **No facility has any option to increase prices on any goods or services or to identify any options for savings.** While gasoline prices are unlikely to rise in response to this regulation, consumers may be willing to pay marginal cost

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[174] For simplicity, we assume that all facilities earning less than $250,000 per year (in 2007 dollars) earn less than $243,000, in order to enable the use of Census data to estimate the number of facilities subject to costs exceeding 1.8 percent of revenues. This is a conservative estimate; in reality, there are likely some facilities earning between $243,000 and $250,000 per year that would not be subject to costs exceeding 1.8 percent of revenues.

[175] The 2007 Economic Census identified 3,463 facilities that earned less than $250,000 in 2007. For the purposes of its SBA analysis, EPA revised this estimate upward by 38 percent to reconcile disparities between Census gas stations counts from 2007 and NACS gas station counts from 2013. Of the estimated 4,781 facilities earning less than $250,000 per year in 2007, we arrayed the highest cost facilities with the highest revenue facilities, to ensure an estimate of as many exits as possible, which yielded an estimate of approximately 4,500 facilities that could exit the market. See Appendix K for a detailed explanation of our methods.

[176] Census data on number of facilities per firm indicate that virtually all firms earning less than $250,000 per year in 2007 had only one facility. We therefore use "firm" and "facility" interchangeably in this context.

[177] In other words, of the 4,781 facilities earning less than $250,000 per year in 2007, EPA estimates that up to 4,500 facilities may incur compliance costs that exceed 1.8 percent of revenues (i.e., costs greater than $4,600 per facility). To the extent that those facilities could not increase prices to offset higher costs, it is likely that at least some of them would exit the market. See Appendix K for a detailed explanation of our methods.

[178] According to the 2013 NACS Convenience Store Industry Fact Book, the average motor fuel retailing facility has monthly throughput of approximately 128,000 gallons. As discussed in Chapter 2, we believe that the average motor fuel retailer operates approximately 3 UST systems. This equates to roughly 42,700 gallons of monthly throughput per system. In addition, based on information from a mid-size retail fuel marketer, EPA believes that a facility requires a minimum throughput of approximately 30,000 gallons per month to remain economically viable, which equates to upward of $50,000 in revenues per month given gasoline prices in excess of $2.00 since 2005. See: U.S. Energy Information Administration. Petroleum & Other Liquids. Retail prices for Regular Gasoline. Accessed at: http://www.eia.gov/dnav/pet/pet_pri_gnd_a_epmr_pte_dpgal_a.htm.

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increases on other products and services. Moreover, in remote rural areas, retailers may be able to directly pass costs on to consumers.

- **A profit margin of 1.8 percent is standard.** The worst-case scenario uses the average profits reported to the IRS to determine typical profitability. However, privately-held companies have a clear incentive to minimize taxable profits when filing income taxes with the IRS. Because net income (profit) is taxable, corporations that are not publicly traded typically take legitimate steps (e.g., year-end investments in equipment, employee bonuses) to reduce both net income and tax burdens. As a result, a 1.8 percent after-tax profit estimate based on IRS data is likely to understate average profitability.

Finally, this analysis does not adjust the 2007 Economic Census data on facility revenues for inflation, though costs are presented in 2012 dollars. Due to the variability of gasoline pricing, we adopt a conservative assumption that revenues have remained static in nominal terms since 2007.

While our sensitivity analysis suggests that an extreme worst-case scenario could impose significant economic impacts on as many as 4,500 facilities, it is unlikely that a significant number of actual market exits would result from the final UST regulation. It is more likely that closures will occur in specific cases where facilities with high upgrade costs also face high levels of local competition. These closures would likely be consistent with the current rate of industry consolidation of 1.2 percent per year.

Price Impacts

The high sensitivity of local demand to changes in retail motor fuel prices makes it unlikely that firms will react to the final UST regulation by raising gasoline prices. However, the cost of other goods and services could potentially increase as firms seek to offset regulatory costs through sales of other products. Retailers will likely increase the prices of goods that are relatively price inelastic, such as tobacco products, auto service charges, or snack foods and other convenience items.

Employment Impacts

In addition to addressing the costs and benefits of the final UST regulation, EPA has analyzed the impacts of this regulation on employment. While a standalone analysis of employment impacts is not included in a standard cost-benefit analysis, such an analysis is of particular concern in the current economic climate of sustained high unemployment. Executive Order 13563, "Improving Regulation and Regulatory Review" (January 18, 2011), states, "Our regulatory system must protect public health, welfare, safety, and our environment while promoting economic growth, innovation, competitiveness, and job creation." For this reason, we are examining the effects of these requirements on employment in the regulated sectors. A discussion of costs associated with this regulation (including labor costs) is included in Chapter 3, Section 3.2.2, with a sensitivity analysis regarding labor cost assumptions in Chapter 3, Section 3.5.1.

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The employment effects of environmental regulation are difficult to disentangle from other economic changes and business decisions that affect employment over time and across regions and industries. In light of these difficulties, economic theory provides a constructive framework for approaching these assessments and for better understanding the inherent complexities in such assessments. Neoclassical microeconomic theory describes how profit-maximizing firms adjust their use of productive inputs in response to changes in their economic conditions.[179] In this framework, labor demand impacts for regulated sectors can be decomposed into output and substitution effects. For the output effect, by affecting the marginal cost of production, regulation affects the profit-maximizing quantity of output. The substitution effect describes how, holding output constant, regulation affects the labor-intensity of production. Because the output and substitution effects may be both positive, both negative or some combination, standard neoclassical theory alone does not point to a definitive net effect of regulation on labor demand at regulated firms.

In the labor economics literature, there is an extensive body of peer-reviewed empirical work analyzing various aspects of labor demand, relying on the above theoretical framework.[180] This work focuses primarily on the effects of employment policies (e.g. labor taxes, minimum wage).[181] In contrast, the peer-reviewed empirical literature specifically estimating employment effects of environmental regulations is very limited. Several empirical studies, including Berman and Bui (2001) and Morgenstern et al (2002), suggest that net employment impacts may be zero or slightly positive but small even in the regulated sector.[182] Other research suggests that more highly regulated counties may generate fewer jobs than less regulated ones.[183] However, since these latter studies compare more regulated to less regulated counties, they overstate the net national impact of regulation to the extent that regulation causes plants to locate in one area of the country rather than another. List et al. (2003) find some evidence that this type of geographic relocation may be occurring.[184] Overall, the peer-reviewed literature does not contain evidence that environmental regulation has a large impact on net employment (either negative or positive) in the long run across the whole economy.

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[179] For a discussion, see: Layard, P.R.G., and A. A. Walters. 1978. Microeconomic Theory (McGraw-Hill, Inc.), Chapter 9.

[180] For a detailed treatment, see: Hamermesh. 1993. Labor Demand (Princeton, NJ: Princeton University Press), Chapter 2.

[181] For a concise overview, see: Ehrenberg, Ronald G., and Robert S. Smith. 2000. Modern Labor Economics: Theory and Public Policy (Addison Wesley Longman, Inc.), Chapters 3 and 4.

[182] Berman, E. and L. T. M. Bui (2001). "Environmental Regulation and Labor Demand: Evidence from the South Coast Air Basin." Journal of Public Economics 79(2): 265-295; and Morgenstern, Richard D., William A. Pizer, and Jhih-Shyang Shih. "Jobs Versus the Environment: An Industry-Level Perspective." Journal of Environmental Economics and Management 43 (2002): 412-436.

[183] Greenstone, M. 2002. "The Impacts of Environmental Regulations on Industrial Activity: Evidence from the 1970 and 1977 Clean Air Act Amendments and the Census of Manufactures," Journal of Political Economy 110(6): 1175-1219; and Walker, Reed. (2011)."Environmental Regulation and Labor Reallocation." American Economic Review: Papers and Proceedings 101(3): 442-447.

[184] List, J. A., D. L. Millimet, P. G. Fredriksson, and W. W. McHone. 2003. "Effects of Environmental Regulations on Manufacturing Plant Births: Evidence from a Propensity Score Matching Estimator." The Review of Economics and Statistics 85(4): 944-952.

Analytic challenges make it very difficult to accurately produce net employment estimates for the whole economy that would appropriately capture the way in which costs, compliance spending, and environmental benefits propagate through the macro-economy. Quantitative estimates are further complicated by the fact that macroeconomic models often have very little sectoral detail and usually assume that the economy is at full employment. The EPA is currently in the process of seeking input from an independent expert panel on modeling economy-wide impacts, including employment effects.[185]

As described in detail in Chapter 2, Section 2.3, this regulation affects sectors using active UST systems. Most UST systems in the United States are located at motor fuel retail establishments (i.e., gas stations), and virtually all motor fuel retail establishments use UST systems. EPA estimates that this sector employs approximately 1.1 million workers.[186]

The increased operating costs incurred by facilities in this sector to comply with this regulation may result in slightly increased prices for their goods and services, as previously discussed. These potential price increases may result in reduced demand and thus reduced output of the facilities' goods and services. This could translate into lower demand for labor, a result commonly referred to as the output, or demand, effect.[187] As discussed earlier, the price effect is expected to be small, and given the relatively inelastic demand for gasoline, the demand effect is likely to be small as well. The final UST regulation may also contribute to a small number of market exits, which could cause a temporary negative employment effect as these workers look for other positions. However, as noted above and discussed below, these exits are consistent with exits that are already occurring in the baseline.[188] In addition, given the competitive nature of the retail motor fuel sector and the similar regulatory costs faced by each facility, many of these facilities may be able to pass through at least a portion of these costs (see Price Impacts section above).[189] As a result, the potential employment effect of market exits from the final UST regulation is likely small.

While the final UST regulation is unlikely to have measurable employment impacts related to market exits, it is possible that some facilities will attempt to offset regulatory costs by reducing hours or staff. Even under worst-case conditions, it is unclear whether facilities would reduce employment. Because most personnel employed at retail motor fuel facilities earn hourly wages rather than salaries, facilities have little to gain from eliminating positions and laying off

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[185] For more information, see: U.S. Environmental Protection Agency. Comment Request; Draft Supporting Materials for the Science Advisory Board Panel on the Role of Economy-Wide Modeling in U.S. EPA Analysis of Air Regulations. February 5, 2014. Accessed at: https://www.federalregister.gov/articles/2014/02/05/2014-02471/draft-supporting-materials-for-the-science-advisory-board-panel-on-the-role-of-economy-wide-modeling.

[186] The 2011 County Business Patterns report states that NAICS sector 447 employs 847,516 workers at 110,830 facilities. EPA extrapolated this value to the approximately 148,000 facilities counted by the 2012 NACS survey.

[187] See, for example: Berman, E. and L. T. M. Bui (2001). "Environmental Regulation and Labor Demand: Evidence from the South Coast Air Basin." Journal of Public Economics 79(2): 265-295.

[188] See footnote 169.

[189] Note that small marginal facilities are also likely to have fewer than three UST systems and thus face lower than average facility-level compliance costs.

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employees: operations require a particular number of people-hours, and the owner or operator will still need to allocate those tasks among the remaining workers.

Some requirements of the final UST regulation may have a positive impact on employment. For example, walkthrough inspections require labor as a primary input; this may lead to small increases in employment at regulated facilities.[190] In addition, the increased demand for testing services and training under the final UST regulation may also increase demand for labor. Since the final UST regulation could potentially affect the demand for labor both positively and negatively, the overall direction of net employment impacts is unclear, but is most likely very small relative to the size of the industry.

Long-run Economic Impacts

The final UST regulation is unlikely to generate substantial additional impacts in the long run. In an unlikely worst-case scenario it could accelerate ongoing consolidation trends in the retail motor fuel sector, but only if market exits result. NACS reports that 164,094 motor fuel stations operated in the United States in 2005.[191] By 2013, this number had fallen to 147,902, a decrease of 9.9 percent compared with 2005, or approximately 1.2 percent per year.[192] While broader market consolidation is related to ownership strategies among oil companies and general economic patterns, facilities facing significant periodic costs (e.g. UST system replacement) may be among those most likely to close. Similarly, facilities that face higher operating costs as a result of the regulation may opt to close. In such cases, exits caused by the regulation are likely to affect the most marginal firms and would likely coincide to some extent with exits that would have occurred in the absence of the regulation. These closures will occur in the context of the national decline in the number of facilities, such that the regulation is unlikely to cause a significant number of closures beyond those that will occur as part of the existing trend.

5.2.4 Assessment of Public Sector Cost Savings Related to Avoided Releases

A major positive effect of the final UST regulation derives from its impact on state funds created for the purpose of providing a financial responsibility mechanism to UST owners and operators.[193] Among 56 state and territory governments, 35 state funds are active and continue to accept claims.[194] In many of these states, owners and operators are required to pay for a portion

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[190] For example, EPA estimates that monthly walkthrough inspections of a facility will take roughly half an hour to complete, on average. A compliant owner or operator in a state that does not currently have this requirement will need to allocate roughly six man-hours of incremental effort per year to satisfy this portion of the final UST regulation.

[191] Note that 168,987 represents the total number of establishments offering gas filling services reported by NACS. We have adjusted this number downward by the 4,893 "hypermarketer" facilities reported in existence by NACS in 2012 to reach the 164,094 retail motor fuel stations nationally.

[192] See footnote 169.

[193] State funds are created by state legislation and are submitted to EPA for approval before they can be used as financial responsibility mechanisms.

[194] At the time of this assessment, Connecticut had not fully sunsetted its state fund. It was therefore included in this assessment; in other words, this assessment is based on 36 state funds. U.S. Environmental

of remedial actions through deductibles that generally range from zero to $100,000.[195] Given an average state-fund cost of remediation per site of $124,488 in 2012, however, state funds are frequently required to finance some portion of remediation costs.[196] In most cases, states generate money for their funds by levying tank registration and petroleum fees, which are then used to provide payments for remediation of releases beyond the deductibles paid by responsible parties. In states where funds rely on gas taxes and accept claims related to releases, these expenditures represent subsidies from the public to owners or operators responsible for releases.

The extent to which this regulation reduces the occurrence of new releases produces two welcome effects:

- **Assignment of costs**. Fewer releases imply lower expenditures from state funds. This represents a reduction in this public subsidy and a reassignment of costs from the public remediation costs to private entity prevention costs. This improves market signaling and efficiency by requiring owners and operators to focus on release prevention.

- **Competitive effects**. High-performing owners or operators are less likely to incur significant regulatory costs than low-performing owners or operators. As a result, the regulatory costs and cost savings improve the alignment of incentives to focus on private-sector prevention costs and reduce public-sector remediation costs.

To illustrate the potential magnitude of the public expenditures that could be affected by the regulation (i.e., distributional effects), we examine states that have active state funds and categorize them into those that finance their funds via petroleum and tank fees ("Tier 1"), or via only a tank fee ("Tier 2").[197]

We assume that states that are required to comply with a larger number of the new requirements will experience a greater reduction of releases, all other things equal. To estimate the distribution of avoided releases, we calculate the average number of requirements with which

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Protection Agency. "State UST Financial Assurance Funds." Accessed at: http://www.epa.gov/oust/states/fndstatus.htm.

[195] Association of State and Territorial Solid Waste Management Officials. *State Fund Survey Results 2012.* Table 1: Design Characteristics of State Financial Assurance Funds. Accessed at: http://www.astswmo.org/Files/Policies_and_Publications/Tanks/2012_State_Funds_Survey/2012-Table1-Part1.pdf.

[196] Association of State and Territorial Solid Waste Management Officials. *State Fund Survey Results 2012.* Summary of State Fund Survey Results. Accessed at: http://www.astswmo.org/Files/Policies_and_Publications/Tanks/2012_State_Funds_Survey/2012-SummaryTable.pdf. For example, representatives of the state of New Hampshire indicated that in most cases, the State Fund incurs remediation costs, except that the owner or operator typically bears the cost of immediately stopping the leak. In addition, New Hampshire indicated the owner or operator typically pays a $5,000 deductible towards the final remediation cost, and in New Mexico, the owner or operator typically pays a deductible between $0 and $10,000.

[197] For states with active financial assurance funds, see: U.S. Environmental Protection Agency. "Status of State Fund Programs." Accessed on August 12, 2014. Accessed at: http://www.epa.gov/oust/states/fndstatus.htm.

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the systems in each state will need to comply.[198] We assign avoided releases based on both the number of systems in a state and the average number of requirements on each system, and we value releases based on the national profile of avoided releases and avoided groundwater incidents.[199] Using ASTSWMO data, we subtract from our estimate of the potential cost borne by the public the deductible that owners or operators would be expected to pay.[200] See Appendix N for a discussion of the methodology used.

Exhibit 5-2 presents the results of our screening-level assessment. Among states with active state funds that fall into Tier 1 or Tier 2, we find that the potential reduction in public expenditures could reach $65 million to $290 million ($170 million on average) under the Selected Option, with $50 million to $220 million ($130 million on average) in Tier 1 and $14 million to $64 million ($38 million on average) in Tier 2.[201] Reductions in public expenditures would equal approximately $120 million to $370 million ($250 on average) under Alternative 1 and $26 million to $240 million ($130 on average) under Alternative 2. These savings would be slightly lower in a scenario where deductibles are in the upper end of their ranges. We note that, to realize the savings in public expenditures in the near term, state government action would be required to lower petroleum fees. Alternatively, to the extent that funds are not constrained in their use, a redistribution of funds (e.g., to existing sites awaiting cleanup) could also represent a significant public benefit through more rapid completion of existing sites. The values presented in this table reflect discounting to account for regulatory compliance schedules.

This screening-level analysis is intended only to identify the potential magnitude of impacts on state fund liabilities. A more detailed analysis of specific state program costs and the likely distribution of avoided releases would be necessary to precisely measure potential savings. Overall, the values in **Exhibit 5-2** suggest that requiring owners and operators to focus on prevention reduces costs to state financial assurance funds, on average, by over $160 million under the Selected Option, $230 million for Alternative 1, and $120 million for Alternative 2.

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[198] We use the number of times a system is affected rather than the actual number of systems affected because we lack the data to determine which units are affected by each requirement. For example, if two requirements each affect 1,000 and 500 units, respectively, they may ultimately affect between 1,000 and 1,500 units, depending upon whether any overlap exists among the two regulated universes.

[199] We calculate this as avoided costs due to avoided releases divided by number of releases avoided. The procedure is similar for avoided groundwater remediation costs.

[200] We rely on the ASTSWMO Fund Survey Results 2012 for the data that underlie our construction of tiers. These data are available at: http://www.astswmo.org/publications_tanks.htm.

[201] Due to our calculation methods, two states with very high deductibles (Minnesota and Virginia) showed deductible amounts and avoided releases that exceed their estimated avoided release costs. We exclude them from our calculations, such that our estimates for likely underestimate the potential for redistributive effects.

Exhibit 5-2

Summary Of State Financial Assurance Fund Distributional Effects

Fund Revenue Mechanisms	Selected Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Low deductible scenario (High distributional effects)			
Tier 1 (petroleum & tank fee): average value *(range of all values in italics)*	$130 *($50 - $220)*	$200 *($91 - $290)*	$96 *($19 - $180)*
Tier 2 (tank fee only): average value *(range of all values in italics)*	$38 *($14 - $64)*	$58 *($27 - $85)*	$32 *($6.5 - $59)*
Total *(range of all values in italics)*	**$170** *($65 - $290)*	**$250** *($120 - $370)*	**$130** *($26 - $240)*
High deductible scenario (Low distributional effects)			
Tier 1 (petroleum & tank fee): average value *(range of all values in italics)*	$120 *($46 - $200)*	$180 *($86 - $260)*	$88 *($18 - $160)*
Tier 2 (tank fee only): average value *(range of all values in italics)*	$36 *($14 - $59)*	$55 *($26 - $80)*	$30 *($6.1 - $55)*
Total *(range of all values in italics)*	**$160** *($60 - $260)*	**$230** *($110 - $340)*	**$120** *($24 - $210)*

5.2.5 Economic Impact Summary

EPA's sensitivity analyses show that it is unlikely that the final UST regulation will have substantial negative economic impacts on the regulated community, in part because the costs of the regulation appear to be evenly distributed across a large population of facilities, and remain modest at the facility level. Even under a highly improbable worst-case scenario in which the smallest facilities incur the highest possible costs and would have no options for passing through any cost increases, approximately three percent of the universe of retail motor fuel facilities would face costs surpassing publicly-reported (and therefore likely understated) industry average profit margins. Any market exits under even this scenario would likely coincide with the current market exit rate of approximately 2,024 facilities annually, and would likely affect out-of-date facilities that are on the brink of exiting. Therefore, the regulation will not likely create a significant additional contraction of the total market.

A more likely response by affected firms will be to adapt by increasing prices on higher margin products and services. While overall employment impacts are unclear, it is possible that there may be an increase in labor demand due to the additional requirements placed on owners and operators, and additional demand for third-party testing services.

Finally, it appears that the final UST regulation could have a positive impact on state governments that currently fund a portion of UST-related remediation costs through gasoline taxes and fees. A decrease in the number and severity of releases represents cost savings to states due to decreased demand on state financial assurance funds. Our initial screening assessment suggests that annual costs to states could be reduced by over $160 million. This represents a reduction in a public subsidy and an improvement in market signaling.

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5.3 Energy Impact Analysis

Executive Order 13211, *Actions Concerning Regulations That Affect Energy Supply, Distribution, Or Use* (May 18, 2001), addresses the need for regulators to consider the potential energy impacts of the final UST regulation and resulting actions. Under Executive Order 13211, agencies are required to prepare a Statement of Energy Effects when a regulatory action may have significant adverse effects on energy supply, distribution, or use, including impacts on price and foreign supplies. Additionally, the requirements obligate agencies to consider reasonable alternatives to regulatory actions with adverse effects and the impacts that such alternatives might have on energy supply, distribution, or use.

The final UST regulation affects underground storage tanks used in the storage of motor fuel or emergency generator fuel. However, it is unlikely that this regulation will have significant impacts on energy supply, distribution, or use. To assess the energy impacts of the final UST regulation, EPA considers potential changes in energy supply and use associated with the total costs estimated in Chapter 3. The following summarizes EPA's assessment of the energy impacts that the final UST regulation will have in energy supply, distribution, and use.

Energy Supply and Distribution

The final UST regulation consists of additional regulatory requirements that apply to the owners and operators of underground storage tanks. To the extent that the final UST regulation affects the motor fuel sector, it does so at the retail motor fuel sales level, rather than the level of refineries or distributors who supply the retail stations with motor fuel. Correspondingly, we do not expect the final UST regulation to have any impacts on energy supply or distribution.

In terms of local motor fuel availability, we believe two outcomes are possible. If a motor fuel station is located in an area where competition from other stations exists, fuel prices will not likely be affected. Rather, owners and operators will seek to recover the costs of the final UST regulation by increasing the prices of services or convenience items. If a station does not sell other products or services through which it can recover these costs, it may become subject to a significant economic impact. If this impact exceeds the profit margin of the facility, it may become unprofitable in the long term and exit the market. EPA's analyses suggests that the number of facilities likely to be affected is small, and supply will not be disrupted because sufficient supply from other competitors exists to meet demand.

We do not expect market exits to occur in low-competition environments due to the market power of stations and the marginal nature of the increase in cost. If a motor fuel station is located in an area where competition is not intense (e.g., a rural setting), it may opt to directly pass on higher costs through increases in fuel or convenience goods prices. As we discuss below, even if the entire cost of the regulation is priced through to consumers, the change in fuel prices is not likely to be measurable.

Energy Use

The additional regulatory requirements contained in the final UST regulation may increase compliance costs for owners and operators of retail motor fuel stations. If the owners and operators of retail motor fuel stations affected by the final UST regulation can successfully

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pass through their increased compliance costs, energy use may be affected through higher energy prices caused by the final UST regulation. However, we do not expect a significant change in retail gasoline prices to result from this regulation for the following reasons:

- Economic analyses of retail fuel prices have revealed that demand for gasoline is highly sensitive to price (elastic) within localized geographic areas. As a result, individual retailers are unlikely to raise gasoline prices because local customers will select other stations. Because the regulations do not affect facilities uniformly, widespread price increases are unlikely, and raising the price of gasoline can put individual retailers at a significant competitive disadvantage in local markets.

- Retail motor fuel stations often have associated stores and/or services, such as car washes, repair operations, and convenience outlets, on which they can more successfully pass through increases in compliance costs.

When considered in the context of total fuel consumption in the United States, the final UST regulation would represent a tiny fraction of motor fuel prices even if it was fully passed through to consumers. According to the Bureau of Transportation Statistics, the United States consumed 168,597,000,000 gallons of motor fuel (including gasoline and diesel) in 2011 at an average price of $3.73.[202] This implies that U.S. consumers spent $629 billion in 2012 on motor fuel. The overall cost of the final UST regulation is roughly $160 million, less than one-tenth of one percent of the amount spent by end-users on motor fuel in 2012. In comparison, an increase of $0.01 in the average price of motor fuel in 2012 would have increased the total cost to consumers by approximately $1.7 billion. Given these circumstances, the final UST regulation should not have a measurable impact on retail prices.

5.4 Regulatory Flexibility Analysis

The Regulatory Flexibility Act (RFA) as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), 5 USC 601 et seq., generally requires EPA to prepare a regulatory flexibility analysis of any regulation subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute. This analysis must be completed unless the agency certifies that the regulation will not have a significant economic impact on a substantial number of small entities. If a regulation is found to have a significant impact on a substantial number of small entities, further analysis must be

[202] 2011 is the latest year data available from Bureau of Transportation Statistics for gallons of motor fuel consumed, as reported by: U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics. Accessed at: http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national_transportation_statistics/html/table_04_09.html. The 2012 prices per gallon for all grades of retail motor gasoline and No. 2 diesel fuel (all concentrations of sulfur) were $3.63 and $3.97, respectively, as reported by: U.S. Energy Information Administration. Short-Term Energy Outlook - Real and Nominal Energy Prices for 2012. Accessed at: http://www.eia.gov/forecasts/steo/realprices/. We weight these prices according to prime supplier sales volumes in 2012 published by the Energy Information Administration, which summed to 347,234.5 thousands of gallons per day for gasoline and 143,270.6 thousands of gallons per day for all grades of diesel fuel (U.S. Energy Information Administration. Petroleum & Other Liquids. Prime Supplier Sales Volumes. Accessed at: http://www.eia.gov/dnav/pet/pet_cons_prim_dcu_nus_a.htm.).

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performed to determine what can be done to lessen the impact. Small entities include small businesses, small organizations, and small governmental jurisdictions. EPA developed a screening analysis and supplemental analysis consistent with the requirements under RFA; this section presents a summary of these findings, and Appendix L provides the detailed screening analysis.[203]

For purposes of assessing the impacts of this regulation on small entities, a small entity is defined as: (1) a small business as defined by the Small Business Administration's (SBA) regulations at 13 CFR Part 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field. For the purposes of this analysis, EPA considered costs in excess of one percent and three percent of revenues as indications that the final UST regulation may have a significant impact on a given small entity, and estimates of greater than 20 percent of total small firms or 1,000 total small firms affected as indications that a substantial number of small entities may be affected by the final UST regulation.

5.4.1 Small Business Screening Analysis

We estimate that there are approximately 79,700 firms operating roughly 148,000 facilities in the U.S. retail motor fuel sales sector.[204,205] This analysis assumes that all retail motor fuels firms operate underground storage tanks (UST systems) at all of their facilities. Based on the distribution of firms across revenue categories published by the 2007 Economic Census, and SBA's revenue thresholds for NAICS 447110 and 447190, approximately 77,400

[203] This section focuses on the retail motor fuel sector. As discussed in Appendix L, EPA's screening assessment indicates that the proposed regulation would not have a significant impact on a substantial number of small entities (SISNOSE) across all affected sectors. Because the cost per tank associated with the final UST regulation ($232, in 2012 dollars) is lower than that associated with the proposed regulation ($309, in 2008 dollars), this conclusion also applies to the final UST regulation. However, because 80 percent of all UST systems are in the retail motor fuel sector, we refined the screening assessment to further examine the potential impacts of the final UST regulation on this sector.

[204] There was a significant discrepancy between the number of establishments reported by the 2007 Economic Census by the U.S. Census Bureau and the 2008 station count published by National Petroleum News. The Census reported 118,756 stations operating in any capacity, while NPN counted 161,768 stations. EPA contacted the Census Bureau, which offered three possible reasons for this discrepancy. First, grocery stores with gas stations and wholesale truck stops with gas stations may be categorized under grocery stores or wholesale retail instead of gas stations. Second, the count reported by the Census excludes non-employer establishments (10,131), which are family-owned and only employ family members. Third, for those establishments that do not report back to the Census regularly, the Bureau is not likely to record changes in establishments that have happened at the location (personal communication with the Office of Underground Storage Tanks, November 3, 2010). NPN likely provides a more accurate reflection of the number of stations because it is an industry publication specific to the petroleum sector. This rationale has been carried forward to employ the 2013 station count published by NPN.

[205] NAICS code 447 is comprised of 447110 (Gasoline stations with convenience stores) and 447190 (Other gasoline stations). To reconcile differing estimates of the number of retail motor fuel facilities (roughly 148,000 estimated by NACS in 2012 and roughly 119,000 estimated by the Census, excluding roughly 12,000 facilities reported as not operating for the full year), a 1.38 adjustment factor was applied to the Census data to inflate the number of retail motor fuel facilities to 148,000, distributed proportionately across revenue ranges. This approach preserves the distribution of firms by size according to Census data. As a result of this approach, we estimate that there are a total of approximately 79,700 firms and 455,000 tanks in the retail motor fuel sector.

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(97 percent) of these firms meet SBA's definition of a small entity.[206] Approximately 4,781 of these firms report revenues between $0 and $250,000 (the smallest revenue range published by the 2007 Economic Census), with average sales of approximately $144,000.[207]

To determine whether firms reporting revenues within a given revenue range would incur costs exceeding one percent or three percent of total revenue, EPA compares the average total compliance cost per firm with the average revenue reported by firms in the revenue range. Based on a compliance cost per system of $232 (in 2012 dollars), and assuming that firms in the smallest revenue range own one facility with three UST systems, we estimate that the 4,781 small firms in the $0-$250,000 revenue range would face average total compliance costs of $715 per firm (or $658 in 2007 dollars).[208] Any firm with annual revenues above $65,800 (in 2007 dollars) (i.e., the revenue threshold at which compliance costs would exceed one percent of the firm's revenue) is not expected to experience a significant impact. The average revenue for the 4,781 firms in the $0-$250,000 revenue bin is $144,000, suggesting that on average, firms in this category will not experience significant impacts due to estimated compliance costs.

However, because the lowest range reported by the U.S. Census reflects a distribution of firms with revenues between $0 and $250,000, it is possible that some of the 4,781 firms in this category may be significantly affected. EPA also considers estimates of greater than 20 percent of total small firms or 1,000 total small firms affected as indications that a substantial number of small entities may be affected by the final UST regulation. While the 4,781 small firms in the lowest revenue range represent only six percent of all potentially affected small firms, EPA conducted a supplemental analysis that focuses on this group of small firms in an attempt to refine the estimated number of small firms potentially affected by the final UST regulation.

5.4.2 Small Business Supplemental Analysis

The purpose of this supplemental analysis is to refine the results of the small business screening analysis. The U.S. Census Bureau provided additional data on firms in the lowest revenue bins for NAICS sectors 447110 (gasoline stations with convenience stores) and 447190 (other gasoline stations), identifying the percentage of firms with revenues in three ranges: (1)

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[206] For 447110, the SBA revenue threshold is $27 million; for 447190, the SBA revenue threshold is $9 million. To ensure that we do not underestimate the number of small entities, we assume that all firms within a revenue bin that contains a specific SBA revenue threshold value are small. For example, if the SBA small business size threshold for a sector is $7 million, we assume that all firms in the revenue range of $5 to $10 million are small.

[207] For simplicity we identify size categories in this document as described by the 2007 Census (e.g., revenues up to $250,000 in 2007 dollars), and identify compliance costs in 2012 dollars. However, in the actual screening analysis, compliance costs have been adjusted from 2012 dollars to 2007 dollars using the GDP implicit deflator. The estimated compliance cost is $232 per system in 2012 dollars, or $214 per tank in 2007 dollars. These costs exclude compliance costs associated with the removal of deferrals for AHFDSs and UST systems with FCTs. AHFDS and FCT systems are primarily owned by the Department of Defense and not by any small entities.

[208] Census data on number of facilities per firm indicate that virtually all firms earning less than $250,000 per year in 2007 had only one facility. We therefore use "firm" and "facility" interchangeably in this context.

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$0-$50,000; (2) $50,000-$150,000; and (3) $150,000-$250,000.[209] Based on this information, we estimate the number of firms in the retail motor fuel sales sector (i.e., NAICS 447) for these three revenue groups at approximately 320, 2,000, and 2,500, respectively and use these data to refine our estimate of the number of significantly affected facilities.[210,211]

Given compliance costs of $658 per firm ($715 in 2012 dollars), any firm making less than $65,800 and $22,000 would be considered significantly affected at the one percent and three percent revenue thresholds, respectively. Under these assumptions, EPA estimates that 634 firms would be affected at the one percent threshold, and no firms would be affected at the three percent threshold.[212] The number of firms that would be significantly affected at the one percent threshold under these assumptions does not exceed the one thousand-firm substantial effect benchmark. Furthermore, this conclusion rests on the assumption that even these small firms operate the industry average of three tank systems.

5.4.3 Impacts to Small Governments

The *1992 Local Government Economic Impact Analysis* provides the best readily-available data on the number of governments owning UST systems, total UST systems owned by governments, average UST systems per government, and UST systems per owning government. The data include size and revenue for both general purpose (i.e., counties, municipalities, and townships) and special district governments (i.e., school districts and other special districts), dividing these governments into four size categories: very large, large, medium and small. The 1992 analysis defines a "very large" government as one that serves over 50,000 people; therefore, all other entities are considered to be small governmental jurisdictions according to the RFA/SBREFA definition. Using the data from the 1992 analysis, we estimate the number of

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[209] The information provided by the U.S. Census Bureau is considered an "unpublished data request." As such, the Census Bureau included a letter noting that "these are not 'official data' from the Census Bureau, since they do not meet the Census Bureau's quality standards. These data should be used with extreme caution, realizing the severe quality limitations that may exist." However, absent another source of information, we use this as the best data available. (This information was provided in January 2010 and relates to the 2002 Economic Census data. We use the 2002 distribution within this revenue range as a proxy for the 2007 Economic Census data.)

[210] The analysis interpolates between the lower and upper bounds of each range and assumes a uniform distribution of facilities within each range. The lowest revenue interval is bounded at $39,600, which EPA obtains from estimating the linear trend between the zero and $250,000 in revenues. The implicit assumption is that no facilities earn less than that level of revenue

[211] Although the U.S. Census Bureau reports several hundred facilities with annual revenues less than $100,000, market economics suggest that it would be difficult for a firm that relies solely on gasoline sales to be viable if earning less than $100,000 in annual revenues. Assuming $2 per gallon in sales, a facility earning $100,000 would sell less than 4,200 gallons of gasoline per month, compared with the monthly industry average throughput of approximately 130,000 gallons. Based on information from a mid-size retail fuel marketer, EPA believes that a facility requires a minimum throughput of approximately 30,000 gallons per month to remain economically viable. In addition, a facility would need $108,000 to generate enough gross profit to cover the direct cost of the wages of one full-time employee at minimum wage ($15,080 at $7.25 per hour and 2,080 hours, before accounting for employment taxes). This does not consider other costs, such as electricity, property taxes, or franchise fees.

[212] EPA estimates a total of approximately 104,000 small firms with USTs across all affected sectors; 634 is 0.6 percent of these. In NAICS 447, the 634 firms represent 0.8 percent.

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small governments that own UST systems based on the total universe of UST systems today. See Appendix L for additional detail.

EPA assumes that local governments collectively own four percent of active tanks. This equates to 23,119 tanks, based on the fiscal year 2013 universe of 577,981 tanks.[213] These 23,119 tanks are distributed among all local governments, based upon the percentage of tanks owned in 1992 by local governments in each size category (the average number of tanks owned by a government varies with the size of the government from one tank for small governments to 10 or more tanks for the largest governments).

EPA then calculates, using the 1992 data on government ownership of UST systems, the average compliance cost per government entity. This is done by multiplying the cost per tank by the number of UST systems per government by size category. The average annual revenue for each size of general purpose government is calculated using 2007 Census of Governments Data and weighted-average contributions that depend on type of entity (i.e., towns, municipalities, and counties). EPA extrapolates Census data on revenues for 4,128 townships to the 16,519 townships in the country. These weighted averages are combined to obtain annual revenues in 2007 dollars for general purpose governments, then inflated to 2012 dollars. Detailed information at the special district level is not available for later years, so budget expenditures from the 1992 analysis were inflated into 2012 dollars.[214]

To calculate how many small governments face significant compliance costs exceeding one or three percent of their revenues, we compared the average compliance cost per government with the average annual revenues to determine how many exceed either threshold. At a cost of $232 (2012 dollars) per UST system, no small governments are affected under either the one percent or three percent revenue threshold (see **Exhibit 5-3**). Correspondingly, EPA does not find that the final UST regulation has any significant impact on a substantial number of small governments.

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[213] We adjusted the estimates of local government UST systems from the *1992 Local Government Economic Impact Analysis* using the 2007 Census of Governments. See: ICF. "Economic Impact Analysis of Additional Mechanisms for Local Government Entities to Demonstrate Financial Responsibility for Underground Storage Tanks." December 1992. Exhibit 3-1. Consistent with this analysis, the number of government UST systems is assumed to be one percent of all 2013 UST systems for state and federal governments and four percent of all 2013 UST systems for local governments.

[214] Typically, a RFA/SBREFA screening assessment uses revenues to assess economic impact measures for small governments. In the absence of detailed 2007 data, we use 1992 budget expenditures as a proxy for revenues.

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Exhibit 5-3

Compliance Costs To Systems Owned By Governments

Type of Gov't	Size of Gov'tb	UST Systems Per Owning Gov'tc	Number of Gov'ts Owning Tanksd	2007 Est. Number of Gov'ts e	Average Annual Revenue ($2007) f	Average Cost Per Gov't ($2007) g	Gov'ts Exceeding 1% of Revenue	Gov'ts Exceeding 3% of Revenue
General Purpose[a]	Very Large	10.2	505	1,463	$363,822,312	$2,182	0	0
	Large	2.5	1,429	4,044	$41,098,521	$535	0	0
	Medium	1.4	1,365	7,832	$10,029,870	$300	0	0
	Small	1.1	990	25,706	$2,045,340	$235	0	0
	Subtotal	2.7	4,289	39,044				
Special Purpose	Very Large	3.7	317	970	$496,958,943	$792	0	0
	Large	3.6	1,798	5,546	$60,843,018	$770	0	0
	Medium	1.4	2,503	14,127	$2,918,747	$300	0	0
	Small	1.0	244	29,789	$147,494	$214	0	0
	Subtotal	2.4	4,863	50,432			0	0
Overall	Total	2.5	9,152	89,476			0	0

[a] General Purpose governments include counties, municipalities and townships. Special Purpose governments include public school systems and special districts.

[b] Very large governments are considered to serve more than 50,000 people. Large governments are considered to be those that serve between 10,000 and 50,000 people, medium governments as those that serve between 2,500 and 10,000 people, and small governments as those that serve 2,500 or fewer people. According to RFA/SBREFA, small governmental jurisdictions have populations under 50,000. Therefore, all sizes of governments except for "very large" are considered to be small.

[c] From 1992 *Local Government Impact Analysis* data.

[d] Calculated as number of tanks (adjusted 1992 distribution in each size category to reflect FY 2013 tank numbers) divided by UST systems per owning government (c).

[e] General purpose and Special Purpose total number of entities from 2007 Census of Governments, size distribution extrapolated from 1992 *Local Government Impact Analysis* data.

[f] General purpose estimates from 2007 Census of Governments; Special Purpose estimates inflated from 1992 *Local Government Impact Analysis* data.

[g] Calculated as number of systems per government (c) * estimated cost per tank ($215 in $2007 or $232 in $2012).

5.5 Screening Analysis to Inform Impacts on Minority and Low-Income Populations

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (59 FR 7629, February 16, 1994) directs federal agencies, to the greatest extent practicable and permitted by law, to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

To inform us about the socioeconomic characteristics of communities potentially affected by the regulation, EPA conducted a screening analysis in 2010 to examine whether a statistically significant disparity exists between socioeconomic characteristics of populations located near UST facilities and those that are not.[215] The results indicate that minority and low-income populations are slightly more likely to be located near UST facilities. An environmental justice analysis would then require an assessment of whether there would be disproportionate and

[215] Note that the affected populations identified in the screening analysis summarized here are simply defined by specific demographics surrounding UST locations. These affected populations are not necessarily equivalent to communities that others have specifically identified as "environmental justice communities."

adverse impacts on these populations. However, because all regulatory options considered in this regulation would increase regulatory stringency and reduce the number and size of releases, EPA does not anticipate that the final UST regulation will have any disproportionately high and adverse human health or environmental effects on these minority or low-income communities, or on any community. While resource constraints make it impractical to update this analysis with newer location data, it is unlikely that marginal changes in sample facility locations would affect the results of the analysis.

5.5.1 Risk Assessment Population Analysis

To characterize the extent of human health risk reductions anticipated under the final UST regulation, EPA conducted a screening-level analysis of the likely impact of the regulation on benzene-related cancer incidence.[216] This analysis used location data for nearly 60,000 U.S. gas stations with UST systems using an ESRI Business Analyst database, and examined populations within a buffer distance of 1,000 feet of facilities with UST systems. The ESRI gas station location data are supplemented with 1,600 UST systems in Indian country, based on location information compiled from EPA regional Indian country databases. After elimination of duplicates, the data set contains 59,945 UST facilities (including 727 in Indian country) (see **Exhibit 5-4**). The total data set represents over 25 percent of the roughly 200,000 active facilities with UST systems.[217]

To estimate populations near sample facilities, the analysis uses a "synthetic population" dataset developed by the Modeling of Infection Diseases Agents Study (MIDAS) to provide population estimates at a finer spatial resolution than Census blocks, while maintaining the accuracy of aggregate demographic data at the 2000 Census block group level. For more detail on this method, see Appendix M.

The modeled fate and transport of pollutants under a range of scenarios indicates that the contamination from UST releases do not typically exceed 1,000 feet.[218] The risk assessment considered population density within 1,000 feet of each UST, and incorporated estimates of the use of groundwater for drinking and bathing, along with typical exposure scenarios, to characterize the change in population risk likely to be associated with the reduction of 2,821 releases and groundwater incidents that were estimated in 2010 (i.e., the total estimated number of avoided releases and groundwater incidents resulting from the final UST regulation). The risk assessment concluded that the final UST regulation will result in a very small reduction in

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[216] RTI International. "Risk Analysis to Support Potential Revisions to Underground Storage Tank (UST) Regulations." December 22, 2010.

[217] ESRI. "2009 Methodology Statement: ESRI Data—Business Locations and Business Summary." ESRI, Redlands, CA. Accessed at: http://www.esri.com/library/whitepapers/pdfs/infousa-business-database.pdf. ESRI data are derived from an infoUSA database. The approach for compiling business data for this database is documented on the infoUSA website (http://www.infousa.com), and includes systematic compilation of public record, phone books, business directories, and includes frequent review for new, updated, and relocated businesses. While this methodology does not capture all locations, it is not differentially focused on any specific region or information source, and therefore likely represents a reasonable spatial distribution of facilities.

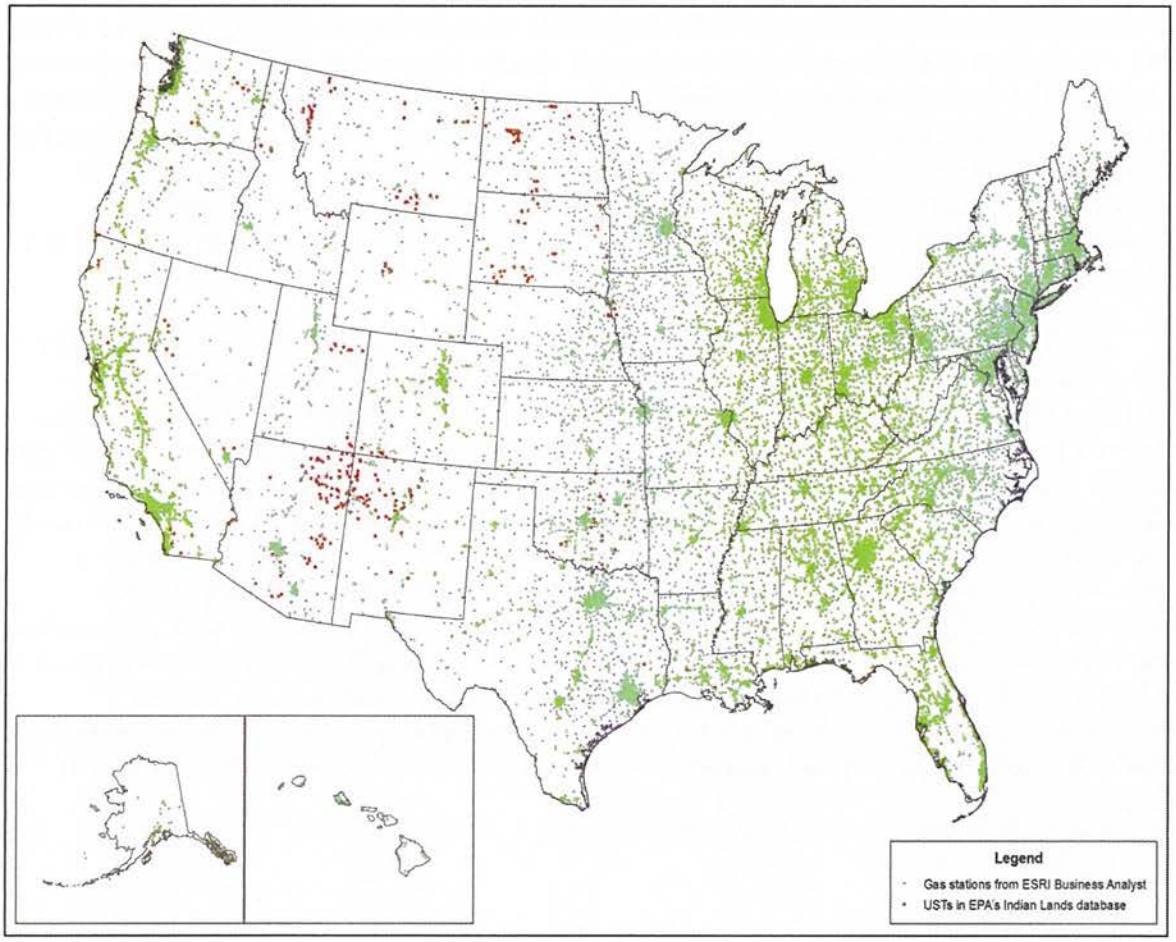
[218] RTI International. "Risk Analysis to Support Potential Revisions to Underground Storage Tank (UST) Regulations." December 22, 2010.

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population risk related to cancer from benzene exposure, based on the estimated number and volume of avoided releases and groundwater incidents.

Exhibit 5-4

UST Location Data Used In Analysis. (See Appendix M for details on data sources.)



5.5.2 Demographic Analysis

The demographic analysis expands on the population data near the 59,945 gas stations in the risk assessment by characterizing demographic features of populations at each site and comparing these populations to larger (county-level) reference populations.[219] Specifically, the analysis examines the following demographic variables: percent in poverty, percent minority, and, as a verification step, percent white alone (the percentage of the population that specified their race as "white" and did not specify "Hispanic"). The analysis also identifies percent under five years old, percent under 18 years old to support the analysis required under Executive Order 13045, "Protection of Children from Environmental Health Risks and Safety Risks" (see section 5.6 below). The analysis considers the significance of the "difference in means" and "difference in median" values for each census parameter and each community. That is, the analysis identifies the differences between mean and median concentrations of each demographic group for the affected and reference populations at each of the 59,945 sites, and examines whether the differences identified across all sites are statistically different from what would be expected in a random distribution.[220]

The analysis considers the differences in demographics in two ways: unweighted (each site is given equal weight) and population weighted (results are weighted by affected persons, giving sites with larger populations more weight). A statistically significant positive difference indicates a greater percentage of target demographic in the affected population than in the larger reference population. A statistically significant negative difference indicates a smaller percentage of the target demographic in the affected population. **Exhibit 5-5** provides the unweighted results of the analysis and generally finds that minority and low-income demographics constitute a slightly larger proportion of the population surrounding UST facilities. For example, poor populations account for 13.3 percent of the population near an UST, compared with 12.2 percent of the reference (county) population. As **Exhibit 5-6** shows, although the difference is small, it is also highly statistically significant (with a p-value below .001), which suggests that the difference between the values is not a random occurrence. **Exhibits 5-7 and 5-8** summarize the results of the population-weighted analysis, and generally find slightly larger (but still small) effects.

[219] County-level statistics provide a useful comparative measure for the populations at the local facility level. Given that the area of interest is small (i.e., 1000 feet of a facility), the county-level provides an appropriate scale for comparison.

[220] See Appendix M for the complete demographic screening analysis.

Exhibit 5-5

Summary Results For Census Parameters – Unweighted

Census Parameter	Characteristics of Affected Population (1,000 ft Buffer around UST Facility)		Characteristics of Reference Population (Counties where UST Facilities are Located)		Difference between Affected Population and Reference Population			
							95% Confidence Interval of Mean Difference	
	Mean	Median	Mean	Median	Mean	Median	Lower Bound	Upper Bound
Percent White Alone	70.3	81.3	70.8	74.8	-0.44	1.29	-0.61	-0.27
Percent Under Age 5	6.7	6.5	6.7	6.7	-0.05	-0.12	-0.068	-0.032
Percent Under Age 18	24.7	24.9	25.6	25.5	-0.84	-0.54	-0.99	-0.68
Percent in Poverty	13.3	10.3	12.2	11.5	1.1	-0.64	0.99	1.13
Percent Minority	24.0	14.6	23.8	20.9	0.21	-1.48	0.06	0.36

Note: Difference summary statistics (mean and median) were calculated from the distribution of difference values (i.e., one result per facility, yielding a distribution of about 60,000 results). Mean values reflect the entire distribution, whereas the median values are based only on the 50th percentile result. For this reason, the mean difference results could also be calculated simply by subtracting the reference community mean from the potentially affected community mean (e.g., for mean percent poverty 13.3 – 12.2 = 1.1). In contrast, the median difference values do not necessarily match values derived by subtracting the median values from the underlying distributions (e.g., for median percent poverty 10.3 – 11.5 ≠ -.64). Although the primary results of the analysis are based on mean values, median results are provided for completeness and as an alternative indicator of the distributions' central tendency.

Exhibit 5-6

Standard Error, T Test, And Risk Ratio Results – Unweighted

Census Parameter	Characteristics of Affected Population (1,000 ft Buffer around UST Facility)	Characteristics of Reference Population (Counties where UST Facilities are Located)	Difference between Affected Population and Reference Population				
	SE of Mean	SE of Mean	SE of Mean	T Statistic	p-value	Ratio	SE of Ratio
Percent White Alone	0.120	0.088	0.085	-5.23	<0.001	0.99	0.001
Percent Under Age 5	0.010	0.004	0.009	-5.18	<0.001	0.99	0.001
Percent Under Age 18	0.104	0.071	0.079	-10.59	<0.001	0.97	0.001
Percent in Poverty	0.045	0.023	0.038	27.66	<0.001	1.09	0.003
Percent Minority	0.104	0.071	0.079	2.71	0.0067	1.01	0.003

Note: There are >56,033 degrees of freedom for this test (i.e. number of facilities). Note that the total number of facilities in the dataset (59,945) differs from the degrees of freedom, because a fraction of facilities have no people living within the 1000 foot buffer.

Exhibit 5-7

Summary Results For Census Parameters – Weighted By Population

Census Parameter	Characteristics of Affected Population (1,000 ft Buffer around UST Facility)		Characteristics of Reference Population (Counties where UST Facilities are Located)		Difference between Affected Population and Reference Population			
							95% Confidence Interval of Mean Difference	
	Mean	Median	Mean	Median	Mean	Median	Lower Bound	Upper Bound
Percent White Alone	53.88	59.63	58.79	57.70	-4.61	-2.55	-5.0	-4.2
Percent Under Age 5	6.91	6.78	6.80	6.85	0.11	0.04	0.073	0.14
Percent Under Age 18	24.74	24.91	25.36	25.53	-0.62	-1.57	-0.73	-0.50
Percent in Poverty	16.22	13.34	13.33	12.83	2.89	0.96	2.7	3.1
Percent Minority	36.61	29.54	33.16	31.92	3.45	0.58	3.1	3.8

Note: Difference summary statistics (mean and median) were calculated from the distribution of difference values (i.e., one result per facility, yielding a distribution of about 60,000 results). Mean values reflect the entire distribution, whereas the median values are based only on the 50th percentile result. For this reason, the mean difference results could also be calculated simply by subtracting the reference community mean from the potentially affected community mean (e.g., for mean percent poverty 16.2 – 13.3 = 2.9). In contrast, the median difference values do not necessarily match values derived by subtracting the median values from the underlying distributions (e.g., for median percent poverty 13.3 – 12.8 ≠ -0.96). Although the primary results of the analysis are based on mean values, median results are provided for completeness and as an alternative indicator of the distributions' central tendency.

Exhibit 5-8

Standard Error, T Test, And Risk Ratio Results – Weighted By Population

Census Parameter	Characteristics of Affected Population (1,000 ft Buffer around UST Facility)	Characteristics of Reference Population (Counties where UST Facilities are Located)	Difference between Affected Population and Reference Population				
	SE of Mean	SE of Mean	SE of Mean	T Statistic	p-value	Ratio	SE of Ratio
Percent White Alone	0.288	0.193	0.205	-22.48	<0.001	0.92	0.0035
Percent Under Age 5	0.020	0.008	0.017	6.24	<0.001	1.02	0.0026
Percent Under Age 18	0.065	0.033	0.058	-10.62	<0.001	0.98	0.0023
Percent in Poverty	0.108	0.063	0.085	34.02	<0.001	1.22	0.0064
Percent Minority	0.255	0.165	0.191	18.05	<0.001	1.10	0.0058

Note: There are >56,033 degrees of freedom for this test (i.e. number of facilities). Note that the total number of facilities in the dataset (59,945) differs from the degrees of freedom, because a fraction of facilities have no people living within the 1000 foot buffer.

Overall, the demographic analysis identifies a small but statistically significant difference between minority and low-income populations near UST systems and in the reference communities. Minority and poverty-level demographics are present at greater percentages in the vicinity of UST facilities. In contrast, a small *negative* relationship suggests that "white alone" populations are less likely to be near UST systems, i.e., minority populations are marginally more likely to reside near UST facilities. Moreover, while the unweighted analysis does not find clear patterns related to children under 18 and children under five, the population-weighted analysis finds that the distribution of all target demographics around UST facilities reflects small but significant differences from county-level populations. The population-weighted results show greater differences, suggesting that facilities in higher population areas tend to have more pronounced disparities between local, potentially affected communities and reference (county-level) communities. These differences, while small, are statistically significant with p-values less than 0.01 in all cases. This result implies that any risk reductions associated with the final UST regulation will occur in the context of a baseline condition in which minority and low-income populations are disproportionately located near USTs.

5.5.3 Summary and Limitations of the Analysis

This section summarizes a screening assessment and does not present a complete environmental justice analysis. The assessment is limited by the fact that demographic data from the U.S. Census are at the block group level, and are not as precise as the spatial distribution of population. As a result, if the demographic distribution of populations within block groups is uneven, the block group-level data may not accurately characterize populations living nearest to UST locations. The large sample of 59,945 sites, however, reduces the potential that this uncertainty could skew the results of the analysis (relative to a smaller sample of sites).

Given the results of the screening analysis, because all regulatory options considered in this regulation would increase regulatory stringency and reduce the number and size of releases, EPA does not anticipate the final UST regulation to have any disproportionately high and adverse human health or environmental effects on these minority or low-income communities, or on any community. Since the final UST regulation is not anticipated to create any new adverse human health or environmental impacts, EPA did not conduct a complete environmental justice analysis.

5.6 Children's Health Protection Analysis

Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (62 FR 19885, April 23, 1997), applies to any regulation that: (1) is determined to be "economically significant" as defined under E.O. 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned regulation on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

This action may be subject to Executive Order 13045 because it is economically significant as defined in Executive Order 12866. EPA's screening-level risk assessment examines potential impacts to groundwater and subsequent chemical transport, exposure and risk. While the risk assessment did not specifically measure exposure to children, the general exposure scenarios reflect four exposure pathways that have the most significant potential for human health impacts. These are:

- ingestion of chemicals in groundwater that have migrated from the source area to residential drinking water wells
- inhalation of volatile chemicals when showering with contaminated groundwater
- dermal contact with chemicals while bathing or showering with contaminated groundwater
- inhalation of vapors that may migrate upward from contaminated groundwater into overlying buildings

Adults and children can potentially be exposed through all four exposure pathways considered. For adults, inhalation of vapors while showering is the most significant adult exposure pathway; for children, ingestion is the most significant pathway, because children are assumed to take baths and are therefore not exposed through shower vapor inhalation. As a result of the longer exposure from showering, adults may be the more sensitive receptor for cancer effects compared

to children, particularly those under five who are assumed to take more baths and fewer showers.[221]

While the screening level risk assessment is limited in that it only examines benzene impacts, the final UST regulation would likely reduce other contaminant exposures to children in a similar pattern, and would not create significant adverse impacts on children's health.

The screening-level demographic analysis described in section 5.5 finds a statistically significant result that children under the age of 18 and children under the age of five are slightly *less* likely to be found in the vicinity of UST facilities. This suggests that the impacts of the final UST regulation will not have a disproportionate impact on children's health. Moreover, because all regulatory options would increase regulatory stringency and reduce the number and size of releases, EPA does not expect the final UST regulation to have any disproportionate adverse impact on children.

[221] U.S. Department of Health and Human Services. Public Health Service. Agency for Toxic Substances and Disease Registry. "Toxicological Profile for Polycyclic Aromatic Hydrocarbons." August 1995.

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Chapter 6. Other Statutory and Executive Order Analyses

As required by applicable statutes and executive orders, this chapter summarizes our analysis of equity considerations and other regulatory concerns associated with the final UST regulation. This chapter assesses potential impacts, with respect to the following issues:

- **Regulatory planning and review**: requires examination and quantification of costs and benefits of regulating with and without the regulation.
- **Unfunded mandates:** examines the implications of the regulation with respect to unfunded mandates.
- **Federalism:** considers potential issues related to state sovereignty.
- **Tribal governments:** extends the discussion of federal unfunded mandates to include impacts on tribal governments and their communities.
- **Joint impacts of rules:** discusses how other regulations, together with the final UST regulation, will likely affect the universe of regulated facilities.

6.1 Regulatory Planning and Review

Under Executive Order 12866 (58 FR 51735, October 4, 1993), EPA, in conjunction with the Office of Management and Budget's (OMB's) Office of Information and Regulatory Affairs (OIRA), must determine whether a regulatory action is "significant" and therefore subject to OMB review and the full requirements of the Executive Order. The Order defines "significant regulatory action" as one that is likely to result in a regulation that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, the Agency has determined that this regulation is an economically significant regulatory action because it may have an annual effect on the economy of $100 million or more, as defined under part 3(f)(1) of the Order. Findings of

the regulatory cost analysis (Chapter 3) indicate that the regulation will have aggregate annual compliance costs of approximately $160 million under the Selected Option, $290 million under Alternative 1, and $70 million under Alternative 2. Separately, this analysis concludes that the regulation is expected to have cost savings related to avoided costs of $120 million to $530 million under the Selected Option, $210 million to $670 million under Alternative 1, and $45 million to $420 million under Alternative 2. These cost savings effectively offset the entire cost of the regulation, resulting in a net beneficial impact on the economy. However, for the purpose of addressing Executive Order 12866, these cost savings are considered to be separate impacts rather than direct reductions in the total cost of the regulation.

6.2 Unfunded Mandates Analysis

Signed into law on March 22, 1995, the Unfunded Mandates Reform Act (UMRA) calls on all federal agencies to provide a statement supporting the need to issue any regulation containing an unfunded federal mandate and describing prior consultation with representatives of affected state, local, and tribal governments.

The final UST regulation is subject to the requirements of sections 202 and 205 of UMRA. In general, a regulation is subject to the requirements of these sections if it contains "Federal mandates" that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $100 million or more in any one year. Because roughly 95 percent of conventional UST systems are privately owned, EPA estimates that the regulation will have approximately $130 million of costs to the private sector under the Selected Option, $270 million under Alternative 1, and $67 million under Alternative 2 in expenditures for the private sector and is thus subject to the following requirements of these sections.[222]

- An identification of the provision of Federal law under which the regulation is being promulgated.

- A qualitative and quantitative assessment of the anticipated costs and benefits of the Federal mandate;

    - Costs and benefits to State, local, and tribal governments and the private sector
    - Effect on health, safety, and the natural environment
    - Analysis of extent to which such costs may be paid with Federal financial assistance (or otherwise paid for by the Federal government)
    - Analysis of the extent to which there are available Federal resources to

[222] As described in Exhibit 2-3, the number of UST systems owned by state and federal governments is assumed to be two percent, and the number of UST systems owned by local governments is assumed to be four percent. Costs calculated as total compliance costs for conventional UST systems, and EGTs (including costs to read regulations), documented in Exhibit 3-8, net of local and state government compliance costs identified in Exhibit 6-2 below. As commercial airports are not typically privately-owned, we do not include them in private sector costs. However, commercial airports may be run by municipal or state-level organizations that are separately funded and/or may reflect public/private partnerships. Note that the costs to commercial airports are small enough ($1.2 million per year) that including them in the private sector does not change the total rounded private cost figures shown above.

carry out this mandate

- Estimates of future compliance costs with the mandate.
- Estimates of disproportionate budgetary effects on any type of government or segment of the private sector.
- Estimates of the effect on the national economy (if relevant and possible).

Exhibit 6-1 provides references for the analyses that EPA has performed that respond to these requirements.

Exhibit 6-1

Location Of Analyses Responding To UMRA Requirements

Requirement	Location In This Document
Identification of provision of federal law under which rule is being promulgated	Chapter 1
Assessment of costs and benefits to state, local, and tribal governments and the private sector	Chapters 3 and 4
Assessment of the effect on health, safety, and the natural environment	Chapter 4
Assessment of the extent to which such costs may be paid with federal financial assistance	Chapter 3; no Federal assistance is anticipated
Assessment of the extent to which there are available federal resources to carry out this mandate	Chapter 3; no Federal resources are anticipated
Estimates of future compliance costs	Chapter 3
Estimates of disproportionate budgetary effects on any type of government or private sector segment	Chapter 5
Estimates of the effect on the national economy	Chapters 3 and 5

6.3 Federalism Analysis

Executive Order 13132, *Federalism* (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure "meaningful and timely input by state and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" is defined in the Executive Order to include regulations that have "substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government." EPA typically considers a policy to have federalism implications if it results in the expenditure by State and/or local governments in the aggregate of $25 million or more in any one year.

Under Executive Order 13132, EPA may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or EPA consults with State and local officials early in the process of developing the regulation.

Exhibit 6-2 summarizes annual government costs. Direct compliance costs for local and State governments reflect average costs per UST system; the analysis assumes that states collectively own one percent of total UST systems (5,780), and local governments own 23,119 UST systems (four percent).

In addition, under the final UST regulation, each state will incur labor costs for reading the new regulations, applying for State Program Approval (SPA), and processing one-time notification of existence for AHFDSs, and FCTs. States that do not already require notification of UST ownership change will also incur costs to process and review all ownership change notifications. (See discussion in Chapter 3, Section 3.6.)

In this scenario, total costs to all affected state and local governments (including direct compliance costs, notification costs, and state program costs) are approximately $6.8 million under the Selected Option, $14 million under Alternative 1, and $3.6 million under Alternative 2 in 2012 dollars; this is not considered to be a substantial compliance cost under federalism requirements.[223]

Exhibit 6-2

Summary Of Annual State And Local Government Costs [b]

Element	Selected Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Local Compliance Costs [a]	$5.4	$11.0	$2.8
State Compliance Costs [a]	$1.3	$2.9	$0.70
State Government Administrative Costs	$0.12	$0.12	$0.12
Total State and Local Governments Costs [c]	**$6.8**	**$14.0**	**$3.6**

[a] State and local government compliance costs are included in the total compliance costs presented in Exhibit 3-8.
[b] Cost estimates were derived using a seven percent discount rate.
[c] Total may not sum due to rounding.

6.4 Tribal Governments Analysis

Executive Order 13175, *Consultation and Coordination With Indian Tribal Governments* (65 FR 67249, November 9, 2000), requires EPA to develop an accountable process to ensure "meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications." EPA has concluded that this action will have tribal implications to the extent that tribally-owned entities with UST systems on Indian country would be affected. However, it will neither impose substantial direct compliance costs on tribal governments, nor preempt Tribal law.

The data sources for the Indian country analysis are the same as those used in the small business analysis. Based on a review of information available about the types of business entities

[223] If all applicable state and local government costs were incurred in the first year, rather than annualized and discounted, state and local governments would incur approximately $3.8 million in costs under the Selected Option. This includes $0.2 million for states to apply for state program approval and to read the regulations, $0.2 million for states to process one-time notifications of AHFDSs and FCTs and ownership changes that occur in the first year, and $3.6 million for state and local government owners and operators of UST systems to comply with requirements that come into effect in the first year (approximately 80% of which would be for state and local government owners and operators to read the final UST regulation).

in Indian country, it is assumed that UST systems in Indian country represent a subset of the rest of the universe and are distributed similarly across the same sectors.[224] The total number of UST systems in Indian country is distributed proportionally among the NAICS sectors.

The cost per UST system is higher in Indian country, as the universe is smaller, and all UST systems are assumed to incur costs associated with all the requirements of the final UST regulation. At a 2012 cost of $734 per UST system, the total cost for UST systems in Indian country is approximately $1.9 million. EPA data indicates that 35 percent of all UST systems in Indian country are tribally-owned; correspondingly, the total cost to owners and operators of tribally-owned UST systems is approximately $0.67 million.

EPA consulted with tribal officials early in the process of developing this regulation to engage them to have meaningful and timely input into its development. EPA began its consultation with tribes on possible changes to the UST regulation shortly after the passage of the Energy Policy Act of 2005 (EPAct). EPAct directed EPA to coordinate with tribes to develop and implement an UST program strategy in Indian country to supplement the program's existing approach. EPA and the tribes worked collaboratively to develop this tribal strategy.

EPAct also included key provisions that apply to states receiving federal funding but the Act did not specify Indian country. Nonetheless, EPA's goal is to implement the objectives of these provisions in Indian country as an important step in achieving more consistent program results in release prevention. Both EPA and tribes recognize the importance of having policies that can help to ensure parity in program implementation between states and in Indian country. EPA committed to the tribes that we would fully implement the new provisions of the EPAct, and the final UST regulation will realize that commitment.

In addition to our early consultation with the tribes, EPA again reached out to the tribes as we started the official regulatory process and throughout the development of the UST regulation. EPA sent letters to leaders of over 500 tribes, as well as to tribal regulatory staff, inviting their participation in developing the regulation. EPA heard from both tribal officials who work as regulators as well as representatives of owners and operators of UST systems in Indian country. The tribal regulators raised concerns about ensuring parity of environmental protection between states and Indian country.

The changes to the UST regulation under this regulation are needed to ensure parity between sites in states and in Indian country. The final UST regulation will ensure equipment is not just installed but is working properly and protects the environment from potential releases.

6.5 Joint Impacts of Rules

Executive Order 12866 requires that the Agency review whether the regulation creates "a serious inconsistency" or otherwise interferes "with an action taken or planned by another agency." We do not believe that the regulation creates a serious inconsistency or interferes with

[224] For more detail, see: Industrial Economics, Inc. "Detailed Assessment of UST Universe by Tank Purpose and Design." Work Assignment 1-25, Task 6, March 24, 2009. Note that because tribal ownership and operation is defined differently than other types of government ownership, no attempts are made to isolate or identify "government" UST systems in Indian country.

any other actions planned or undertaken by other agencies. The following are the existing regulations that currently affect UST systems:

- **State UST Regulations:** A number of states have existing UST regulations that are more demanding than existing regulations under 40 CFR Part 280. To the extent that these policies are at least as demanding as the regulations under consideration, the systems in these states may already be in partial or full compliance with portions of the regulation. Chapter 2 identifies the number of UST systems in states with existing (baseline) regulations; cost estimates in Chapter 3 reflect the state regulatory programs that exist in the baseline.

- **SPCC Regulation:** Currently, a subset of UST systems in the universe is regulated by the Spill Prevention, Control, and Countermeasure regulation (SPCC); these include emergency generator tanks, airport hydrant fuel distribution systems and UST systems with field-constructed tanks. Specifically, the SPCC regulation in 40 CFR Part 112 apply to above-ground containers and completely buried tanks that are not otherwise covered by 40 CFR Part 280. SPCC regulation does not specify particular leak detection protocols, but require that plans conform to industry standards, which can often be consistent with the requirements of the regulation. To the extent that the requirements imposed on these UST systems via the regulation are more or less stringent than the SPCC regulation currently governing them, the regulation may cause an increase or a reduction in overall inspection and monitoring requirements (and costs) for these UST systems. To account for this, EPA has generated baseline assumptions for these systems using information from the Department of Defense (the owner of the majority of all FCTs and AHFDSs). EGTs are assumed to incur all incremental costs beyond state regulatory baseline costs; to the extent that these systems are regulated under SPCC, this may overstate costs.

Chapter 7. Comparison of Costs, Benefits, and Other Impacts

This chapter compares the costs, cost savings, and benefits of the final UST regulation. Cost-benefit analysis is a useful tool for economic assessments. It is used to evaluate the economic efficiency of environmental policies by measuring their costs and benefits, and hence their net impacts on society. However, adherence to a strict cost-benefit approach provides an incomplete assessment of the effects of the final regulation for two reasons, described below.

A traditional cost-benefit comparison weighs society's willingness to pay for the benefits of a regulation against the opportunity costs of the regulation. In the case of leaking USTs, though, cleanup of releases is required under RCRA Subtitle I. Therefore, although avoided remediation costs are not a measure of willingness to pay, under the current statutory and regulatory baseline, a sufficient condition for the final UST regulation to improve economic efficiency would be if the expected avoided remediation costs exceed the costs. As discussed in Chapter 4, avoided costs provide a reasonable measure of one set of positive effects of the final UST regulation. Even if avoided remediation costs do not exceed the cost of the regulation, economic efficiency could be enhanced because this analysis does not quantify additional social benefits such as improved water quality.

A traditional cost-benefit comparison also does not consider important distributional issues (e.g., what particular groups of people bear specific benefits or costs). A key effect of the final UST regulation is to reallocate costs from the public to responsible parties. As we discussed in Chapter 5, avoided remediation costs could reduce demand on state financial assurance funds by over $160 million per year.

This chapter uses two approaches to assess the effectiveness of the requirements. First, we compare the compliance costs of the final UST regulation with its total monetized avoided costs (section 7.1). We then consider cost-effectiveness measures which provide estimates of expenditures per unit reduction of releases achieved by the final UST regulation (section 7.2).

EPA's analysis shows that the final UST regulation will likely provide a net cost savings to society, but the cost-benefit and cost-effectiveness analyses presented here provide an incomplete estimate of benefits, because the final UST regulation is expected to provide other benefits that are not expressed in monetary terms. In addition, the avoided remediation costs associated with the regulation represent an equity-enhancing effect because the demand for publicly-funded remediation is reduced; all else held constant, the increased compliance costs will fall on the specific operators who are not currently implementing the practices and technologies identified in the regulation. This may result in some facilities bearing additional costs, but should improve overall equity and efficiency by ensuring that operators who are adhering to best practices already (in the baseline) are not at a competitive disadvantage because other operators rely on the availability of publicly-funded remediation.

OMB Circular A-4, numerous statutes, and Executive Orders require EPA to consider not only the costs and benefits of the regulation but also distributional impacts (e.g., impacts on minority and low-income populations, children's health, and energy distribution). As such, the final regulatory decision is a policy judgment that must take into account a number of factors in addition to the benefits and costs.

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In addition, the selection of a discount rate for estimating the present value of future costs and benefits is a complex issue. To reflect a range of possible future costs and benefits, we present two estimates of discounted costs and benefits (section 7.3); one based on a seven percent discount rate, and one based on a three percent discount rate.

7.1 Cost Benefit Comparison

In this section, we compare the total costs of the regulation with its total monetized and non-monetized avoided costs and benefits. **Exhibit 7-1** summarizes total costs and monetized avoided costs of the final UST regulation. The costs in the exhibit represent the compliance costs of the final UST regulation, including state government administrative costs.

The exhibit also identifies the social benefits of the proposed requirements that are not captured in avoided costs. As discussed in Chapter 4, a number of benefits could not be monetized. These include groundwater protection, mitigation and avoidance of acute events, ecological benefits, and human health risks compared to the baseline in which the releases occur and are remediated. Finally, EPA did not estimate benefits or avoided costs associated with changes in regulation at facilities with FCTs or AHFDSs.

Exhibit 7-1 demonstrates that the final UST regulation will likely avoid more costs than it creates, generating cost savings to society. EPA estimates that the Selected Option could generate $160 million per year in savings to society (reflecting the average of four estimates: $39 million in net costs, and $120 million, $180 million, and $370 million in savings). Alternatives 1 and 2 could also have a net benefit of $160 million (reflecting the average of four estimates for each alternative: $81 million in net costs and $140 million, $220 million, and $380 million in savings for Alternative 1; or $25 million in net costs and $150 million, $150 million, and $350 million in savings for Alternative 2). These estimates only include cost savings for conventional UST systems and EGTs.

Exhibit 7-1

Comparison Of Annual Compliance Costs And Cost Savings[f,d]

	Selected Option (2012$ millions)	Alternative 1 (2012$ millions)	Alternative 2 (2012$ millions)
Annual Avoided Costs[a]			
Releases and groundwater incidents: average value *(range of all values in italics)*	$300 *($110-$510)*	$440 *($200-$650)*	$220 *($44-$410)*
Vapor intrusion: average value *(range of all values in italics)*	$4.5 *($1.7-$7.9)*	$5.9 *($2.5-$9.1)*	$3.1 *($0.56-$6.0)*
Product loss *(range of all values in italics)*	$3.1 *($0.86-$6.5)*	$3.8 *($0.78-$7.6)*	$2.4 *($0.36-$5.2)*
Annual Compliance Costs			
Conventional UST systems[b]	$130	$280	$63
Emergency generator tanks (EGTs)	$2.0	$2.3	$2.0
Airport hydrant fuels distribution systems (AHFDSs)	$10	< $0.1	N/A
UST systems with field-constructed tanks (FCTs)	$11	< $0.1	N/A
Cost to owners/operators to read regulation	$5.5	$5.5	$5.5
State government administrative costs[c]	$0.12	$0.12	$0.12
Total Annual Avoided Costs *(range of all values in italics)*	**$310** *($120-$530)*	**$450** *($210-$670)*	**$230** *($45-$420)*
Total Annual Compliance Costs[d]	**$160**	**$290**	**$70**
Net Cost (Savings) to Society[d,g] **[Total Compliance Costs *less* Total Avoided Costs]** *(range of all values in italics)*	**($160)** *$39- ($370)*	**($160)** *$81 - ($380)*	**($160)** *$25 - ($350)*
Non-Monetized Benefits[e]			
Groundwater protected (billion gallons)	130 (50-240)	170 (74-270)	92 (17-180)
Acute events and large-scale releases (e.g., releases from AHFDSs and FCTs)	Not estimated	Not estimated	Not estimated
Ecological benefits	Not estimated	Not estimated	Not estimated
Human health risks	Not estimated	Not estimated	Not estimated

[a] Avoided costs are estimated for conventional UST systems and emergency generator tanks (EGTs) only. Avoided remediation costs from releases and groundwater incidents are the costs related to site remediation. Avoided vapor intrusion costs include additional avoided costs associated with the remediation of vapor intrusion cases; the RIA does not address human health risk associated with vapor intrusion. Avoided product loss costs are also separate and additive.

[b] Conventional UST systems include all systems that are not AHFDSs, FCTs, or EGTs.

[c] The costs for UST systems directly owned or operated by local, state, and federal government entities are included in the estimates of compliance costs within the other categories. Costs shown here reflect the administrative costs for state governments to read the regulation, apply for state program approval, process notifications of ownership changes, and process one-time notifications of existence for AHFDS and UST systems with FCTs.

[d] Compliance costs include direct compliance costs and state oversight costs. For this regulatory impact analysis, direct compliance costs and state oversight costs provide a reasonable proxy to assess the final UST regulation's social costs. See Chapter 3.1 for further discussion.

[e] Due to data and resource constraints, EPA is unable to monetize some of the positive impacts of the final UST regulation. Chapter 4 of this document provides a qualitative discussion of these benefits.

[f] Totals may not add up due to rounding. Cost estimates were derived using a seven percent discount rate.

[g] The results show that all but one of the four estimates of cost savings for conventional systems exceed total regulatory costs (including FCT and AHFDS systems). As explained in Chapter 4 and Appendix H, one of the four experts provided estimates of avoided releases and averted groundwater incidents that do not result in net cost savings to society from the Selected Option. However, this expert also assumed a high level of noncompliance with the final UST regulation that is not consistent with the assumption of 100 percent compliance in the cost estimates. As a result, this low-end estimate of potential cost savings represents likely understates the cost savings that would be associated with a consistent, 100 percent compliance scenario. See Chapter 4 and Appendix H for detailed discussion of how these assumptions affect net benefits of the final UST regulation as calculated using responses from Expert 2.

7.1.1 Net Costs of the Regulation: Potential Underestimates of Cost Savings and Benefits

The results show that three of the four estimates of cost savings for conventional systems exceed total regulatory costs for all systems, including both costs to conventional systems and costs to FCT and AHFDS systems (for which cost savings were not estimated). As explained in Chapter 4 and Appendix H, one of the four experts provided estimates of avoided releases and averted groundwater incidents that do not result in net cost savings to society from the Selected Option. However, this expert also assumed a high level of noncompliance with the final UST regulation that is not consistent with the assumption of 100 percent compliance in the cost estimates. As a result, this low-end estimate of potential cost savings likely understates the cost savings that would be associated with a consistent, 100 percent compliance scenario.

In addition, this analysis may understate avoided costs for the following reasons:

- This analysis does not monetize benefits associated with groundwater protection, mitigation and avoidance of acute events, ecological benefits, human health risks, and avoided property devaluation relative to the baseline.

- This analysis does not monetize avoided costs associated with FCT and AHFDS systems. Compliance costs for these systems are monetized.

- This analysis does not quantify avoided remediation costs associated with reductions in release size (i.e., extent), other than the change in incidence of groundwater contamination. The same reductions in release volume that lower the incidence of groundwater contamination would likely also reduce the number of large extent releases of all types and decrease the average size of smaller releases.

7.1.2 Net Costs of the Regulation: Cost Savings to Public and Private Entities

While EPA opted to express all cost savings as "benefits to society" in this analysis, it is also common practice in RIAs to calculate the costs of a regulation by subtracting cost savings from cost increases to affected entities.[225] Under this regulation, the cost savings of avoided releases would in some cases reduce burden on state funds, but a portion of the remediation costs would also be borne directly by regulated entities. One option for presenting total costs of the regulation, therefore, would have been to present the net costs to regulated facilities *after* accounting for avoided remediation costs. However, because it is impossible to predict which facilities would enjoy cost savings, EPA opted to present industry costs and industry-related avoided costs separately in the main analysis.

This section considers the net cost impact on facilities when accounting for avoided remediation costs. **Exhibit 7-2** provides a more detailed breakout of the estimated cost savings

[225] The practice of subtracting cost savings from cost increases to estimate the net costs of a regulation is consistent with OMB Circular A-4. Circular A-4 explains: "You should also try to monetize any cost savings as a result of an alternative and either add it to the benefits or subtract it from the costs of that alternative." (U.S. Office of Management and Budget. Circular No. A-4. September 17, 2003.)

for conventional systems and EGTs. The exhibit compares cost savings directly to the private-sector compliance costs of the regulation for those systems.

The exhibit shows that, in general, the net cost of the regulation to private-sector entities falls well below $100 million in the Selected Option and Alternative 2 when avoided costs to the private sector are considered. Only under Alternative 1 do net costs to the private sector exceed $100 million under expert estimates.

Exhibit 7-2

Summary Of Net Costs To Private Sector for Conventional Systems and EGTs (2012$ millions)

Selected Option					
	Expert 1	Expert 2	Expert 3	Expert 4	Average
Private Sector Compliance Cost	**$130**				
Total Cost Savings[a]	**$330**	**$120**	**$270**	**$530**	**$310**
Public Sector Cost Savings[b]	$190	$65	$150	$290	$170
Private Sector Cost Savings	$150	$52	$120	$240	$140
Net Cost to Private Sector [Private Sector Compliance Cost – Private Sector Cost savings]	**($17)**	**$77**	**$6**	**($110)**	**($11)**
Alternative 1					
	Expert 1	Expert 2	Expert 3	Expert 4	Average
Private Sector Compliance Cost	**$280**				
Total Cost Savings[a]	**$500**	**$210**	**$420**	**$670**	**$450**
Public Sector Cost Savings[b]	$290	$120	$240	$370	$250
Private Sector Cost Savings	$210	$88	$190	$300	$200
Net Cost to Private Sector [Private Sector Compliance Cost – Private Sector Cost savings]	**$67**	**$190**	**$93**	**($15)**	**$85**
Alternative 2					
	Expert 1	Expert 2	Expert 3	Expert 4	Average
Private Sector Compliance Cost	**$65**				
Total Cost Savings[a]	**$220**	**$45**	**$220**	**$420**	**$230**
Public Sector Cost Savings[b]	$130	$26	$120	$240	$130
Private Sector Cost Savings	$92	$19	$99	$190	$99
Net Cost to Private Sector [Private Sector Compliance Cost – Private Sector Cost savings]	**($28)**	**$45**	**($34)**	**($120)**	**($35)**

Notes:

[a] As explained in Chapter 4 and Appendix H, one of the four experts provided estimates of avoided releases and averted groundwater incidents that do not result in net cost savings to society from the Selected Option. This expert also assumed a high level of noncompliance with the final UST regulation that is not consistent with cost modeling. See Chapter 4 and Appendix H for detailed discussion of how these assumptions affect net benefits of the final UST regulation as calculated using responses from Expert 2.

[b] Values are estimated in Chapter 5.2.4. To provide a conservative estimate of net costs to the private sector, this table presents the low deductible scenario results. These values represent potential reductions in public expenditures in states with active state funds. We note that to realize the savings in public expenditures in the near term, state government action would be required to lower petroleum fees. Alternatively, to the extent that funds are not constrained in their use, a redistribution of funds (e.g., to existing sites awaiting cleanup) could also represent a significant public benefit through more rapid completion of existing sites.

7.1.3 Alternative Baseline: Potential Decreases in Future Cost Savings

In addition to the primary analysis presented above, we also consider the comparison of costs and benefits of the final UST regulation in the alternative baseline scenario, where the universes of releases and UST systems decline over time in accordance with historical trends. In this alternative baseline, the universe of releases is smaller relative to the original baseline than the universe of UST systems; as described in Chapters 3 and 4, estimates of compliance costs do not change substantially under the alternative baseline, while estimates of avoided costs decrease by approximately 31 percent. However, even in this scenario, the final UST regulation may avoid more costs than it creates, potentially generating cost savings to society. EPA estimates that the Selected Option in the alternative baseline could generate $60 million per year in savings to society (reflecting the average of four estimates: $74 million in net costs, $32 million, $75 million, and $210 million). Alternative 1 could generate $25 million per year in savings to society (reflecting the average of four estimates: $140 million in net costs, $7 million, $61 million, and $170 million), while Alternative 2 could generate savings of $87 million (reflecting the average of four estimates: $39 million in net costs, $81 million, $84 million, and $220 million). These results are presented in **Exhibit 7-3**.

Exhibit 7-3

Comparison Of Annual Compliance Costs And Cost Savings Under Alternative Baseline[c,e]

	Selected Option (2012$ millions)	Alternative 1 (2012$ millions)	Alternative 2 (2012$ millions)
Total Annual Avoided Costs[a,b] *(range of all values in italics)*	$220 *($81-$360)*	$310 *($140-$460)*	$160 *($31-$290)*
Total Annual Compliance Costs[c]	$160	$290	$70
Net Cost (Savings) to Society[c,d] **[Total Compliance Costs *less* Total Avoided Costs]** *(range of all values in italics)*	**($60)** *$74- ($210)*	**($25)** *$140 – ($170)*	**($87)** *$39 - ($220)*

[a] Avoided costs are estimated for conventional UST systems and emergency generator tanks (EGTs) only.

[b] Due to data and resource constraints, EPA is unable to monetize some of the positive impacts of the final UST regulation. Chapter 4 of this document provides a qualitative discussion of these benefits.

[c] Compliance costs include direct compliance costs and state oversight costs. For this regulatory impact analysis, direct compliance costs and state oversight costs provide a reasonable proxy to assess the final UST regulation's social costs. See Chapter 3.1 for further discussion.

[d] The results show that all but one of the four estimates of cost savings for conventional systems exceeded total regulatory costs (including FCT and AHFDS systems). As explained in Chapter 4 and Appendix H, one of the four experts provided estimates of avoided releases and averted groundwater incidents that do not result in net cost savings to society from the Selected Option. However, this expert also assumed a high level of noncompliance with the final UST regulation that is not consistent the assumption of 100 percent compliance in the cost estimates. As a result, this low-end estimate of potential cost savings represents likely understates the cost savings that would be associated with a consistent, 100 percent compliance scenario. See Chapter 4 and Appendix H for detailed discussion of how these assumptions affect net benefits of the final UST regulation as calculated using responses from Expert 2.

[e] Totals may not add up due to rounding. Cost estimates were derived using a seven percent discount rate.

7.2 Cost-Effectiveness Analysis

We measure cost-effectiveness by considering the expected cost per release avoided. This cost-effectiveness measure is useful for comparing the resources required to eliminate a single release under each alternative. For the purpose of this analysis, we consider avoided releases to be both releases altogether avoided and groundwater incidents averted due to the final UST regulation. As presented in **Exhibit 7-4**, we find that the cost per release avoided is approximately $43,000 to $200,000 under the Selected Option, compared with $68,000 to $250,000 under Alternative 1 and $25,000 to $270,000 under Alternative 2. In general, this compares favorably with average release remediation costs presented in **Exhibit 4-2** in Chapter 4, which range between $98,000 and $210,000.[226]

This regulatory impact analysis suggests that, in addition to improving the alignment of incentives, release prevention is likely to be less costly than release remediation under the Selected Option and Alternative 2 and in some instances under Alternative 1.

Exhibit 7-4

Cost-Effectiveness: Number Of Avoided Releases And Groundwater Incidents[a]

	Selected Option	Alternative 1	Alternative 2
Avoided releases and groundwater incidents	2,073 (772-3,646)	2,708 (1,148-4,213)	1,427 (257-2,753)
Compliance cost[b] ($ million)	$160	$290	$70
Cost per release avoided ($ million)	**$0.08** **($0.04 - $0.20)**	**$0.11** **($0.07 - $0.25)**	**$0.05** **($0.03 - $0.27)**

[a] Cost estimates were derived using a seven percent discount rate.

[b] Compliance cost includes direct compliance costs and state oversight costs. For this regulatory impact analysis, direct compliance costs and state oversight costs provide a reasonable proxy to assess the final UST regulation's social costs. See Chapter 3.1 for further discussion.

7.3 Costs and Beneficial Effects Under Alternative Discount Rates

The selection of the rate at which to discount future costs and benefits is complex. To assess the sensitivity of our results to our choice of discount rate, **Exhibit 7-5** presents a summary of total compliance costs and avoided remediation costs considering an alternate discount rate of three percent. Costs change little because a reduction in interest rates both reduces time value of money (TVM) costs and increases costs that have a delay before

[226] The one exception to this conclusion is Expert 2. As explained in Chapter 4 and Appendix H, one of the four experts provided estimates of avoided releases and averted groundwater incidents that do not result in net cost savings to society from the Selected Option. This expert also assumed a high level of noncompliance with the final UST regulation that is not consistent with the cost modeling, and likely understates the cost savings associated with the 100 percent compliance that is assumed in the cost analysis. See Chapter 4 and Appendix H for detailed discussion of how these assumptions affect net benefits of the final UST regulation as calculated using responses from Expert 2.

implementation.[227,228] The net result of a change from a discount rate of seven percent to a discount rate of three percent is an overall increase in the cost of the regulation of less than $10 million per year, indicating that TVM and delayed-implementation cost effects essentially offset each other.

Discount rates are also involved in our estimate of annual avoided costs. In particular, we use them to obtain constant annual avoided costs for those requirements in which the affected universe grows over time and to calculate the delay until positive impacts accrue.[229] Here, the effect of lowering interest rate is more significant, as all requirements are discounted by at least one period. As **Exhibit 7-5** shows, a change in the discount rate increases avoided costs from a range of $120 million - $530 million using a seven percent discount rate to $130 million - $610 million using a three percent discount rate. This increase is largely due to the fact that we discount all avoided costs by at least one year, as outlined in **Exhibit 1-2**.

We conclude that, while a reduction in the discount rate to three percent leaves annual compliance costs essentially unchanged at $160 million, avoided costs increase by $16 million to $84 million per year. As such, annual savings to society would increase from a range of $39 million in net costs to $370 million in net savings, to a range of $25 million in net costs to $450 million in net savings if EPA relies on a three percent discount rate.

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[227] When amortizing a value over time, if all other factors are held constant, a reduction in the rate of interest decreases the annual payment.

[228] The rate of discount enters into our calculation of time value of money costs. Higher discount rates increase these costs, while lower discount rates cause them to decrease. See Appendix D for details.

[229] Requirements for which the universe is assumed to grow over time are the elimination of flow restrictors as overfill prevention for new tanks and when overfill prevention equipment is replaced, closure of lined tanks that cannot be repaired, and all Energy Policy Act requirements in Indian country, with the exception of operator training.

Exhibit 7-5

Compliance Costs And Beneficial Impacts Under Alternative Discount Rates[d,e]

Avoided Cost	Selected Option 7 percent discount rate ($ millions)	Selected Option 3 percent discount rate ($ millions)
Annual Avoided Costs[a]		
Releases and groundwater incidents	$300 ($110-$510)	$350 ($130-$590)
Vapor intrusion	$4.5 ($1.7-$7.9)	$4.7 ($1.7-$8.2)
Product loss	$3.1 ($0.86-$6.5)	$3.3 ($0.89-$6.8)
Annual Compliance Costs		
Conventional UST systems[b]	$130	$130
Emergency generator tanks (EGT)	$2.0	$2.1
Airport hydrant fuels distribution systems (AHFDSs)	$10	$12
UST systems with field-constructed tanks (FCTs)	$11	$12
Cost to owners/operators to read regulation	$5.5	$3.9
State government administrative costs[c]	$0.1	$0.1
Total Annual Avoided Costs	**$310 ($120-$530)**	**$360 ($130-$610)**
Total Annual Compliance Costs[d]	**$160**	**$160**
Net Cost (Savings) to Society[d,f] [Total Compliance Costs *less* Total Avoided Costs]	**($160) $39 - ($370)**	**($200) $25 - ($450)**

[a] Avoided costs are estimated for conventional UST systems and emergency generator tanks (EGTs) only.

[b] Conventional UST systems include all systems that are not AHFDSs, FCTs, or EGTs.

[c] The costs for UST systems directly owned or operated by local, state, and federal government entities are included in the estimates of compliance costs within the other categories. Costs shown here reflect the administrative costs for state governments to read the regulation, apply for state program approval, process notifications of ownership changes, and process one-time notifications of existence for AHFDS and UST systems with FCTs.

[d] Compliance costs include direct compliance costs and state oversight costs. For this regulatory impact analysis, direct compliance costs and state oversight costs provide a reasonable proxy to assess the final UST regulation's social costs. See Chapter 3.1 for further discussion.

[e] Totals may not add up due to rounding.

[f] As explained in Chapter 4 and Appendix H, one of the four experts provided estimates of avoided releases and averted groundwater incidents that do not result in net cost savings to society from the Selected Option. This expert also assumed a high level of noncompliance with the final UST regulation that is not consistent with cost modeling. See Chapter 4 and Appendix H for detailed discussion of how these assumptions affect net benefits of the final UST regulation as calculated using responses from Expert 2.

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TRANSCRIPT OF PROPOSED UNDERGROUND STORAGE TANK REGULATIONS PUBLIC HEARING ON SEPTEMBER 11, 2019

Michael O'Mallan: This hearing is going to be recorded for the record. This is the Public Hearing Guam Underground Storage Tank Regulations. Welcome and thank you for coming. Today's date is September 11, 2019. The time is 3:00 p.m. Guam Environmental Protection Agency (Guam EPA) Administration Building 17-3304 Mariner Avenue, Tiyan.

In accordance with Title 5 Guam Code Annotated §9301(a), the Guam EPA would like to notify the general public and owner/operators of underground storage tanks containing regulated substances of a Public Hearing for 22 GAR, which is the Guam Administrative Rules and Regulations (GAR), Chapter 50, Guam EPA UST Regulations. An Ad was placed in The Guam Daily Post on August 5, 2019 and August 30, 2019.

Public comment review period started August 5, 2019 and it's up until September 19, 2019.

The Guam Environmental Protection Agency (Guam EPA) seeks to propose rules and regulations for the underground storage of regulated substances by way of underground storage tanks (USTs). In accordance with 10 GCA §76104(d), and as enacted by passage of Guam Public Law 30-36 on June 19, 2009, the Guam EPA administrator shall "enact, modify, update, repeal, and enforce rules and regulations governing UST design, construction, installation, release detection and inventory control, compatibility, record maintenance, reporting, corrective action, closure, and financial responsibility in order to enforce this Chapter;"

The promulgation of these proposed rules and regulations seeks to administratively satisfy the following:

- Compliance with the United States Environmental Protection Agency's (USEPA) for governing local USTs in a manner that is consistent or more stringent with federal regulations under Resource Conservation and Recovery Act (RCRA), Subtitle I, and in accordance with 40 CFR 280,
- A requirement to achieve State Program Approval (SPA) for local primacy and funding to have sole authority over USTs on Guam, pursuant to 40 CFR 281
- Adherence to the $250 annual fee associated with permitting a UST, in accordance with 10 GCA § 76117(a), and
- Administer nominal fees that will allow Guam EPA to comply with RCRA I requirements such as regular release detection equipment testing and walkthrough inspections that seek to ensure proper operation and maintenance as keys for preventing and quickly identifying regulated substance releases

At this present time, Guam does not have a SPA UST state program. Guam EPA administers a UST Program utilizing the federal regulations, rendering the regulated community to bear cost burdens to comply with both federal mandates and local statutes. These proposed regulations will incorporate current

RCRA I requirements for USTs, and provide Guam with a single UST SPA program that will be aligned with federal regulations.

At this time if we would wanna do something real quick, the crowd is small enough can we go around the room to just identify yourself, your affiliation, you don't have to just say pass.

Vince Pereira: My name is Vincent Pereira, Guam EPA Program Manager for the Hazardous Waste.

Blaise Koki: Blaise Koki, Naval Base Guam.

Nicolas Moore: Nicolas Moore, Unitek Environmental Technician.

Brad Wolfe: Brad Wolfe, Unitek Environmental I'm a Scientist for the Company.

Brian Nunotani: Brian Nunotani, Hydro Air Pacific the Branch Manager.

Jon Gapasin: Jon Gapasin, Guam Petroleum Services.

Oscar Delfin: Oscar Delfin, NavFac Marianas.

Layli Terrill: Layli Terrill, Andersen Environmental.

Paul Torre: Paul Torre, Skilled Nursing Unit Barrigada.

Kristan Finney: Kristan Finney.

Mevany Hecita: Mevany Hecita, Guam EPA Hazardous Waste Management Program.

Don Quinata: Don Quinata, Guam EPA Hazardous Waste Management Program.

Michael: I'm Michael O'Mallan, Guam EPA Hazardous Waste Management Program.

Michael: At this time we want to open the floor to any questions regarding the proposed Underground Storage Tank Regulated Substance Regulations.

Brian: I got to a question for underground tank vent line. Is it mandated that the vent line be contained as in double-wall containment on a petroleum tank vent line?

Michael: I believe according to the proposed regulations all underground piping be double-walled.

Vince: It's not carrying any petroleum fuel?

Brian: No.

Vince: We can double check that for you if that's your concern.

Brian: I would appreciate that or can we get or download the regulations.

Vince: The regulations Is available at the Guam EPA website. It's at www.epa.guam.gov. Just to let you know the comment period for the regulations ends on September 19th of this month. We had it out on August 5th and we're complying with the requirements where we giving 45 days comment period for people interested in taking a look at it. But so far as submitting comments it has to be written, we do not accept emails.

Brian: Ok fair enough.

Vince: We will definitely take at that for you. We were hoping people attending this already read the regulations itself since we had it out for 45 days, that's the reason we are having this hearing. To make sure we touch all bases concerning any persons interested in finding out what the regulation is.

Brad: When will the regulations become effective? I guess it goes through this period?

Vince: The 45 day comment period ends on September 19th then there's a Triple A process that we have to go through …**

** ***At which times a brief conversation between minutes 08:15 through minute 12:06 on the Administrative Adjudication Law (aka the Triple A Process).***

Vince: Could you please introduce yourself Ma'am.

Conchita SN Taitano: I'm Conchita SN Taitano with Guam EPA the Air & Land Division Administrator.

Conchita: So no questions.

Vince: I am waiting for everybody that has other questions. If none, then we can close the meeting.

Conchita: Is there another opportunity for them to submit comments. Or today's the last day?

Vince: They have until the 19th of this month.

Conchita: OK you have until the 19th.

Vince: So take a look at the regulations it's on the website.

Conchita: Now how can they provide comments it has to be written?

Vince: Yes Ma'am.

Conchita: Do we accept comments via email or does..

Vince: No we don't accept.

Conchita: Ok so can we just reiterate what are the conditions for receiving even though it's in the notice but let's just repeat it again.

Michael: OK, so the ad that went out in the Daily Post, clearly stated, Guam UST relevant to this public hearing can be viewed at the Agency's administration building in Tiyan from 8:00 a.m. to 4:30 p.m. on business days, beginning on Monday, August 5, 2019. So there are five (5) copies maintained at our front office. The proposed regulations are also available at epa.guam.gov." and that's our EPA website.

Conchita: So it's available online.

Michael: Yes. Written comments are welcomed and must be received, by the agency via hand delivery or mail and should be addressed to: Administrator, c/o Guam EPA: 17-3304 Mariner Avenue, Tiyan, Barrigada, Guam 96913-1617. That's our physical address.

Conchita: Now it has to be received or it has to be postmarked?

Michael: Written comments must be received or postmarked no later than 5:00 p.m. on September 19, 2019.

Conchita: So postmarked even if the mail comes in as long as it has that postmarked that says the 19th right?

Michael: Facsimile and e-mail submittals will not be accepted.

Conchita: Ok, so that's clear to everyone right? No electronic comments will be accepted. Ah then you explained what the process is if there's no significant comments then it would be presented to the Board of Directors?

Michael: Yes.

Conchita: For their concurrence and they would be the ones to transmit the documents to?

Michael: The Legislative Secretary a copy..

Vince: No, it would go the Attorney General first.

Conchita: It goes to the Attorney General's Office so a lot of review in this and once the AGs Office approves it, it goes to?

Nic Lee: The Governor.

Conchita: The Governor. And then the Governor officially transmits it to the Legislature, the Legislature in turn may or may not have a public hearing it is our experience is that they always have a public hearing. So you'll have another opportunity to comment just in case you miss the 19th deadline.

Vince: And they can even make changes.

Conchita: The Legislature can always make changes. So no other questions?

Vince: Sir or Ma'am, if you don't have any other questions, its 3:17 p.m. we would like to close the meeting, if there is no other question? September 11th.

GUAM ENVIRONMENTAL PROTECTION AGENCY

GUAM UNDERGROUND STORAGE TANK REGULATIONS

PUBLIC HEARING

Wednesday, September 11, 2019 at 3:00 p.m.

Guam EPA Administration Offices - Building 17-3304 Mariner Avenue, Tiyan

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GUAM ENVIRONMENTAL PROTECTION AGENCY

GUAM UNDERGROUND STORAGE TANK REGULATIONS

PUBLIC HEARING

Wednesday, September 11, 2019 at 3:00 p.m.

Guam EPA Administration Offices - Building 17-3304 Mariner Avenue, Tiyan

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Hon. Leevin Taitano Camacho
Attorney General of Guam

September 17, 2020

RECEIVED
OCT 0 9 2020
Guam Environmental Protection Agency

Mr. Walter Leon Guerrero
Administrator
Guam Environmental Protection Agency
17-3304 Mariner Ave.
Tiyan, Barrigada, Guam 96913-1617

Subject: **Approval of Proposed Revisions to Guam Underground Storage Tank Rules and Regulations (Ref: GEPA 19-0744)**

Dear Administrator Leon Guerrero:

The Office of the Attorney General has completed its review of the Guam Environmental Protection Agency's (GEPA's) enclosed proposed revisions to the Guam Underground Storage Tank Rules and Regulations received by this Office on August 4, 2020.

Pursuant to 5 GCA § 9303 of the Administrative Adjudication Law ("AAL"), I am approving the proposed rules as to form, constitutionality, compliance with the applicable requirements of the AAL, and compliance with your agency's statutory authority to promulgate rules.

Please be reminded that the AAL's current rule-making procedures require the Agency to file the proposed rules, together with the written approval of *I Maga'hâga* as to policy and approval of the Attorney General as to compliance with the law, with the Speaker of *I Liheslatura* in a format and manner specified in 5 GCA 9303(a)(4). Section 9303(c) further provides that no rule shall become effective until after ninety (90) calendar days have elapsed from the date of filing with the Speaker of *I Liheslatura* during which time and within seventy-five (75) calendar days from the date of filing of the rules with the Speaker, the legislative committee with oversight of the subject matter or the Committee of the Whole shall have conducted one or more public hearings on the proposed rules. After the public hearing and within the 90-day time period, *I Liheslatura* may approve, disapprove, or amend the proposed rules by the passage of a bill into law. In the event *I Liheslatura* declines to formally approve, disapprove, or amend the proposed rules by the

passage of a bill into law, the Speaker may certify and the Legislative Secretary may attest to the default approval of compliant rules.

If you have any questions, please contact Deputy Attorney General of the Solicitor Division, Karl P. Espaldon, at (671) 475-3324 ext. 3115/3660.

Sincerely,

LEEVIN TAITANO CAMACHO
Attorney General

Enclosure

REVISED

GUAM ADMINISTRATIVE RULES AND REGULATIONS (GAR)

TITLE 22

GUAM ENVIRONMENTAL POTECTION AGENCY

CHAPTER 50

GUAM UNDERGROUND STORAGE TANK REGULATIONS

ATTN: Office of the Attorney General, Solicitors Division

REFERENCE NUMBER: 19-0744 GEPA

RE: REVISED 22 GAR Chapter 50

DATE: August 4, 2020

RECEIVED
MANUEL FEJERAN
OFFICE OF THE ATTORNEY GENERAL
ADMINISTRATION
8.4.20 10:22AM

GUAM ADMINISTRATIVE RULES AND REGULATIONS (GAR)

TITLE 22

GUAM ENVIRONMENTAL POTECTION AGENCY

CHAPTER 50

GUAM UNDERGROUND STORAGE TANK REGULATIONS

Doc. No. 35GL-20-2341.*

GUAM ADMINISTRATIVE RULES AND REGULATIONS (GAR)

TITLE 22

GUAM ENVIRONMENTAL PROTECTION AGENCY (Guam EPA)

CHAPTER 50

GUAM UNDERGROUND STORAGE TANK REGULATIONS

Article 1. Scope and Installation Requirements for Partially Excluded UST Systems
Article 2. UST Systems: Design, Construction, and Installation
Article 3. General Operating Requirements
Article 4. Release Detection
Article 5. Release Reporting, Investigation, and Confirmation
Article 6. Release Response Action
Article 7. Out-of-Service UST Systems and Closure
Article 8. Financial Responsibility
Article 9. Lender Liability
Article 10. Operator Training
Article 11. Reserved
Article 12. Permits and Variances
Article 13. Enforcement

ARTICLE 1
SCOPE AND INSTALLATION REQUIREMENTS FOR PARTIALLY EXCLUDED UST SYSTEMS

§ 50101 to § 50109. [Reserved]
§ 50110. Applicability
§ 50111. Installation requirements for partially excluded UST systems

§ 50112. Definitions
§ 50113. Installation requirements for partially excluded UST systems--codes of practice
§ 50114 to § 50119. [Reserved.]

§ 50101 to § 50109. [Reserved]

§ 50110. Applicability.

(a) The requirements of this chapter apply to all owners and operators of an UST system as defined in § 50112 except as otherwise provided in this section.

(1) Airport hydrant fuel distribution systems, UST systems with field-constructed tanks, and UST systems that store fuel solely for use by emergency power generators must meet the requirements of this chapter as follows:

(A) Airport hydrant fuel distribution systems and UST systems with field-constructed tanks must meet all applicable requirements of this chapter, except that those installed before October 13, 2015 must meet the applicable requirements of Articles 4, 8, 10, and 12 no later than one year after October 13, 2015.

(B) UST systems that store fuel solely for use by emergency power generators must meet all applicable requirements of this chapter except that those installed before October 13, 2015 must meet the applicable requirements of Article 4 no later than one year after October 13, 2015.

(2) Any UST system listed in subsection (c) must meet the requirements of § 50111.

(b) Exclusions. The following UST systems are excluded from the requirements of this chapter:

(1) Any UST system holding hazardous wastes listed or identified under 10 Guam Code Annotated (GCA), Chapter 76, Underground Storage of Regulated Substances, or the

rules adopted thereunder, or Subtitle C of the Solid Waste Disposal Act, or a mixture of such hazardous waste and other regulated substances;

(2) Any wastewater treatment tank system that is part of a wastewater treatment facility regulated under Section 402 or 307(b) of the Clean Water Act;

(3) Equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks;

(4) Any UST system that contains a de minimis concentration of regulated substances; and

(5) Any emergency spill or overflow containment UST system that is expeditiously emptied after use.

(c) Partial Exclusions. Articles 2, 3, 4, 5, 7, 10, and 12 do not apply to:

(1) Wastewater treatment tank systems not covered under subsection (b)(2);

(2) Aboveground storage tanks associated with:

(A) Airport hydrant fuel distribution systems; and

(B) UST systems with field-constructed tanks;

(3) Any UST systems containing radioactive material that are regulated under the Atomic Energy Act of 1954 (42 U.S.C. 2011 and following); and

(4) Any UST system that is part of an emergency generator system at nuclear power generation facilities licensed by the Nuclear Regulatory Commission and subject to Nuclear Regulatory Commission requirements regarding design and quality criteria, including but not limited to 10 C.F.R. Part 50.

(5) Owners and operators of oil-water separators and decontamination tanks must notify the Agency and obtain a permit to install a new flow through process and decontamination tank in accordance with Article 2, as applicable. Owners and operators of flow-through process tanks and decontamination tanks are not required to obtain, renew, or pay for an annual fee to operate the tank and are not required to comply with Articles 3, 4, 5, and 10.

(6) Owners and operators of oil-water separators and decontamination tanks shall pay for a fee to install and close the system, and to conduct site assessment upon closure in accordance with §§ 50171 and 50172 of Article 7; and

(7) Owners and operator of oil-water separators and decontamination tanks that are installed after October 13, 2018, must be designed, constructed, and installed in accordance with Article 2, unless directed otherwise by the Agency.

§ 50111. Installation requirements for partially excluded UST systems.

(a) Owners and operators must install an UST system listed in section 50110 (c)(1), (3), or (4) storing regulated substances (whether of single or double wall construction) that meets the following requirements:

(1) Will prevent releases due to corrosion or structural failure for the operational life of the UST system;

(2) Is cathodically protected against corrosion, constructed of non-corrodible material, steel clad with a non-corrodible material, or designed in a manner to prevent the release or threatened release of any stored substance; and

(3) Is constructed or lined with material that is compatible with the stored substance.

(b) Notwithstanding subsection (a), an UST system without corrosion protection may be installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life. Owners and operators must maintain records that demonstrate compliance with the requirements of this subsection for the remaining life of the tank.

§ 50112. Definitions.

When used in this Article, the following terms have the meanings given below:

(a) "Aboveground release" means any release to the surface of the

land or to surface water. This includes, but is not limited to, releases from the aboveground portion of an UST system and aboveground releases associated with overfills and transfer operations as the regulated substance moves to or from an UST system.

(b) "Airport hydrant fuel distribution system" (also called "airport hydrant system") means an UST system which fuels aircraft and operates under high pressure with large diameter piping that typically terminates into one or more hydrants (fill stands). The airport hydrant system begins where fuel enters one or more tanks from an external source such as a pipeline, barge, rail car, or other motor fuel carrier.

(c) "Ancillary equipment" means any devices including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps used to distribute, meter, or control the flow of regulated substances to and from an UST.

(d) "Belowground release" means any release to the subsurface of the land and to groundwater. This includes, but is not limited to, releases from the belowground portions of an underground storage tank system and belowground releases associated with overfills and transfer operations as the regulated substance moves to or from an underground storage tank.

(e) "Beneath the surface of the ground" means beneath the ground surface or otherwise covered with earthen materials.

(f) "Cathodic protection" is a technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell. For example, a tank system can be cathodically protected through the application of either galvanic anodes or impressed current.

(g) "Cathodic protection tester" means a person who can demonstrate an understanding of the principles and measurements of all common types of cathodic protection systems as applied to buried or submerged metal piping and tank systems. At a minimum, such persons must have education and experience in soil resistivity, stray current, structure-to-soil potential, and component electrical isolation measurements of buried metal piping and tank systems.

(h) "Class A operator" means the individual who has primary responsibility to operate and maintain the UST system in accordance with

applicable requirements established by the agency. The Class A operator typically manages resources and personnel, such as establishing work assignments, to achieve and maintain compliance with regulatory requirements.

(i) "Class B operator" means the individual who has day-to-day responsibility for implementing applicable regulatory requirements established by the agency. The Class B operator typically implements in-field aspects of operation, maintenance, and associated recordkeeping for the UST system.

(j) "Class C operator" means the individual responsible for initially addressing emergencies presented by a spill or release from an UST system. The Class C operator typically controls or monitors the dispensing or sale of regulated substances.

(k) "Compatible" means the ability of two or more substances to maintain their respective physical and chemical properties upon contact with one another for the design life of the tank system under conditions likely to be encountered in the UST.

(l) "Connected piping" means all underground piping including valves, elbows, joints, flanges, and flexible connectors attached to a tank system through which regulated substances flow. For the purpose of determining how much piping is connected to any individual UST system, the piping that joins two UST systems should be allocated equally between them.

(m) "Consumptive use" with respect to heating oil means consumed on the premises.

(n) "Containment sump" means a liquid-tight container that protects the environment by containing leaks and spills of regulated substances from piping, dispensers, pumps, and related components in the containment area. Containment sumps may be single walled or secondarily contained and located at the top of tank (tank top or submersible turbine pump sump), underneath the dispenser (under-dispenser containment sump), or at other points in the piping run (transition or intermediate sump).

(o) "Corrosion expert" means a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and

mathematics acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Such a person must be accredited or certified as being qualified by the National Association of Corrosion Engineers or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control of buried or submerged metal piping systems and metal tanks.

(p) "Dielectric material" means a material that does not conduct direct electrical current. Dielectric coatings are used to electrically isolate UST systems from the surrounding soils. Dielectric bushings are used to electrically isolate portions of the UST system (e.g., tank from piping).

(q) "Dispenser" means equipment located aboveground that dispenses regulated substances from the UST system.

(r) "Dispenser system" means the dispenser and the equipment necessary to connect the dispenser to the underground storage tank system. The equipment necessary to connect the dispenser to the underground storage tank system includes check valves, shear valves, unburied risers or flexible connectors, or other transitional components that are underneath the dispenser and connect the dispenser to the underground piping.

(s) "Electrical equipment" means underground equipment that contains dielectric fluid that is necessary for the operation of equipment such as transformers and buried electrical cable.

(t) "EPA" means the United States Environmental Protection Agency.

(u) "Excavation zone" means the volume containing the tank system and backfill material bounded by the ground surface, walls, and floor of the pit and trenches into which the UST system is placed at the time of installation.

(v) "Existing UST system" means an UST system for which installation commenced on or before December 22, 1988.

(w) "Exposure assessment" means a determination regarding the extent of exposure of, or potential for exposure of, individuals to regulated substances from a release from an UST or tank system. An exposure assessment shall be based on factors such as the nature and extent of

contamination, the existence of or potential for pathways of human exposure (including ground or surface water contamination, air emissions, dermal exposure, soil ingestion, and food chain contamination), the size of the community or communities within the likely pathways of exposure, an analysis of expected human exposure levels with respect to short-term and long-term health effects associated with identified contaminants, and any available recommended exposure or tolerance limits for the contaminants.

(x) "Farm tank" is a tank located on a tract of land devoted to the production of crops or raising animals, including fish, and associated residences and improvements. A farm tank must be located on the farm property. Farm includes fish hatcheries, rangeland, and nurseries with growing operations.

(y) "Field-constructed tank" means a tank constructed in the field. For example, a tank constructed of concrete that is poured in the field, or a steel or fiberglass tank primarily fabricated in the field is considered field-constructed.

(z) "Flow-through process tank" is a tank that forms an integral part of a production process through which there is a steady, variable, recurring, or intermittent flow of materials during the operation of the process. Flow-through process tanks do not include tanks used for the storage of materials prior to their introduction into the production process or for the storage of finished products or by-products from the production process.

(aa) "Free product" refers to a regulated substance that is present as a non-aqueous phase liquid (e.g., liquid not dissolved in water).

(bb) "Gathering lines" means any pipeline, equipment, facility, or building used in the transportation of oil or gas during oil or gas production or gathering operations.

(cc) "Hazardous substance" means a hazardous substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 as amended, except any substance regulated as a hazardous waste under Subtitle C of the Solid Waste Disposal Act.

(dd) "Hazardous substance UST system" means an underground storage tank system that contains a hazardous substance or any mixture of

such substances and petroleum, and that is not a petroleum UST system.
(ee) "Heating oil" means petroleum that is No. 1, No. 2, No. 4—light, No. 4—heavy, No. 5—light, No. 5—heavy, and No. 6 technical grades of fuel oil; other residual fuel oils (including Navy Special Fuel Oil and Bunker C); and other fuels when used as substitutes for one of these fuel oils. Heating oil is typically used in the operation of heating equipment, boilers, or furnaces.
(ff) "Hydraulic lift tank" means a tank holding hydraulic fluid for a closed-loop mechanical system that uses compressed air or hydraulic fluid to operate lifts, elevators, and other similar devices.
(gg) "Liquid trap" means sumps, well cellars, and other traps used in association with oil and gas production, gathering, and extraction operations (including gas production plants), for the purpose of collecting oil, water, and other liquids. These liquid traps may temporarily collect liquids for subsequent disposition or reinjection into a production or pipeline stream, or may collect and separate liquids from a gas stream.
(hh) "Maintenance" means the normal operational upkeep to prevent an underground storage tank system from releasing product.
(ii) "Motor fuel" means a complex blend of hydrocarbons typically used in the operation of a motor engine, such as motor gasoline, aviation gasoline, No. 1 or No. 2 diesel fuel, or any blend containing one or more of these substances (e.g., motor gasoline blended with alcohol).
(jj) "Noncommercial purposes" with respect to motor fuel means not for resale.
(kk) "On the premises where stored" with respect to heating oil means UST systems located on the same property where the stored heating oil is used.
(ll) "Operational life" refers to the period beginning when installation of the tank system has commenced until the time the tank system is properly closed under Article 7.
(mm) "Operator" means any person in control of, or having responsibility for, the daily operation of the UST system.
(nn) "Overfill release" is a release that occurs when a tank is filled beyond its capacity, resulting in a discharge of the regulated substance to the environment.

(oo) "Owner" means:

1. In the case of an UST system in use on November 8, 1984, or brought into use after that date, any person who owns an UST system used for storage, use, or dispensing of regulated substances; and
2. In the case of any UST system in use before November 8, 1984, but no longer in use on that date, any person who owned such UST immediately before the discontinuation of its use.

(pp) "Permit" means written authorization, as provided for in 10 GCA, Chapter 76, § 76117, from the Administrator to install or operate an UST or tank system. A permit authorizes owners or operators to install and operate an UST or tank system in a manner, or to do an act, not forbidden by 10 GCA Chapter 76, or by this chapter, but requiring review by the Administrator.

(qq) "Person" means an individual, trust, estate, firm, joint stock company, corporation (including a government corporation), partnership, association, commission, consortium, joint venture, commercial entity, the state or a county, the United States government, federal agency, interstate body, or any other legal entity.

(rr) "Petroleum" means petroleum, including crude oil or any fraction thereof, that is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

(ss) "Petroleum UST system" means an underground storage tank system that contains petroleum or a mixture of petroleum with de minimis quantities of other regulated substances. Such systems include those containing motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

(tt) "Pipe" or "piping" means a hollow cylinder or tubular conduit that is constructed of non-earthen materials.

(uu) "Pipeline facilities" (including gathering lines) means pipe rights-of-way and any associated equipment, facilities, or buildings.

(vv) "Regulated substance" means hazardous substances, petroleum, and any other substance designated by the agency that, when released into the environment, may present substantial danger to human health,

welfare, or the environment. The term regulated substance includes but is not limited to petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons, such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

(ww) "Release" means any spilling, leaking, emitting, discharging, escaping, leaching, or disposing from an UST system into groundwater, surface water, or subsurface soils.

(xx) "Release detection" means determining whether a release of a regulated substance has occurred from the UST system into the environment or a leak has occurred into the interstitial space between the UST system and its secondary barrier or secondary containment around it.

(yy) "Repair" means to restore to proper operating condition a tank, pipe, spill prevention equipment, overfill prevention equipment, corrosion protection equipment, release detection equipment or other UST system component that has caused a release of product from the UST system or has failed to function properly.

(zz) "Replaced" means

(1) For an underground storage tank – to remove an underground storage tank and install another underground storage tank; or

(2) For connected piping – to remove 50 percent or more of connected piping and install other piping, excluding connectors, connected to a single underground storage tank. For underground storage tanks with multiple piping runs, this definition applies independently to each piping run.

(aaa) "Residential tank" is a tank located on property used primarily for dwelling purposes.

(bbb) "Secondary containment" or "secondarily contained" means a release prevention and release detection system for a tank or piping. This system has an inner and outer barrier with an interstitial space that is monitored for leaks. This term includes containment sumps when used for interstitial monitoring of piping.

(ccc) "Septic tank" is a water-tight covered receptacle designed to receive or process, through liquid separation or biological digestion, the sewage discharged from a building sewer. The effluent from such receptacle is distributed for disposal through the soil and settled solids

and scum from the tank are pumped out periodically and hauled to a treatment facility.

(ddd) "Storm water collection system" or "wastewater collection system" means piping, pumps, conduits, and any other equipment necessary to collect and transport the flow of surface water run-off resulting from precipitation, or domestic, commercial, or industrial wastewater to and from retention areas or any areas where treatment is designated to occur. The collection of storm water and wastewater does not include treatment except where incidental to conveyance.

(eee) "Surface impoundment" is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials) that is not an injection well.

(fff) "Tank" is a stationary device designed to contain an accumulation of regulated substances and constructed of non-earthen materials (e.g., concrete, steel, plastic) that provide structural support.

(ggg) "Temporary closure" or "temporarily closed" means that owners and operators do not deposit regulated substances into the UST or tank system nor dispense regulated substances from the UST or tank system for sixty days or longer, except for UST systems that store fuel solely for use by emergency power generators and UST systems with field-constructed tanks. For UST systems that store fuel solely for use by emergency power generators and UST systems with field-constructed tanks, "temporary closure" or "temporarily closed" means that the UST or tank system is empty, as defined in section 50170(a), and owners and operators do not deposit regulated substances into the UST or tank system for sixty (60) calendar days or longer.

(hhh) "Under-dispenser containment" or "UDC" means containment underneath a dispenser system designed to prevent leaks from the dispenser and piping within or above the UDC from reaching soil, groundwater, and surface water.

(iii) "Underground area" means an underground room, such as a basement, cellar, shaft or vault, providing enough space for physical inspection of the exterior of the tank situated on or above the surface of the floor.

(jjj) "Underground release" means any belowground or below water release.

(kkk) "Underground storage tank" or "UST" means any one or combination of tanks (including underground pipes connected thereto) that is used to contain an accumulation of regulated substances, and the volume of which (including the volume of underground pipes connected thereto) is ten (10%) percent or more beneath the surface of the ground. This term does not include any:

(1) Farm or residential tank of one thousand one hundred gallons or less capacity used for storing motor fuel for noncommercial purposes;

(2) Tank used for storing heating oil for consumptive use on the premises where stored;

(3) Septic tank;

(4) Pipeline facility (including gathering lines):

(A) Which is regulated under 49 U.S.C. chapter 601; or

(B) Which is an intrastate pipeline facility regulated under state laws as provided in 49 U.S.C. chapter 601, and which is determined by the Secretary of Transportation to be connected to a pipeline, or to be operated or intended to be capable of operating at pipeline pressure or as an integral part of a pipeline;

(5) Surface impoundment, pit, pond, or lagoon;

(6) Storm water or wastewater collection system;

(7) Liquid trap or associated gathering lines directly related to oil or gas production and gathering operations; or

(8) Storage tank situated in an underground area (such as a basement, cellar, mine working, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

The term underground storage tank or UST does not include any pipes connected to any tank which is described in paragraphs (1) to (8).

(jjj) "Upgrade" means the addition or retrofit of some systems such as cathodic protection, lining, or spill and overfill controls to improve the ability of an underground storage tank system to prevent the release of

product.
(kkk) "UST system" or "tank system" means an underground storage tank, connected underground piping, underground ancillary equipment, and containment system, if any.
(lll) "Variance" means a special written authorization from the Administrator to own, install, or operate an UST or tank system in a manner deviating from, or to do an act that deviates from, the requirements of this chapter that are more stringent than 40 C.F.R. Part 280.
(mmm) "Wastewater treatment tank" means a tank that is designed to receive and treat an influent wastewater through physical, chemical, or biological methods.

§ 50113. Installation requirements for partially excluded UST systems--codes of practice.

(a) The following current codes of practice may be used as guidance for complying with § 50111:

(1) NACE International Standard Practice SP 0285, "External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection";

(2) NACE International Standard Practice SP 0169, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems";

(3) American Petroleum Institute Recommended Practice 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems"; or

(4) Steel Tank Institute Recommended Practice R892, "Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems".

§ 50114 to § 50119. [Reserved.]

ARTICLE 2
UST SYSTEMS: DESIGN, CONSTRUCTION, AND INSTALLATION

§ 50120. Performance Standards for UST Systems
§ 50121. Upgrading of UST Systems
§ 50122. [Reserved.]
§ 50123. Tank and Piping Design for Hazardous Substances UST System
§ 50124. Secondary Containment Design
§ 50125. Under-Dispenser Containment
§ 50126. Performance Standards and Design for UST System – Code of Practice
§ 50127 to § 50129. [Reserved.]

§ 50120. Performance Standards for UST Systems.

(a) In order to prevent releases due to structural failure, corrosion, or spills and overfills for as long as the UST system is used to store regulated substances, owners and operators of UST systems must meet all applicable requirements of this Article. UST systems must meet the requirements of this section as follows:

(1) UST systems installed after December 22, 1988, other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must meet the requirements of this section, except as specified in this Article.

(2) Airport hydrant fuel distribution systems and UST systems with field-constructed tanks installed after October 13, 2015 must meet the requirements of this section.

(b) Tanks. Each tank must be properly designed, constructed, and installed, and any portion underground that routinely contains product must be protected from corrosion, in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

(1) The tank is constructed of fiberglass-reinforced plastic; or

(2) The tank is constructed of steel and cathodically protected in

the following manner:

(A) The tank is coated with a suitable dielectric material;

(B) Field-installed cathodic protection systems are designed by a corrosion expert;

(C) Impressed current systems are designed to allow determination of current operating status as required in § 50131(3); and

(D) Cathodic protection systems are operated and maintained in accordance with § 50131 or according to guidelines established by the agency; or

(3) The tank is constructed of steel and clad or jacketed with a non-corrodible material; or

(4) The tank is constructed of metal without additional corrosion protection measures provided that:

(A) The tank is installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life; and

(B) Owners and operators maintain records that demonstrate compliance with the requirements of subparagraph (A) for the remaining life of the tank; or

(5) The tank construction and corrosion protection are determined by the agency to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than paragraphs (1) to (4).

(c) Piping. The piping that routinely contains regulated substances and is in contact with the ground must be properly designed, constructed, installed, and protected from corrosion in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

(1) The piping is constructed of a non-corrodible material; or

(2) The piping is constructed of steel and cathodically protected in the following manner:

(A) The piping is coated with a suitable dielectric material;

(B) Field-installed cathodic protection systems are designed by a corrosion expert;

(C) Impressed current systems are designed to allow determination of current operating status as required in § 50131(3); and

(D) Cathodic protection systems are operated and maintained in accordance with § 50131 or guidelines established by the agency; or

(3) The piping is constructed of metal without additional corrosion protection measures provided that:

(A) The piping is installed at a site that is determined by a corrosion expert to not be corrosive enough to cause it to have a release due to corrosion during its operating life; and

(B) Owners and operators maintain records that demonstrate compliance with the requirements of subparagraph (A) for the remaining life of the piping; or

(4) The piping construction and corrosion protection are determined by the agency to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than the requirements in paragraphs (1) to (3).

(d) Spill and overfill prevention equipment.

(1) Except as provided in paragraphs (2) and (3), to prevent spilling and overfilling associated with product transfer to the UST system, owners and operators must use the following spill and overfill prevention equipment:

(A) Spill prevention equipment that will prevent release of product to the environment when the transfer hose is detached from the fill

pipe (for example, a spill catchment basin); and

(B) Overfill prevention equipment that will:

(i) Automatically shut off flow into the tank when the tank is no more than ninety-five (95%) percent full;

(ii) Alert the transfer operator when the tank is no more than ninety (90%) percent full by restricting the flow into the tank or triggering a high-level alarm; or

(iii) Restrict flow thirty (30) minutes prior to overfilling, alert the transfer operator with a high-level alarm one minute before overfilling, or automatically shut off flow into the tank so that none of the fittings located on top of the tank are exposed to product due to overfilling.

(2) Owners and operators are not required to use the spill and overfill prevention equipment specified in paragraph (1) if:

(A) Alternative equipment is used that is determined by the agency to be no less protective of human health and the environment than the equipment specified in paragraph (1)(A) or (B); or

(B) The UST system is filled by transfers of no more than twenty-five (25) gallons at one time.

(3) Flow restrictors used in vent lines may not be used to comply with paragraph (1)(B) when overfill prevention is installed or replaced after October 13, 2015.

(4) Overfill prevention methods that rely on the use of alarms must have the alarms clearly labeled "overfill alarm" and located where the delivery person can clearly see and hear the alarm in order to immediately stop delivery of the product.

(5) Spill and overfill prevention equipment must be periodically

tested or inspected in accordance with § 50135.

(e) Installation. The UST system must be properly installed in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and in accordance with the manufacturer's instructions.

(f) Certification of installation. All owners and operators must ensure that one or more of the following methods of certification, testing, or inspection is used to demonstrate compliance with subsection (e) by providing a certification of compliance on the "Certification of Underground Storage Tank Installation" form prescribed by the Administrator and in accordance with § 501325(d).

(1) The installer has been certified by the tank and piping manufacturers;

(2) The installer has been certified or licensed by the agency;

(3) The installation has been inspected and certified by a licensed professional engineer with education and experience in UST system installation;

(4) The installation has been inspected and approved by the agency;

(5) All work listed in the manufacturer's installation checklists has been completed and the checklists maintained; or

(6) The owner and operator have complied with another method for ensuring compliance with subsection (e) that is determined by the agency to be no less protective of human health and the environment.

(g) Secondary containment.

(1) UST systems installed after April 11, 2016, other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must be provided with secondary containment that meets the requirements of § 50124, except for suction piping that meets the requirements of § 50141(b)(6).

(2) Airport hydrant fuel distribution systems and UST systems with field-constructed tanks must be provided with

secondary containment that meets the requirements of § 50124, except for:

(A) Suction piping that meets the requirements of § 50141(b)(6);

(B) Piping associated with UST systems with field constructed tanks greater than 50,000 gallons; and

(C) Piping associated with airport hydrant systems.

§ 50121. Upgrading of UST Systems.

(a) All UST systems must comply with one of the following requirements:

(1) UST system performance standards in § 50120(b) to (d);

(2) For airport hydrant fuel distribution systems and UST systems with field-constructed tanks installed on or before October 13, 2015:

(A) The system performance standards in § 50120(b) and (c); and

(B) Not later than October 13, 2018, the system performance standards under § 50120(d); or

(3) Closure requirements under Article 7.

§ 50122. [Reserved.]

§ 50123. Tank and Piping Design for Hazardous Substances UST System.

Owners and operators of hazardous substance UST systems must provide secondary containment for tanks and underground piping that meets the requirements of § 50124

§ 50124. Secondary Containment Design.

(a) Secondary containment systems must be designed, constructed, and installed to:

(1) Contain regulated substances leaked from the primary

containment until they are detected and removed;

(2) Prevent the release of regulated substances to the environment at any time during the operational life of the UST system; and

(3) Be checked for evidence of a release at least every thirty (30) calendar days.

(b) Double-walled tanks must be designed, constructed, and installed to:

(1) Contain a leak from any portion of the inner tank within the outer wall; and

(2) Detect the failure of the inner wall.

(c) External liners (including vaults) must be designed, constructed, and installed to:

(1) Contain one hundred (100%) percent of the capacity of the largest tank within its boundary;

(2) Prevent precipitation and groundwater intrusion from interfering with the ability to contain or detect a leak or release of regulated substances; and

(3) Surround the UST completely to effectively prevent lateral and vertical migration of regulated substances.

§ 50125. Under-Dispenser Containment.

(a) Dispenser systems installed on or after April 11, 2016, must have under-dispenser containment that meets the requirements in this subsection. Under-dispenser containment requirement must:

A. Be liquid-tight on its sides, bottom, and at any penetrations;

B. Be compatible with the substance conveyed by the piping;

C. Allow for visual inspection and access to the components in the containment system; and

D. Be monitored for leaks from the dispenser system with a sensing device that signals the operator of the presence of regulated substances.

§ 50126. Performance Standards and Design for UST System - Code of Practice.

(a) The following current codes of practice may be used to comply with § 50120(b)(1):

(1) Underwriters Laboratories Standard 1316, "Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures"; or

(2) Underwriter's Laboratories of Canada S615, "Standard for Reinforced Plastic Underground Tanks for Flammable and Combustible Liquids".

(b) The following current codes of practice may be used to comply with § 50120(b)(2):

(1) Steel Tank Institute "Specification STI–P3® Specification and Manual for External Corrosion Protection of Underground Steel Storage Tanks";

(2) Underwriters Laboratories Standard 1746, "External Corrosion Protection Systems for Steel Underground Storage Tanks";

(3) Underwriters Laboratories of Canada S603, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids", and S603.1, "Standard for External Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids", and S631, "Standard for Isolating Bushings for Steel Underground Tanks Protected with External Corrosion Protection Systems";

(4) Steel Tank Institute Standard F841, "Standard for Dual Wall Underground Steel Storage Tanks"; or

(5) NACE International Standard Practice SP 0285, "External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection", and Underwriters Laboratories Standard 58, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids".

(c) The following current codes of practice may be used to comply with § 50120(b)(3):

(1) Underwriters Laboratories Standard 1746, "External

Corrosion Protection Systems for Steel Underground Storage Tanks";

(2) Steel Tank Institute ACT–100® Specification F894, "Specification for External Corrosion Protection of FRP Composite Steel Underground Storage Tanks";

(3) Steel Tank Institute ACT–100–U® Specification F961, "Specification for External Corrosion Protection of Composite Steel Underground Storage Tanks"; or

(4) Steel Tank Institute Specification F922, "Steel Tank Institute Specification for Permatank®".

(d) The following current codes of practice may be used to comply with § 50120(c)(1):

(1) Underwriters Laboratories Standard 971, "Nonmetallic Underground Piping for Flammable Liquids"; or

(2) Underwriters Laboratories of Canada Standard S660, "Standard for Nonmetallic Underground Piping for Flammable and Combustible Liquids".

(e) The following current codes of practice may be used to comply with § 50120(c)(2):

(1) American Petroleum Institute Recommended Practice 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems";

(2) Underwriters Laboratories Subject 971A, "Outline of Investigation for Metallic Underground Fuel Pipe";

(3) Steel Tank Institute Recommended Practice R892, "Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems";

(4) NACE International Standard Practice SP 0169, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems"; or

(5) NACE International Standard Practice SP 0285, "External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection".

(f) Tank and piping system installation practices and procedures

described in the following current codes of practice may be used to comply with the requirements of § 50120(e):

(1) American Petroleum Institute Publication 1615, "Installation of Underground Petroleum Storage System";

(2) Petroleum Equipment Institute Publication RP100, "Recommended Practices for Installation of Underground Liquid Storage Systems"; or

(3) National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code" and Standard 30A, "Code for Motor Fuel Dispensing Facilities and Repair Garages".

(g) When designing, constructing, and installing airport hydrant systems and UST systems with field-constructed tanks, owners and operators may use military construction criteria, such as Unified Facilities Criteria (UFC) 3–460–01, "Petroleum Fuel Facilities".

§ 50127 to § 50129. [Reserved.]

ARTICLE 3
GENERAL OPERATING REQUIREMENTS

§ 50130. Spill and Overfill Control
§ 50131. Operation and Maintenance of Corrosion Protection
§ 50132. Compatibility
§ 50133. Repairs Allowed
§ 50134. Notification, Reporting, and Recordkeeping
§ 50135. Periodic Testing of Spill Prevention Equipment and Containment Sumps Used for Interstitial Monitoring of Piping and Periodic Inspection of Overfill Prevention Equipment
§ 50136. Periodic Operation and Maintenance Walkthrough Inspections
§ 50137. Periodic Inspection and Maintenance of Under-Dispenser Containment Sensing Devices
§ 50138. General Operating Requirement – Codes of Practice

§ 50139. [Reserved.]

§ 50130. Spill and Overfill Control.

(a) Owners and operators must ensure that releases due to spilling or overfilling do not occur. The owner and operator must ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling.
(b) The owner and operator must report, investigate, and clean up any spills and overfills in accordance with § 50153.

§ 50131. Operation and Maintenance of Corrosion Protection.

All owners and operators of metal UST systems with corrosion protection must comply with the following requirements to ensure that releases due to corrosion are prevented until the UST system is permanently closed or undergoes a change-in-service pursuant to § 50171:

(1) All corrosion protection systems must be operated and maintained to continuously provide corrosion protection to the metal components of that portion of the tank and piping that routinely contain regulated substances and are in contact with the ground.

(2) All UST systems equipped with cathodic protection systems must be inspected for proper operation by a qualified cathodic protection tester in accordance with the following requirements:

(A) Frequency. All cathodic protection systems must be tested within six (6) months of installation and at least every three (3) years thereafter; and

(B) Inspection criteria. The criteria that are used to determine that cathodic protection is adequate as required by this section must be in accordance with a code of practice developed by a nationally recognized association.

(3) UST systems with impressed current cathodic protection systems must also be inspected every sixty (60) calendar days to ensure the equipment is operating properly.

(4) For UST systems using cathodic protection, records of the operation of the cathodic protection must be maintained, in accordance with § 50134, to demonstrate compliance with the performance standards in this section. These records must provide the following:

(A) The results of the last three (3) inspections required in paragraph (3); and

(B) The results of testing from the last two (2) inspections required in paragraph (2).

§ 50132. Compatibility.

(a) Owners and operators must use an UST system made of or lined with materials that are compatible with the substance stored in the UST system.
(b) Owners and operators must notify the agency at least thirty (30) days prior to switching to a regulated substance containing greater than ten (10%) percent ethanol, greater than twenty (20%) percent biodiesel, or any other regulated substance identified by the agency. In addition, owners and operators with UST systems storing these regulated substances must meet one of the following:

(1) Demonstrate compatibility of the UST system (including the tank, piping, containment sumps, pumping equipment, release detection equipment, spill equipment, and overfill equipment). Owners and operators may demonstrate compatibility of the UST system by using one of the following options:

(A) Certification or listing of UST system equipment or components by a nationally recognized, independent testing laboratory for use with the regulated substance stored; or

(B) Equipment or component manufacturer approval. The manufacturer's approval must be in writing,

indicate an affirmative statement of compatibility, specify the range of biofuel blends the equipment or component is compatible with, and be from the equipment or component manufacturer; or

(2) Use another option determined by the agency to be no less protective of human health and the environment than the options listed in paragraph (1).

(c) Owners and operators must maintain records in accordance with § 50134(d) documenting compliance with subsection (b) for as long as the UST system is used to store the regulated substance.

§ 50133. Repairs Allowed.

(a) Owners and operators of UST systems must ensure that repairs will prevent releases due to structural failure or corrosion as long as the UST system is used to store regulated substances. The repairs must meet the following requirements:

(1) Repairs to UST systems must be properly conducted in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory;

(2) Repairs to fiberglass-reinforced plastic tanks may be made by the manufacturer's authorized representatives or in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory;

(3) Metal pipe sections and fittings that have released product as a result of corrosion or other damage must be replaced. Non-corrodible pipes and fittings may be repaired in accordance with the manufacturer's specifications;

(4) Prior to the return to use of a repaired UST system, any repaired USTs must pass a tank tightness test in accordance with § 50143(3);

(5) Prior to the return to use of a repaired UST system, any repaired piping that routinely contains product must pass a line tightness test in accordance with § 50144(2);

(6) Prior to return to use of a repaired UST system, repairs to

secondary containment areas of tanks and piping used for interstitial monitoring, containment sumps used for interstitial monitoring of piping, and containment walls must have the secondary containment tested for integrity using vacuum, pressure, or liquid methods in accordance with requirements developed by the manufacturer, a code of practice developed by a nationally recognized association or independent testing laboratory, or requirements established by the agency;

(7) Within six (6) months following the repair of any cathodically protected UST system, the cathodic protection system must be tested in accordance with § 50131(2) and(3) to ensure that it is operating properly; and

(8) Prior to the return to use of repaired spill or overfill prevention equipment, the repaired spill or overfill prevention equipment must be tested or inspected, as appropriate, in accordance with § 50135 to ensure it is operating properly.

(b) UST system owners and operators must maintain records, in accordance with § 50134, of each repair until the UST system is permanently closed or undergoes a change-in-service pursuant to § 50171.

§ 50134. Notification, Reporting, and Recordkeeping.

(a) Notification. Owners and operators shall notify the agency of any of the following changes in information relating to an UST or tank system by submitting the "Notification for Underground Storage Tanks" form prescribed by the Administrator:

(1) Planned permanent closure or change-in-service, scheduled excavation work for permanent closure or change-in-service, or completed closure or change-in-service;

(2) Temporary closure or the return to currently-in-use status;

(3) Changes in product dispensing method, dispenser, or under dispenser containment;

(4) Changes in financial responsibility mechanism;

(5) Changes in leak detection method;
(6) Changes in spill and overfill prevention method;
(7) Changes in piping;
(8) Changes in type of regulated substances stored;
(9) Changes in corrosion protection mechanism; and
(10) Installation of or changes in secondary containment.

(b) Timing of notification. Owners and operators shall submit the notifications required in subsection (a) within thirty (30) calendar days following any of the changes requiring notification, except that:

(1) Notification of planned permanent closure or change-in-service must be received by the agency at least thirty (30) calendar days before commencement of excavation work for closure or change-in-service;
(2) Notification of scheduled excavation work for permanent closure or change-in-service must be received by the agency at least seven (7) calendar days before the scheduled work date;
(3) Notification of change in type of regulated substance stored to a regulated substance containing greater than ten (10%) percent ethanol or greater than twenty (20%) percent biodiesel must be received by the agency at least thirty (30) calendar days before the change; and
(4) Notification of temporary closure must be received by the agency within thirty (30) calendar days of the UST system having met the definition of temporary closure in § 50112.

(c) Reporting. Owners and operators must submit the following information to the agency:

(1) Reports of all releases including suspected releases § 50150 and § 50152, spills and overfills § 50153, and confirmed releases § 50161;
(2) Release response actions planned or taken, including initial abatement measures § 50162, initial site characterization § 50163, free product removal § 50164, investigation of soil and groundwater cleanup § 50165, and corrective action plan § 50166.

(3) Quarterly release response reports § 50165.2;
(4) Current evidence of financial responsibility as required in § 501110; and
(5) Notice of changes in Designated Class A or B Operators § 501241(c).

(d) Recordkeeping. Owners and operators must maintain the following information:

(1) A corrosion expert's analysis of site corrosion potential if corrosion protection equipment is not used § 50120(b)(4); § 50120(c)(3);
(2) Documentation of operation of corrosion protection equipment § 50131(4);
(3) Documentation of compatibility for UST systems § 50132(c);
(4) Documentation of UST system repairs § 50133(b);
(5) Documentation of compliance for spill and overfill prevention equipment and containment sumps used for interstitial monitoring of piping § 50135(b);
(6) Documentation of periodic walkthrough inspections § 50136(b);
(7) Documentation of compliance with under-dispenser containment sensing device requirements § 50137(b);
(8) Documentation of compliance with release detection requirements § 50145;
(9) Results of the site investigation conducted at permanent closure or change-in-service § 50174;
(10) Documentation of operator training § 501245;
(11) Permits or variances or both, including all documentation, as specified in § 501334(a); and
(12) Evidence of current financial assurance mechanisms used to demonstrate financial responsibility § 501111.

(e) Availability and maintenance of records.

(1) Owners and operators must keep the required records at the UST site or an alternative location approved by the agency.
(2) Owners and operators must make the records immediately available for inspection by the agency at the UST site.

(3) Permanent closure records required under § 50174 may be maintained or submitted to the agency as provided in § 50174.

(f) Owners and operators of UST systems must cooperate fully with inspections, monitoring, and testing conducted by the agency, as well as requests by the agency for document submission, testing, and monitoring by the owner or operator pursuant to 10 GCA, Chapter 76.

§ 50135. Periodic Testing of Spill Prevention Equipment and Containment Sumps Used for Interstitial Monitoring of Piping and Periodic Inspection of Overfill Prevention Equipment.

(a) Owners and operators of UST systems with spill and overfill prevention equipment and containment sumps used for interstitial monitoring of piping must meet these requirements by October 13, 2018 to ensure the equipment is operating properly and will prevent releases to the environment:

(1) Spill prevention equipment (such as a catchment basin, spill bucket, or other spill containment device) must prevent releases to the environment by meeting one of the following:

(A) The equipment is double walled and the integrity of both walls is periodically monitored at a frequency not less than once every thirty (30) calendar days. Owners and operators must begin meeting the requirements of subparagraph (B) and conduct a test within thirty (30) calendar days of discontinuing periodic monitoring of this equipment; or

(B) The spill prevention equipment is tested at least once every three hundred sixty-five (365) calendar days to ensure the equipment is liquid tight by using vacuum, pressure, or liquid testing in accordance with one of the following criteria:

(i) Requirements developed by the manufacturer. (Note: Owners and operators may use this option only if the manufacturer has developed

requirements.);

(ii) Code of practice developed by a nationally recognized association or independent testing laboratory; or

(iii) Requirements determined by the agency to be no less protective of human health and the environment than the requirements listed in clauses (i) and (ii).

(2) Containment sumps used for interstitial monitoring of piping must prevent releases to the environment by meeting one of the following:

(A) The equipment is double walled and the integrity of both walls is periodically monitored at a frequency not less than annually. Owners and operators must begin meeting the requirements of subparagraph (B) and conduct a test within thirty (30) calendar days of discontinuing periodic monitoring of this equipment; or

(B) The containment sumps used for interstitial monitoring of piping are tested at least once every three (3) years to ensure the equipment is liquid tight by using vacuum, pressure, or liquid testing in accordance with one of the criteria in paragraph (1)(B)(i) to (iii).

(3) Overfill prevention equipment must be inspected at least once every three years. At a minimum, the inspection must ensure that overfill prevention equipment is set to activate at the correct level specified in § 50120(d) and will activate when regulated substance reaches that level. Inspections must be conducted in accordance with one of the criteria in paragraph (1)(B)(i) to (iii).

(b) Owners and operators must maintain records as follows (in accordance with § 50134 for spill prevention equipment, containment sumps used for interstitial monitoring of piping, and overfill prevention equipment:

(1) All records of testing or inspection must be maintained for three (3) years; and

(2) For spill prevention equipment not tested every three hundred sixty-five (365) calendar days and containment sumps used for interstitial monitoring of piping not tested every three (3) years, documentation showing that the prevention equipment is double walled and the integrity of both walls is periodically monitored must be maintained for as long as the equipment is periodically monitored.

§ 50136. Periodic Operation and Maintenance Walkthrough Inspections.

(a) To properly operate and maintain UST systems, not later than October 13, 2018, owners and operators must conduct walkthrough inspections that, at a minimum, check the following equipment as specified below:

(1) Every thirty (30) calendar days:

(A) Spill prevention equipment:

(i) Visually check for damage;

(ii) Remove liquid or debris;

(iii) Check for and remove obstructions in the fill pipe;

(iv) Check the fill cap to make sure it is securely on the fill pipe; and

(v) For double walled spill prevention equipment with interstitial monitoring, check for a leak in the interstitial area; and

(B) Release detection equipment:

(i) Check to make sure the release detection equipment is operating with no alarms or other unusual operating conditions present; and

(ii) Ensure records of release detection testing are reviewed and current;

(2) Annually:

(A) Containment sumps:

(i) Visually check for damage, leaks to the containment area, or releases to the

environment;

(ii) Remove liquid (in contained sumps) or debris; and

(iii) For double walled sumps with interstitial monitoring, check for a leak in the interstitial area; and

(B) Hand held release detection equipment: Check devices such as tank gauge sticks or groundwater bailers for operability and serviceability;

(3) For UST systems receiving deliveries at intervals greater than every thirty (30) calendar days, spill prevention equipment may be checked in accordance with paragraph (1)(A) prior to each delivery; and

(4) For airport hydrant systems, at least once every thirty (30) days if confined space entry according to the Occupational Safety and Health Administration is not required or at least annually if confined space entry is required (see 29 C.F.R. Part 1910):

A. Hydrant pits:

(i) Visually check for any damage;

(ii) Remove any liquid or debris; and

(iii) Check for any leaks; and

B. Hydrant piping vaults: Check for any hydrant piping leaks.

(b) Owners and operators must maintain records, in accordance with § 50134, of operation and maintenance walkthrough inspections for three (3) years. Records must include a list of each area checked, whether each area checked was acceptable or needed action taken, a description of actions taken to correct an issue, and delivery records if spill prevention equipment is checked less frequently than every thirty (30) calendar days due to infrequent deliveries.

§ 50137. Periodic Inspection and Maintenance of Under-Dispenser Containment Sensing Devices.

(a) Sensing devices for under-dispenser containment required by § 50125

must:

(1) Be operated and maintained in accordance with one of the following:
  (A) The manufacturer's instructions;
  (B) A code of practice developed by a nationally recognized association or independent testing laboratory; or
  (C) Requirements determined by the agency to be no less protective of human health and the environment than those in subparagraphs (A) and (B).

(2) Be inspected for proper operation, and electronic and mechanical components tested, at least annually.

(b) UST system owners and operators must maintain records in accordance with § 50134 demonstrating compliance with subsection (a). Written documentation of all inspection, testing, and maintenance must be maintained for at least three (3) years. All records that the UDC sensor and connected equipment are designed to produce must be maintained for at least three (3) years after the record is generated.

§ 50138. General Operating Requirements - Codes of Practice.

(a) The following current codes of practice may be used to comply with § 50130(a):

(1) the transfer procedures described in National Fire Protection Association Standard 385;

(2) "Standard for Tank Vehicles for Flammable and Combustible Liquids" or American Petroleum Institute Recommended Practice 1007;

(3) "Loading and Unloading of MC 306/DOT 406 Cargo Tank Motor Vehicles"; or

(4) Further guidance on spill and overfill prevention appears in American Petroleum Institute Recommended Practice 1621, "Bulk Liquid Stock Control at Retail Outlets".

(b) The following current codes of practice may be used to comply with § 50131(2):

(1) NACE International Test Method TM 0101, "Measurement Techniques Related to Criteria for Cathodic Protection of Underground Storage Tank Systems";

(2) NACE International Test Method TM0497, "Measurement Techniques Related to Criteria for Cathodic Protection on Underground or Submerged Metallic Piping Systems";

(3) Steel Tank Institute Recommended Practice R051, "Cathodic Protection Testing Procedures for STI–P3® USTs";

(4) NACE International Standard Practice SP 0285, "External Control of Underground Storage Tank Systems by Cathodic Protection"; or

(5) NACE International Standard Practice SP 0169, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems".

(c) The following current code of practice may be useful in complying with § 50132:

(1) American Petroleum Institute Recommended Practice 1626, "Storing and Handling Ethanol and Gasoline-Ethanol Blends at Distribution Terminals and Filling Stations".

(d) The following current codes of practice may be used to comply with § 50133(a)(1):

(1) National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code";

(2) American Petroleum Institute Recommended Practice RP 2200, "Repairing Crude Oil, Liquified Petroleum Gas, and Product Pipelines";

(3) American Petroleum Institute Recommended Practice RP 1631, "Interior Lining and Periodic Inspection of Underground Storage Tanks";

(4) National Fire Protection Association Standard 326, "Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair";

(5) National Leak Prevention Association Standard 631, Chapter A, "Entry, Cleaning, Interior Inspection, Repair, and Lining of Underground Storage Tanks";

(6) Steel Tank Institute Recommended Practice R972, "Recommended Practice for the Addition of Supplemental Anodes to STI–P3® Tanks";

(7) NACE International Standard Practice SP 0285, "External Control of Underground Storage Tank Systems by Cathodic Protection"; or

(8) Fiberglass Tank and Pipe Institute Recommended Practice T–95–02, "Remanufacturing of Fiberglass Reinforced Plastic (FRP) Underground Storage Tanks".

(e) The following current codes of practice may be used to comply with § 50133(a)(6):

(1) Steel Tank Institute Recommended Practice R012, "Recommended Practice for Interstitial Tightness Testing of Existing Underground Double Wall Steel Tanks";

(2) Fiberglass Tank and Pipe Institute Protocol, "Field Test Protocol for Testing the Annular Space of Installed Underground Fiberglass Double and Triple-Wall Tanks with Dry Annular Space"; or

(3) Petroleum Equipment Institute Recommended Practice RP1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities".

(f) The following current code of practice may be used to comply with § 50135(a)(1),(2),(3) and 50137(a)(1)(B):

(1) Petroleum Equipment Institute Publication RP1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities".

§ 50139. [Reserved.]

ARTICLE 4
RELEASE DETECTION

§ 50140. General Requirements for all UST Systems

§ 50141. Requirements for Petroleum UST Systems
§ 50142. Requirements for Hazardous Substance UST Systems
§ 50143. Methods of Release Detection for Tanks
§ 50144. Methods of Release Detection for Piping
§ 50145. Release Detection Recordkeeping
§ 50146. Release Detection – Code of Practice
§ 50147 to § 50149. [Reserved.]

§ 50140. **General Requirements for all UST Systems.**

(a) Owners and operators of UST systems must provide a method, or combination of methods, of release detection that:

(1) Can detect a release from any portion of the tank and the connected underground piping that routinely contains product;

(2) Utilizes equipment compatible with the regulated substances being stored;

(3) Is installed, calibrated, operated, and maintained in accordance with the manufacturer's instructions;

(4) Is operated and maintained, and electronic and mechanical components are tested for proper operation, in accordance with one of the following: manufacturer's instructions; a code of practice developed by a nationally recognized association or independent testing laboratory; or requirements determined by the agency to be no less protective of human health and the environment than the requirements of paragraphs (a)(1) to (3) of this section. All maintenance and service of the release detection equipment must be conducted by a technician with current certification or training appropriate to the equipment serviced. A test of the proper operation must be performed at least every three hundred sixty-five (365) calendar days, or in a time frame recommended by the equipment manufacturer, whichever is more frequent. Beginning October 13, 2018, as applicable to the facility, the test must cover at a minimum the following

components and criteria:

(A) Automatic tank gauge and other controllers: test alarm; verify system configuration; test battery backup;

(B) Probes and sensors: inspect for residual buildup; ensure floats move freely; ensure shaft is not damaged; ensure cables are free of kinks and breaks; test alarm operability and communication with controller;

(C) Automatic line leak detector: test operation to meet criteria in § 50144(1) by simulating a leak;

(D) Vacuum pumps and pressure gauges: ensure proper communication with sensors and controller; and

(E) Hand-held electronic sampling equipment associated with groundwater and vapor monitoring: ensure proper operation; and

(5) Meets the performance requirements in § 50143 or § 50144, as applicable, with any performance claims and their manner of determination described in writing by the equipment manufacturer or installer. In addition, the methods listed in § 50143 (2), (3), (4), (8), (9), and (10) and § 50144(1), (2), and (4) must be capable of detecting the leak rate or quantity specified for that method in the corresponding section of the rule with a probability of detection of 0.95 and a probability of false alarm of 0.05.

(b) When a release detection method operated in accordance with the performance standards in § 50143 or § 50144 indicates a release may have occurred, owners and operators must notify the agency in accordance with Article 5.

(c) Any UST system that cannot apply a method of release detection that complies with the requirements of this Article must complete the change-in-service or closure procedures in Article 7.

§ 50141. Requirements for Petroleum UST Systems.

(a) Tanks. Owners and operators of petroleum UST systems must provide release detection for tanks as follows:

(1) UST systems other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks:

(A) Tanks installed on or before April 11, 2016, must be monitored for releases at least every thirty (30) calendar days using one of the methods listed in § 50143(4) to (9), except that:

(i) UST systems that meet the performance standards in § 50120, and the monthly inventory control requirements in § 50143(1) or (2), may use tank tightness testing (conducted in accordance with § 50143(3) at least every five (5) years until ten (10) years after the tank was installed; and

(ii) Tanks with capacity of 550 gallons or less and tanks with a capacity of 551 to 1,000 gallons that meet the tank diameter criteria in § 50143(2) may use manual tank gauging (conducted in accordance with § 50143(2).

(B) Tanks installed after April 11, 2016 must be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7).

(2) Airport hydrant fuel distribution systems and UST systems with field-constructed tanks with a capacity less than or equal to 50,000 gallons:

(A) Tanks installed before October 13, 2015 must be monitored for releases at least every thirty (30) calendar days using one of the methods listed in § 50143(4) to (9), except that:

(i) UST systems that meet the performance standards in § 50120 and the monthly inventory control requirements in § 50143(1) or (2), may use tank tightness testing (conducted in accordance with § 50143(3) at least every

five (5) years until ten (10) years after the tank was installed; and

(ii) Tanks with capacity of 550 gallons or less and tanks with a capacity of 551 to 1,000 gallons that meet the tank diameter criteria in § 50143(2) may use manual tank gauging (conducted in accordance with § 50143(2).

(B) Tanks installed on or after October 13, 2015 must be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7).

(3) UST systems with field-constructed tanks with a capacity greater than 50,000 gallons:

(A) Tanks installed before October 13, 2015 must be monitored for releases at least every thirty (30) calendar days using one of the methods listed in § 50143(4), (7), (8), and (9) or use one or a combination of the methods of release detection listed in § 50143(10); and

(B) Tanks installed on or after October 13, 2015 must be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7).

(b) Piping. Underground piping that routinely contains regulated substances must be monitored for releases as follows:

(1) Piping installed on or before April 11, 2016, for UST systems other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must meet one of the following:

(A) Pressurized piping. Underground piping that conveys regulated substances under pressure must:

(i) Be equipped with an automatic line leak detector conducted in accordance with § 50144(1); and

(ii) Have an annual line tightness test conducted in accordance with § 50144(2) or have monthly monitoring conducted in accordance with §

50144(3).

(B) Suction piping. Underground piping that conveys regulated substances under suction must:

(i) Have a line tightness test conducted at least every three (3) years and in accordance with § 50144(2);

(ii) Use a monthly monitoring method conducted in accordance with § 50144(3); or

(iii) Meet the standards in paragraph (6)(A) to (E).

(2) Piping installed or replaced after April 11, 2016, for UST systems other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must meet one of the following:

(A) Pressurized piping. Underground piping that conveys regulated substances under pressure must:

(i) Be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7); and

(ii) Be equipped with an automatic line leak detector in accordance with § 50144(1).

(B) Suction piping. Underground piping that conveys regulated substances under suction must:

(i) Be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7); or

(ii) Meet the standards in paragraph (6)(A) to (E).

(3) Piping installed on or after October 13, 2015, for UST systems other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must meet the technical specifications in paragraph (2)(A) or (B).

(4) Piping for UST systems with field-constructed tanks with a capacity less than or equal to 50,000 gallons and not part of an airport hydrant fuel distribution system:

(A) Piping installed before October 13, 2015 must meet the technical specifications in paragraph (1)(A) or (B).

(B) Piping installed on or after October 13, 2015 must meet the technical specifications in paragraph (2)(A) or (B).

(5) Piping for airport hydrant fuel distribution systems and UST systems with field-constructed tanks with a capacity greater than 50,000 gallons must meet one of the following:

(A) Pressurized piping. Underground piping that conveys regulated substances under pressure must:

(i) Be equipped with an automatic line leak detector conducted in accordance with § 50144(1); and

(ii) Have an annual line tightness test conducted in accordance with § 50144(2) or have monthly monitoring conducted in accordance with any of the methods in § 50143(7) to (9) designed to detect a release from any portion of the underground piping that routinely contains regulated substances; or

(iii) Use one or a combination of the methods of release detection listed in § 50144(4).

(B) Suction piping. Underground piping that conveys regulated substances under suction must:

(i) Have a line tightness test conducted at least every three (3) years and in accordance with § 50144(2);

(ii) Use a monthly monitoring method conducted in accordance with § 50143(7) to (9) designed to detect a release from any portion of the underground piping that routinely contains

regulated substances;

(iii) Use one or a combination of the methods of release detection listed in § 50144(4); or

(iv) Meet the standards in paragraph (6)(A) to (E).

(6) No release detection is required for suction piping that is designed and constructed to meet the following standards:

(A) The below-grade piping operates at less than atmospheric pressure;

(B) The below-grade piping is sloped so that the contents of the pipe will drain back into the storage tank if the suction is released;

(C) Only one check valve is included in each suction line;

(D) The check valve is located directly below and as close as practical to the suction pump; and

(E) A method is provided that allows compliance with subparagraphs (B) to (D) to be readily determined.

§ 50142. Requirements for Hazardous Substance UST Systems.

Owners and operators of hazardous substance UST systems must monitor these systems in accordance with § 50143(7) at least every thirty (30) calendar days. In addition, underground piping that conveys hazardous substances under pressure must be equipped with an automatic line leak detector in accordance with § 50144(1).

§ 50143. Methods of Release Detection for Tanks.

Each method of release detection for tanks used to meet the requirements of § 50140 to § 50142 must be conducted in accordance with the following:

(1) Inventory control. Product inventory control (or another test of equivalent performance) must be conducted monthly to

detect a release of at least one (1%) percent of flow-through plus one hundred thirty (130) gallons on a monthly basis in the following manner:

(A) Inventory volume measurements for regulated substance inputs, withdrawals, and the amount still remaining in the tank are recorded each operating day;

(B) The equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest one-eighth of an inch;

(C) If a manual measuring device is used (e.g., a gauge stick), the measurements must be made through a drop tube that extends to within one foot of the tank bottom. Level measurements shall be to the nearest one-eighth of an inch;

(D) The regulated substance inputs are reconciled with delivery receipts by measurement of the tank inventory volume before and after delivery;

(E) Deliveries are made through a drop tube that extends to within one foot of the tank bottom;

(F) Product dispensing is metered and recorded within the state standards for meter calibration or an accuracy of six cubic inches for every five (5) gallons of product withdrawn, and the meter is calibrated every three hundred sixty-five (365) calendar days; and

(G) The measurement of any water level in the bottom of the tank is made to the nearest one-eighth of an inch at least once a month.

(2) Manual tank gauging. Manual tank gauging must meet the following requirements:

(A) Tank liquid level measurements are taken at the beginning and ending of a period using the appropriate minimum duration of test value in the table below during which no liquid is added

to or removed from the tank;

(B) If a manual measuring device is used (e.g., a gauge stick), the measurements must be made through a drop tube that extends to within one foot of the tank bottom. Level measurements shall be to the nearest one-eighth of an inch;

(C) Level measurements are based on an average of two (2) consecutive stick readings at both the beginning and ending of the period;

(D) The equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest one-eighth of an inch;

(E) A release is suspected and subject to the requirements of Article 5 if the variation between beginning and ending measurements exceeds the weekly or monthly standards in the following table:

Nominal tank capacity	Minimum duration of test	Weekly standard (one test)	Monthly standard (four test average)
550 gallons or less	36 hours	10 gallons	5 gallons
551–1,000 gallons (when tank diameter is 64 inches)	44 hours	9 gallons	4 gallons
551–1,000 gallons (when tank diameter is 48 inches)	58 hours	12 gallons	6 gallons
551–1,000 gallons (also requires periodic tank tightness testing)	36 hours	13 gallons	7 gallons
1,001–2,000 gallons (also requires periodic tank tightness testing)	36 hours	26 gallons	13 gallons

(F) Tanks of five hundred fifty (550) gallons or less nominal capacity and tanks with a nominal capacity of five hundred fifty-one (551) to one thousand (1,000) gallons that meet the tank diameter criteria in the table in subparagraph (E) may use manual tank gauging as the sole method of release detection. All other tanks with a nominal capacity of five hundred fifty-one (551) to two thousand (2,000) gallons may

use manual tank gauging in place of inventory control in paragraph (1), combined with tank tightness testing as indicated in the table. Tanks of greater than two thousand (2,000) gallons nominal capacity may not use this method to meet the requirements of this Article.

(3) Tank tightness testing. Tank tightness testing (or another test of equivalent performance) must be capable of detecting a 0.1 gallon per hour leak rate from any portion of the tank that routinely contains product while accounting for the effects of thermal expansion or contraction of the product, vapor pockets, tank deformation, evaporation or condensation, and the location of the water table.

(4) Automatic tank gauging. Equipment for automatic tank gauging that test for the loss of product and conducts inventory control must meet the following requirements:

(A) The automatic product level monitor test can detect a 0.2 gallon per hour leak rate from any portion of the tank that routinely contains product;

(B) The automatic tank gauging equipment must meet the inventory control (or other test of equivalent performance) requirements of paragraph (1); and

(C) The test must be performed with the system operating in one of the following modes:

(i) In-tank static testing conducted at least once every thirty (30) calendar days; or

(ii) Continuous in-tank leak detection operating on an uninterrupted basis or operating within a process that allows

the system to gather incremental measurements to determine the leak status of the tank at least once every thirty (30) calendar days.

(5) Vapor monitoring. Testing or monitoring for vapors within the soil gas of the excavation zone must meet the following requirements:

(A) The materials used as backfill are sufficiently porous (e.g., gravel, sand, crushed rock) to readily allow diffusion of vapors from releases into the excavation area;

(B) The stored regulated substance, or a tracer compound placed in the tank system, is sufficiently volatile (e.g., gasoline) to result in a vapor level that is detectable by the monitoring devices located in the excavation zone in the event of a release from the tank;

(C) The measurement of vapors by the monitoring device is not rendered inoperative by the groundwater, rainfall, or soil moisture or other known interferences so that a release could go undetected for more than thirty (30) calendar days;

(D) The level of background contamination in the excavation zone will not interfere with the method used to detect releases from the tank;

(E) The vapor monitors are designed and operated to detect any significant increase in concentration above background of the regulated substance stored in the tank system, a component or components of that substance, or a tracer compound placed in the tank system;

(F) In the UST excavation zone, the site is assessed to ensure compliance with the requirements in subparagraphs (A) to (D) and to establish the number and positioning of monitoring wells that will detect

releases within the excavation zone from any portion of the tank that routinely contains product; and

(G) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(6) Groundwater monitoring. Testing or monitoring for liquids on the groundwater must meet the following requirements:

(A) The regulated substance stored is immiscible in water and has a specific gravity of less than one;

(B) Groundwater is never more than twenty (20) feet from the ground surface and the hydraulic conductivity of the soils between the UST system and the monitoring wells or devices is not less than 0.01 cm/sec (e.g., the soil should consist of gravels, coarse to medium sands, coarse silts or other permeable materials);

(C) The slotted portion of the monitoring well casing must be designed to prevent migration of natural soils or filter pack into the well and to allow entry of regulated substance on the water table into the well under both high and low groundwater conditions;

(D) Monitoring wells shall be sealed from the ground surface to the top of the filter pack;

(E) Monitoring wells or devices intercept the excavation zone or are as close to it as is technically feasible;

(F) The continuous monitoring devices or manual methods used can detect the presence of at least one-eighth of an inch of free product on top of the groundwater in the monitoring wells;

(G) Within and immediately below the UST system excavation zone, the site is assessed to ensure compliance with the requirements in

subparagraphs (A) to (E) and to establish the number and positioning of monitoring wells or devices that will detect releases from any portion of the tank that routinely contains product; and

(H) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(7) Interstitial monitoring. Interstitial monitoring between the UST system and a secondary barrier immediately around or beneath it may be used, but only if the system is designed, constructed, and installed to detect a leak from any portion of the tank that routinely contains product and also meets one of the following requirements:

(A) For double walled UST systems, the sampling or testing method can detect a leak through the inner wall in any portion of the tank that routinely contains product;

(B) For UST systems with a secondary barrier within the excavation zone, the sampling or testing method used can detect a leak between the UST system and the secondary barrier;

(i) The secondary barrier around or beneath the UST system consists of artificially constructed material that is sufficiently thick and impermeable (at least 10^{-6} cm/sec for the regulated substance stored) to direct a leak to the monitoring point and permit its detection;

(ii) The barrier is compatible with the regulated substance stored so that a leak from the UST system will not cause a deterioration of the barrier allowing a

release to pass through undetected;

(iii) For cathodically protected tanks, the secondary barrier must be installed so that it does not interfere with the proper operation of the cathodic protection system;

(iv) The groundwater, soil moisture, or rainfall will not render the testing or sampling method used inoperative so that a release could go undetected for more than thirty (30) calendar days;

(v) The site is assessed to ensure that the secondary barrier is always above the groundwater and not in a twenty-five-year flood plain, unless the barrier and monitoring designs are for use under such conditions; and,

(vi) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(C) For tanks with an internally fitted liner, an automated device can detect a leak between the inner wall of the tank and the liner, and the liner is compatible with the substance stored.

(8) Statistical inventory reconciliation. Release detection methods based on the application of statistical principles to inventory data similar to those described in paragraph (1) must meet the following requirements:

(A) Report a quantitative result with a calculated leak rate;

(B) Be capable of detecting a leak rate of 0.2 gallon per hour or a release of one hundred fifty (150) gallons within thirty (30) calendar days; and

(C) Use a threshold that does not exceed one-half the minimum detectible leak rate.

(9) Other methods. Any other type of release detection method, or combination of methods, can be used if:

(A) It can detect a 0.2 gallon per hour leak rate or a release of one hundred fifty (150) gallons within a month with a probability of detection of 0.95 and a probability of false alarm of 0.05; or

(B) The owner and operator can demonstrate to the agency that the method can detect a release as effectively as any of the methods allowed in paragraphs (3) to (8), and the agency approves the method. In comparing methods, the agency shall consider the size of release that the method can detect and the frequency and reliability with which it can be detected. If the method is approved, the owner and operator must comply with any conditions imposed by the agency on its use to ensure the protection of human health and the environment.

(10) Methods of release detection for field-constructed tanks. One or a combination of the following methods of release detection for tanks may be used when allowed by § 50141.

(A) Conduct an annual tank tightness test that can detect a 0.5 gallon per hour leak rate;

(B) Use an automatic tank gauging system to perform release detection at least every thirty (30) calendar days that can detect a leak rate less than or equal to one (1) gallon per hour. This method must be combined with a tank tightness test that can detect a 0.2 gallon per hour leak rate performed at least every three (3) years;

(C) Use an automatic tank gauging system to perform release detection at least every thirty (30) calendar days that can detect a leak rate less than or equal to two (2) gallons per hour. This method must be combined with a tank tightness test that can detect a 0.2 gallon per hour leak rate performed at least every

two (2) years;

(D) Perform vapor monitoring (conducted in accordance with paragraph (5) for a tracer compound placed in the tank system) capable of detecting a 0.1 gallon per hour leak rate at least every two (2) years;

(E) Perform inventory control (conducted in accordance with Department of Defense Directive 4140.25, ATA Airport Fuel Facility Operations and Maintenance Guidance Manual, or equivalent procedures) at least every thirty (30) calendar days that can detect a leak equal to or less than 0.5 percent of flow-through; and

(i) Perform a tank tightness test that can detect a 0.5 gallon per hour leak rate at least every two (2) years; or

(ii) Perform vapor monitoring or groundwater monitoring (conducted in accordance with paragraph (5) or (6), respectively, for the stored regulated substance) at least every thirty (30) calendar days; or

(F) Another method approved by the agency if the owner and operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in subparagraphs (A) to (E). In comparing methods, the agency shall consider the size of release that the method can detect and the frequency and reliability of detection.

§ 50144. Methods of Release Detection for Piping.

Each method of release detection for piping used to meet the requirements of § 50140 to § 50142 must be conducted in accordance with the following:

(1) Automatic line leak detectors. Methods which alert the operator to the presence of a leak by restricting or shutting off the flow of regulated substances through piping may be used only if they detect leaks of three (3) gallons per hour at

ten (10) pounds per square inch line pressure within one hour. An annual test of the operation of the leak detector must be conducted in accordance with § 50140(a)(4).

(2) Line tightness testing. A periodic test of piping may be conducted only if it can detect a 0.1 gallon per hour leak rate at one and one-half times the operating pressure.

(3) Applicable tank methods. Any of the methods in § 50143(5) to (9) may be used if they are designed to detect a release from any portion of the underground piping that routinely contains regulated substances.

(4) Methods of release detection for piping associated with airport hydrant systems and field-constructed tanks. One or a combination of the following methods of release detection for piping may be used when allowed by § 50141.

(A) (i) Perform a semiannual or annual line tightness test at or above the piping operating pressure in accordance with the table below.

MAXIMUM LEAK DETECTION RATE PER TEST SECTION VOLUME

Test section volume (gallons)	Semiannual test—leak detection rate not to exceed (gallons per hour)	Annual test—leak detection rate not to exceed (gallons per hour)
<50,000	1.0	0.5
□50,000 to <75,000	1.5	0.75
□75,000 to <100,000	2.0	1.0
□100,000	3.0	1.5

(ii) Piping segment volumes ≥100,000 gallons not capable of meeting the maximum 3.0 gallon per hour leak rate for the semiannual test may be tested at a leak rate up to 6.0 gallons per hour according to the following schedule:

PHASE IN FOR PIPING SEGMENTS ≥100,000 GALLONS IN VOLUME

First test	Not later than three years after the effective date of these rules (may use up to 6.0 gph leak rate).
Second test	Between three and six years after the effective date of these rules (may use up to 6.0 gph leak rate).
Third test	Between six and seven years after the effective date of these rules (must use 3.0 gph for leak rate).
Subsequent tests..	Not later than seven years after the effective date of these rules, begin using semiannual or annual line testing according to the Maximum Leak Detection Rate Per Test Section Volume table above.

(B) Perform vapor monitoring (conducted in accordance with § 50143(5) for a tracer compound placed in the tank system) capable of detecting a 0.1 gallon per hour leak rate at least every two (2) years;

(C) Perform inventory control (conducted in accordance with Department of Defense Directive 4140.25, ATA Airport Fuel Facility Operations and Maintenance Guidance Manual, or equivalent procedures) at least every thirty (30) calendar days that can detect a leak equal to or less than 0.5 percent of flow-through; and

(i) Perform a line tightness test (conducted in accordance with subparagraph (A) using the leak rates for the semiannual test) at least every two (2) years; or

(ii) Perform vapor monitoring or groundwater monitoring (conducted in accordance with § 50143(5) or (6), respectively, for the stored regulated substance) at least every thirty (30) calendar days; or

(D) Another method approved by the agency if the owner and operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in subparagraphs (A) to (C). In comparing

methods, the agency shall consider the size of release that the method can detect and the frequency and reliability of detection.

§ 50145. Release Detection Recordkeeping.

All UST system owners and operators must maintain records in accordance with § 50134 demonstrating compliance with all applicable requirements of this subchapter. These records must include the following:

(1) All written performance claims pertaining to any release detection system used, and the manner in which these claims have been justified or tested by the equipment manufacturer or installer, must be maintained for the operating life of the UST system. Records of site assessments required under § 50143(5)(F) and (6)(G) must be maintained for as long as the methods are used. Records of site assessments developed after October 13, 2015, must be signed by a professional engineer or professional geologist, or equivalent licensed professional with experience in environmental engineering, hydrogeology, or other relevant technical discipline acceptable to the agency;

(2) The results of any sampling, testing, or monitoring must be maintained for at least three (3) years, except as follows:

(A) The results of annual operation tests conducted in accordance with § 50140(a)(4) must be maintained for three (3) years. At a minimum, the results must list each component tested, indicate whether each component tested meets criteria in § 50140(a)(4) or needs to have action taken, and describe any action taken to correct an issue;

(B) The results of tank tightness testing conducted in accordance with § 50143(3) must be retained until the next test is conducted; and

(C) The results of tank tightness testing, line tightness

testing, and vapor monitoring using a tracer compound placed in the tank system conducted in accordance with § 50143(10) or § 50144(4) must be retained until the next test is conducted;

(3) All records that the equipment being utilized to monitor or maintain the UST system is designed to produce must be maintained for at least three (3) years after the record is generated; and

(4) Written documentation of all calibration, maintenance, and repair of release detection equipment permanently located on-site must be maintained for at least three (3) years. Any schedules of required calibration and maintenance provided by the release detection equipment manufacturer must be retained for five (5) years from the date of installation.

§ 50146. Release Detection - Code of Practice.

The following current code of practice may be used to comply with § 50140(a)(4):

(1) Petroleum Equipment Institute Publication RP1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities"; and

(2) Practices described in the American Petroleum Institute Recommended Practice RP 1621, "Bulk Liquid Stock Control at Retail Outlets" may be used, where applicable, as guidance in meeting the requirements of § 50143(1).

§ 50147 to § 50149. [Reserved;]

ARTICLE 5
RELEASE REPORTING, INVESTIGATION, AND CONFIRMATION

§ 50150. Reporting of Suspected Release

§ 50151. Investigation of Off-site Impacts
§ 50152. Release Investigation and Confirmation Steps
§ 50153. Reporting and Cleanup of Spills and Overfill
§ 50154 to § 50159. [Reserved.]

§ 50150. Reporting of Suspected Release.

Owners and operators of UST systems must notify the agency within twenty-four (24) hours and follow the procedures in § 50152 for any of the following conditions:

(1) The discovery by any person of evidence of released regulated substances at the UST site or in the surrounding area (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface water).

(2) Unusual UST or tank system operating conditions observed or experienced by owners and operators (such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST system, an unexplained presence of water in the tank, or liquid in the interstitial space of secondarily contained systems), unless:

(A) The system equipment or component is found not to be releasing regulated substances to the environment;

(B) Any defective system equipment or component is immediately repaired or replaced; and

(C) For secondarily contained systems, except as provided for in § 50143(7)(B)(iv), any liquid in the interstitial space not used as part of the interstitial monitoring method (for example, brine filled) is immediately removed.

(3) Monitoring results, including investigation of an alarm, from a release detection method required under § 50141 and § 50142 that indicate a release may have occurred unless:

(A) The monitoring device is found to be defective, and is

immediately repaired, recalibrated or replaced, and additional monitoring does not confirm the initial result;

(B) The leak is contained in the secondary containment and:

(i) Except as provided for in § 50143(7)(B)(iv), any liquid in the interstitial space not used as part of the interstitial monitoring method (for example, brine filled) is immediately removed; and

(ii) Any defective system equipment or component is immediately repaired or replaced;

(C) In the case of inventory control described in § 50143(1), a second month of data does not confirm the initial result or the investigation determines no release has occurred; or

(D) The alarm was investigated and determined to be a non-release event (for example, from a power surge or caused by filling the tank during release detection testing).

§ 50151. Investigation of Off-site Impacts.

When required by the agency, owners and operators of UST systems must follow the procedures in § 50152 to determine if the UST system is the source of off-site impacts. These impacts include the discovery of regulated substances (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface and drinking waters) that has been observed by the agency or brought to the agency's attention by any person.

§ 50152. Release Investigation and Confirmation Steps.

(a) Unless release response action is initiated in accordance with Article 6, owners and operators must immediately investigate and

confirm all suspected releases of regulated substances requiring reporting under § 50150 within seven (7) calendar days following the discovery of the suspected release, unless a written request for extension of time is granted by the Administrator.

(b) Investigations and confirmations required in subsection (a) must use the following steps or another procedure approved by the agency:

(1) System test. Owners and operators must conduct tests (according to the requirements for tightness testing in § 50143(3) and § 50144(2) or, as appropriate, secondary containment testing described in § 50133(a)(6).

(A) The test must determine whether:

(i) A leak exists in that portion of the tank that routinely contains product, or the attached delivery piping; or

(ii) A breach of either wall of the secondary containment has occurred.

(B) If the system test confirms a leak into the interstice or a release, owners and operators must repair, replace, or close the UST system. In addition, owners and operators must begin release response action in accordance with Article 6 if the test results for the system, tank, or delivery piping indicate that a release exists.

(C) Further investigation is not required if the test results for the system, tank, and delivery piping do not indicate that a release exists and if environmental contamination is not the basis for suspecting a release.

(D) Owners and operators must conduct a site assessment as described in paragraph (2) if the test results for the system, tank, and delivery piping do not indicate that a release exists but environmental contamination is the basis for suspecting a release.

(2) Site assessment. Owners and operators must measure for

the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the nature of the stored substance, the type of initial alarm or cause for suspicion, the type of backfill and surrounding soil, the depth and flow of groundwater, and other factors as appropriate for identifying the presence and source of the release.

(A) If the test results for the excavation zone or the UST site indicate that a release has occurred, owners and operators must begin release response action in accordance with Article 6;

(B) If the test results for the excavation zone or the UST site do not indicate that a release has occurred, further investigation is not required.

(c) If it is determined that a release has not occurred, owners and operators must report the results of the investigation in writing to the agency within thirty (30) calendar days following discovery of the suspected release. The report shall include, but not be limited to, results of the tests required by subsection (b) as well as performance claims pursuant to § 50140(a)(5).

§ 50153. Reporting and Cleanup of Spills and Overfill.

(a) Owners and operators of UST systems must contain and immediately clean up all spills and overfills in a manner which is protective of human health and the environment as set forth in § 50165.3.

(b) Owners and operators must notify the agency within twenty-four (24) hours and begin release response action in accordance with Article 6 in the following cases:

(1) Spill or overfill of petroleum that results in a release to the environment that exceeds twenty-five (25) gallons or that causes a sheen on nearby surface waters; and

(2) Spill or overfill of hazardous substances that result in a release to the environment that equals or exceeds its reportable quantity under CERCLA (40 CFR part 302).

(c) Owners and operators of UST systems must contain and immediately clean up a spill or overfill of petroleum that is less than twenty-five (25) gallons or a spill or overfill of a hazardous substance that is less than the reportable quantity. If cleanup cannot be accomplished within twenty-four (24) hours, then the owners and operators must immediately notify the agency of the incident and continue cleaning up the spill or overfill. Owners and operators must also complete and submit to the agency a written report of the actions taken in response to the spill or overfill within twenty (20) calendar days.

(d) An owner or operator must submit the appropriate forms listed in § 501111(b) documenting current evidence of financial responsibility to the Administrator within thirty (30) days after identifying a release from an underground storage tank or tank system required to be reported under this section.

§ 50154 to § 50159. [Reserved.]

ARTICLE 6
RELEASE RESPONSE ACTION

§ 50160. General
§ 50161. Immediate Response Action
§ 50161.1. Posting of Signs
§ 50162. Initial Abatement Measures and Site Assessment
§ 50163. Initial Site Characterization
§ 50164. Free Product Removal
§ 50165. Investigation for Soil and Groundwater Cleanup
§ 50165.1. Notification of Confirmed Release
§ 50165.2. Release Response Reporting
§ 50165.3. Site Cleanup Criteria
§ 50166. Corrective Action

§ 50167. Public Participation for Corrective Action Plans
§ 50168 to § 50169. [Reserved.]

§ 50160. General.

Owners and operators of petroleum or hazardous substance UST systems must, in response to a confirmed release from the UST system, comply with the requirements of this Article, except for USTs excluded under § 50110(b) and UST systems subject to RCRA Subtitle C corrective action requirements under section 3004(u) of the Resource Conservation and Recovery Act, as amended.

§ 50161. Immediate Response Action.

(a) Upon confirmation of a release in accordance with § 50152 or after a release from the UST system is identified in any other manner, owners and operators must perform the following response actions within twenty-four (24) hours:

(1) Report the release to the agency by telephone;
(2) Take necessary actions to prevent any further release of the regulated substance into the environment, including removal of as much of the regulated substance from the UST or tank system as possible;
(3) Identify and mitigate any safety hazards (such as fire, explosion, and vapor hazards) posed by the release of the regulated substance; and
(4) Take necessary action to minimize the spread of contamination.

(b) Within seven (7) days of confirmation, owners and operators must submit to the agency a written notice of confirmation. The notice shall include, but not be limited to, the following information: source of the release, method of discovery and confirmation, estimated quantity of substance released, type of substance released, immediate hazards, release impact, migration pathways, and actions taken.
(c) An owner or operator must submit the appropriate forms listed in §

501111(b) documenting current evidence of financial responsibility to the Administrator within thirty (30) calendar days after identifying a release from an underground storage tank or tank system required to be reported under this section.

§ 50161.1. Posting of Signs.

(a) If the agency determines that posting of signs is appropriate, owners and operators shall post signs around the perimeter of the site informing passersby of the potential hazards. In this instance, "site" means an area where contamination poses an immediate health risk or an area where contaminated media is exposed to the surface.
(b) Signs shall be placed at each entrance to the site and at other locations in sufficient numbers to be seen from any approach to the site.
(c) Signs shall be legible and readable from a distance of at least twenty-five (25) feet. The sign legend shall read, "Caution Petroleum/Hazardous Substance Contamination - Unauthorized Personnel Keep Out". Other sign legends may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the site and that entry onto the site may be dangerous. A contact person and telephone number shall be listed on the sign.
(d) The sign may be removed upon determination by the agency that no further release response action is necessary or that posting of signs is no longer appropriate.

§ 50162. Initial Abatement Measures and Site Assessment.

(a) Unless directed to do otherwise by the agency, owners and operators must perform the following abatement measures:

(1) Continue to remove as much of the regulated substance from the UST system as is necessary to prevent further release to the environment;

(2) Visually inspect the area around the UST or tank system for evidence of any aboveground releases or exposed belowground releases and continue to take necessary

actions to minimize the spread of contamination and to prevent further migration of the released substance into surrounding soils, air, surface water, and groundwater;

(3) Continue to monitor and mitigate any additional fire and safety hazards posed by vapors or free product that have migrated from the UST excavation zone and entered into subsurface structures (such as sewers or basements);

(4) Remedy hazards (such as dust and vapors and the potential for leachate generation) posed by contaminated soils and debris that are excavated or exposed as a result of release confirmation, site investigation, abatement, or release response action activities;

(5) Conduct an assessment of the release by measuring for the presence of a release where contamination is most likely to be present at the UST site, unless the presence and source of the release have been confirmed in accordance with the site assessment required by § 50152(b) or the site assessment required for change-in-service or permanent closure in § 50172(a). In selecting sample types, sample locations, and measurement methods, the owner and operator must consider the nature of the stored substance, the type of backfill and surrounding soil, depth and flow of groundwater and other factors as appropriate for identifying the presence and source of the release;

(6) Investigate to determine the possible presence of free product, and begin free product removal in accordance with § 50164;

(7) Remove or remediate contaminated soil at the site to the extent necessary to prevent the spread of free product; and

(8) If any of the remedies in this section include treatment or disposal of contaminated soils, owners or operators must comply with all applicable local, state, and federal requirements.

(b) Within twenty (20) calendar days after release confirmation, or within another reasonable period of time determined by the agency, owners and

operators must submit a report to the agency summarizing the initial abatement steps taken under subsection (a) and any resulting information or data.

§ 50163. Initial Site Characterization.

(a) Owners and operators must assemble information about the site and the nature of the release, including information gained while confirming the release or completing the initial abatement measures in § 50160 and § 50161. This information must include, but is not necessarily limited to the following:

(1) Data on the nature and estimated quantity of release;

(2) Data from available sources and all previous site investigations concerning the following factors: surrounding populations, water quality, use and approximate locations of wells potentially affected by the release, subsurface soil conditions, locations of subsurface sewers, climatological conditions, and land use;

(3) Results of the site assessment required under § 50162(a)(5); and

(4) Results of the free product investigations required under § 50162(a)(6), to be used by owners and operators to determine whether free product must be recovered under § 50164.

(b) Within forty-five (45) calendar days of release confirmation, or another reasonable period of time determined by the agency, owners and operators must submit the information collected in compliance with subsection (a) to the agency in a manner that demonstrates its applicability and technical adequacy.

§ 50164. Free Product Removal.

(a) At sites where investigations under § 50162(a)(6) indicate the presence of free product, owners and operators must remove free product to the maximum extent practicable as determined by the agency while continuing, as necessary, any actions initiated under §§ 50161 to 50163, or

preparing for actions required under §§ 50165 to 50166. In meeting the requirements of this section, owners and operators must:

(1) Conduct free product removal in a manner that minimizes the spread of contamination into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site, and that properly treats, discharges or disposes of recovery byproducts in compliance with applicable local, state, and federal regulations;

(2) Use abatement of free product migration as a minimum objective for the design of the free product removal system;

(3) Handle any flammable products in a safe and competent manner to prevent fires or explosions; and

(4) Prepare and submit to the agency, within forty-five (45) calendar days after confirming a release, a free product removal report that provides at least the following information:

(A) The name of the person responsible for implementing the free product removal measures;

(B) The estimated quantity, type, and thickness of free product observed or measured in wells, boreholes, and excavations;

(C) The type of free product recovery system used;

(D) Whether any discharge will take place on-site or off-site during the recovery operation and where this discharge will be located;

(E) The type of treatment applied to, and the effluent quality expected from, any discharge;

(F) All actions already performed or currently underway to remove free product, including steps that have been or are being taken to obtain necessary permits for any discharge;

(G) The disposition of the recovered free product; and
(H) Schedule for completion of free product removal.

(b) Owners and operators shall initiate free product removal as soon as practicable but no later than thirty (30) calendar days following confirmation of a release, or sooner if directed by the agency.

§ 50165. Investigation for Soil and Groundwater Cleanup.

(a) In order to determine the full extent and location of soils contaminated by the release and the presence and concentrations of dissolved product contamination in the groundwater and surface water, owners and operators must conduct investigations of the release, the release site, and the surrounding area possibly affected by the release if any of the following conditions exist:

(1) There is evidence that groundwater wells have been affected by the release (e.g., as found during release confirmation or previous release response actions);
(2) Free product is found to need recovery in compliance with § 50164;
(3) There is evidence that contaminated soils may be in contact with groundwater (e.g., as found during conduct of the initial response measures or investigations required under §§ 50160 to 50164; and
(4) The agency requests an investigation, based on the potential effects of contaminated soil or groundwater on nearby surface water and groundwater resources.

(b) Owners and operators must include information collected in accordance with this section with each quarterly report required pursuant to § 50165.2.

§ 50165.1. Notification of Confirmed Release.

(a) Within ninety (90) calendar days following confirmation of a release, the owner and operator shall notify those members of the public directly affected by the release in writing of the release and the proposed response to the release, including a historical account of actions performed since the discovery of the release. Members of the public directly affected by the release shall include:

(1) Persons who own, hold a lease for, or have easements at, any property on which the regulated substance released from the UST was discovered; and

(2) Other persons identified by the director.

(b) The owner and operator shall send a letter to all members of the public directly affected by the release. Model language for the letter shall be provided by the agency and shall include at least the following information:

(1) Name and address of the UST or UST system;

(2) Statement that a release of regulated substance has been confirmed at the UST or UST system;

(3) Name of a contact person at the agency; and

(4) Reference to an attached factsheet pursuant to subsection (c).

(c) The letter to the members of the public directly affected by the release shall include a factsheet which contains the following information:

(1) Name and address of the UST or UST system;

(2) Name and address of the owner and operator of the UST or UST system;

(3) Name, address, and telephone contact of the party performing the cleanup activities;

(4) Date of the confirmed release;

(5) Nature and extent of the confirmed release;

(6) Summary of measures taken to assess the release and extent of contamination; and

(7) Summary of the proposed response to the release.

(d) The factsheet shall be updated on a quarterly basis and sent to all members of the public directly affected by the release. If additional members of the public directly affected by the release are identified in the

course of release response actions, then the owner and operator shall provide those persons with all previous and future letters and factsheets.
(e) The owner and operator shall include in the quarterly report required pursuant to § 50165.2 the following information:

(1) Copy of the letter pursuant to subsection (b);
(2) List of the members of the public directly affected by the release and to whom the letter was sent; and
(3) Copies of the factsheet and amended factsheets pursuant to subsections (c) and (d).

§ 50165.2. Release Response Reporting.

(a) No later than ninety (90) calendar days following the confirmation of a release, owners and operators must submit to the agency a written report in the format specified by the agency. The report must include:

(1) All release response actions taken pursuant to this Article during the first ninety-day (90) period (first quarter); and
(2) A plan for future release response actions to be taken.

(b) Beginning one hundred eighty (180) calendar days following confirmation of a release, owners and operators must submit to the agency written quarterly progress reports and an electronic copy of the written report in a format specified by the agency. The reports must document:

(1) All response actions taken pursuant to this subchapter after the last reported date;
(2) A plan for future release response actions to be taken; and
(3) Information required pursuant to § 50165.1.

(c) Quarterly progress reports are not required if:

(1) Response actions have met the requirements of § 50165.3; and
(2) A final quarterly report has been submitted.

§ 50165.3. Site Cleanup Criteria.

(a) Owners and operators must remediate soil, surface water, and groundwater, and materials contaminated by releases from USTs or tank systems in a manner that is protective of human health and the environment and achieves cleanup as described in subsection (b).
(b) Owners and operators must remediate contaminated soil, groundwater, and surface water at the site to residual concentrations that meet one of the following criteria:

(1) Default Tier 1 Screening Levels as presented in Table 1 in subsection (e); or

(2) Site-specific action levels as approved by the agency.

Owners and operators should consult with the agency on how the standards in this paragraph can be met. Site-specific action levels must take into account the following factors:

(A) For systemic toxicants, acceptable levels shall represent concentration levels to which the human population may be exposed without adverse effect during a lifetime or part of a lifetime, and incorporating an adequate margin of safety;

(B) For known or suspected carcinogens, acceptable levels are generally concentration levels in soil, groundwater and vapor that represent an excess upper bound lifetime cancer risk to an individual of between 10^{-4} and 10^{-6} using information on the relationship between dose and response. The 10^{-6} excess risk level shall be used as the point of departure for determining acceptable levels for alternatives when chemical-specific state or federal requirements are not available or are not sufficiently protective because of the presence of multiple contaminants at the site or multiple pathways of exposure;

(C) Impacts to ecological receptors, including but not limited to plants and animals; and

(D) Other applicable requirements, including but not

limited to nuisance concerns for odor and taste, if applicable.

(c) The agency may require the owners and operators to modify cleanup activities being performed at a site if the agency determines that the activities are not being carried out in accordance with this subchapter, or are not achieving cleanup levels that are protective of human health and the environment. The agency may impose modifications to cleanup activities by written notice to the owners and operators, and the owners and operators must implement necessary changes to the cleanup activities in response to the agency's notice by a time schedule established by the agency.

(d) A schedule for estimated completion of site cleanup shall be included in each fourth quarter report required pursuant to § 50165.2(b).

(e) The figure labeled "Table 1. Tier 1 Screening Levels of Soil and Groundwater" is made a part of this subsection.

Table 1. Tier 1 Screening Levels for Soil and Groundwater

Contaminant	DRINKING WATER SOURCE THREATENED				DRINKING WATER SOURCE NOT THREATENED			
	Groundwater (ug/l)	Basis[1]	Soil (mg/kg)	Basis[2]	Groundwater (ug/l)	Basis[3]	Soil (mg/kg)	Basis[2]
Acenaphthene	15	-	120	L/VI	15	-	40	L/VI
Benzene	5.0	DWP	0.30	L	71	CAT	0.77	VI
Benzo(a)pyrene	0.05	-	3.6	DE	0.05	-	3.6	DE
Dichloroethylene, cis 1,2-	70	DWP	0.36	VI	620	CAT	0.36	VI
Dichloroethylene, trans 1,2-	100	DWP	3.6	VI	560	CAT	3.6	VI
Ethylbenzene	7.3	CAT	0.90	L	7.3	CAT	0.90	L
Fluoranthene	0.05	-	87	L	0.05	-	87	L
Lead	2.5	CAT	200	DE	2.5	CAT	200	DE
Methyl Tert Butyl Ether (MTBE)	5.0	DWS	0.028	L	730	CAT	2.3	VI
Naphthalene	12	CAT	3.1	L	12	CAT	3.1	L
Polychlorinated Biphenyls (PCBs)	0.014	-	1.2	DE	0;014	-	1.2	DE
Tetrachloethylene (PCE)	5.0	DWP	0.098	VI	53	CAT	0.098	VI
Toluene	9.8	CAT	0.78	L	9.8	CAT	0.78	L
TPH-gasolines	300	DWP	100	GC	500	CAT	100	GC
TPH-middle distillates	400	DWP	220	DE	640	CAT	220	DE
TPH-residual fuels	500	DWS	500	GC	640	CAT	500	GC
Trichloroethylene	5.0	DWP	0.089	VI	47	CAT	0.089	VI
Vinyl Chloride	2.0	DWP	0.036	VI	18	VI	0.036	VI
Xylenes	13	CAT	1.4	L	13	CAT	1.4	L

Notes to Table 1.

1. Drinking water screening levels are the lowest of screening levels for: drinking water primary maximum contaminant levels based on toxicity ("DWP"), drinking water secondary maximum contaminant levels based on taste and odor concerns ("DWS"), vapor intrusion ("VI"), and chronic aquatic toxicity ("CAT").

2. Soil screening levels are the lowest of screening levels for: direct exposure ("DE"), vapor intrusion ("VI"), leaching ("L"), and gross contamination ("GC").

3. Non-drinking water screening levels are the lowest of screening levels vapor intrusion ("VI"), chronic aquatic toxicity ("CAT"), and gross contamination ("GC").

§ 50166. Corrective Action.

(a) The agency may require that the owner and operator submit a written corrective action plan for responding to a release, if one or more of the following minimum threshold criteria are met:

(1) Actual or probable release to groundwater which is a drinking water supply;
(2) Actual or probable release to surface water which is a drinking water supply;
(3) Actual or probable release to air that poses a threat to public health;
(4) Actual or probable release to and extensive contamination of soil that poses a direct contact hazard due to uncontrolled access;
(5) Actual or probable existence of uncontrolled regulated substances that pose a direct contact hazard due to uncontrolled access;
(6) Actual or probable adverse impact to natural resources;
(7) Actual or probable imminent danger of fire or explosion; or

(8) A determination by the Administrator that a release poses a substantial endangerment to public health or welfare, the environment, or natural resources.

(b) If a plan is required, owners and operators must submit the plan to the agency in a format established by the agency within thirty (30) calendar days of the agency's request, unless an extension of time is granted by the agency.

(c) Corrective action plans which are required to be submitted to the agency shall be subject to the review and discretionary approval of the agency in accordance with the procedures set forth in this section. Owners and operators are responsible for submitting a corrective action plan that provides for adequate protection of human health and the environment as determined by the agency and must make necessary modifications to the plan when directed to do so by the agency.

(d) The agency will approve the corrective action plan only after ensuring that implementation of the plan will adequately protect human health, safety, and the environment. In making this determination, the agency will consider the following factors as appropriate:

(1) Physical and chemical characteristics of the regulated substance, including its toxicity, persistence, and potential for migration;

(2) Hydrogeologic characteristics of the facility and the surrounding area;

(3) Proximity, quality, and current and future uses of nearby surface water and groundwater;

(4) Potential effects of residual contamination on nearby surface water and groundwater;

(5) An exposure assessment; and

(6) All other information assembled in compliance with this subchapter.

(e) The public participation procedures set forth in § 50167 apply to all corrective action plans submitted under this section.

(f) Upon approval of a corrective action plan, owners and operators must implement the plan, including any modifications to the plan made by the agency. Owners and operators must monitor, evaluate, and report

quarterly to the agency the results of implementing the corrective action plan pursuant to this section and § 50165.2.
(g) Owners and operators who have been requested by the agency to submit a corrective action plan are encouraged to begin cleanup of contaminated soils, surface water, groundwater, and materials before the plan is approved by the agency provided that they:

(1) Notify the agency of their intention to begin cleanup;
(2) Ensure that cleanup measures undertaken are consistent with the cleanup actions required pursuant to § 50165.3;
(3) Comply with any conditions imposed by the agency, including halting cleanup or mitigating adverse consequences from cleanup activities; and
(4) Incorporate self-initiated cleanup measures in the corrective action plan that is submitted to the agency for approval.

§ 50167. Public Participation for Corrective Action Plans.

(a) The agency shall conduct public participation activities in accordance with subsections (c) through (h) when:

(1) A corrective action plan required pursuant to § 50166(a) has been submitted and the agency has made a tentative decision concerning the proposed plan; or
(2) Implementation of any previously approved corrective action plan has not achieved the cleanup levels established in the plan and termination of the plan is under consideration by the agency.

(b) The agency will provide notice to the public of the release and the applicable response as required in subsections (c) and (d). Costs for all public participation activities described in subsections (c) through (h) shall be borne by the owner and operator of the UST or UST system, including the costs of making copies of materials to the public under subsection (f).
(c) Notice to members of the public directly affected by the release, as defined in § 50165.1(a), shall be given in the form of a letter from the agency and shall include at least the following information:

(1) Name and address of the UST or UST system;

(2) Name and address of the owner and operator of the UST or UST system;
(3) Summary of the release information and the proposed or previously approved corrective action plan;
(4) The agency's tentative decision concerning the proposed corrective action plan or concerning the termination of the previously approved corrective action plan;
(5) Announcement that an informational meeting will be held in accordance with subsection (g);
(6) Request for comments on the corrective action plan and the agency's tentative decision; and
(7) Availability of information on the release and the agency's tentative decision.

(d) Notice to the general public shall be given in the form of a notice in a local newspaper and shall include at least the information required in subsection (c)(1) to (7).

(e) Comments shall be received by the agency no later than thirty (30) calendar days after the notice provided in subsections (c) and (d) or after the end of the public meeting held pursuant to subsection (g), if any, whichever occurs later.

(f) Information on the release, the proposed corrective action plan, and the agency's tentative decision on the plan shall be made available to the public for inspection upon request.

(g) Before approving a corrective action plan, the agency may conduct a public meeting to provide information and receive comments on the proposed plan. A meeting will be held if there is sufficient public interest. Public interest shall be indicated by written request to the agency.

(h) At the Administrator's discretion, a notice of final decision may be issued.

§ 50168 to § 50169. [Reserved.]

ARTICLE 7
OUT-OF-SERVICE UST SYSTEMS AND CLOSURE

§ 50170. Temporary Closure
§ 50171. Permanent Closure and Change-in-Service
§ 50172. Assessing the Site at Closure or Change-in-Service
§ 50173. Applicability to Previously Closed UST Systems
§ 50174. Closure Records
§ 50175. Closure--Code of Practice
§ 50176 - § 50189. [Reserved.]

§ 50170. Temporary Closure.

(a) When an UST system is temporarily closed, owners and operators must continue operation and maintenance of corrosion protection in accordance with § 50131, and applicable release detection in accordance with Article 4. Articles 5 and 6 must be complied with if a release is suspected or confirmed. Spill and overfill operation and maintenance testing and inspections in Article 3 are not required during temporary closure. If the UST system is empty, release detection and release detection operation and maintenance testing and inspections in Articles 3 and 4 are not required. The UST system is empty when all materials have been removed using commonly employed practices so that no more than 2.5 centimeters (one inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remain in the system.
(b) When an UST system is temporarily closed for ninety (90) calendar days or more, owners and operators must also comply with the following requirements:

(1) Leave vent lines open and functioning; and
(2) Cap and secure all other lines, pumps, manways, and ancillary equipment.

(c) When an UST system is temporarily closed for more than twelve (12) months, owners and operators must permanently close the UST system if it does not meet the applicable design, construction, and installation requirements in Article 2, except that the spill and overfill equipment requirements do not have to be met. Owners and operators must

permanently close the substandard UST systems at the end of this twelve-month period in accordance with §§ 50171 to 50174, unless the agency provides an extension of the twelve-month temporary closure period. Owners and operators must complete a site assessment in accordance with § 50172 before such an extension can be applied for.

§ 50171. Permanent Closure and Change-in-Service.

(a) At least thirty (30) calendar days before beginning either permanent closure or a change-in-service of an UST or tank system under subsections (c) and (d), owners and operators must notify the agency in writing of their intent to permanently close or make the change-in-service, unless such action is in response to a confirmed release. The required assessment of the excavation zone under § 50172 must be performed after notifying the agency but before completion of the permanent closure or change-in-service.

(b) At least seven (7) calendar days before excavation work for a permanent closure or change-in-service, owners or operators must notify the agency of the exact date that the work will occur.

(c) To permanently close an UST or tank system, owners and operators must:

(1) Empty and clean the UST and tank system by removing all liquids and accumulated sludge;

(2) Remove the UST or tank system from the ground, fill the UST or tank system with an inert solid material, or close the tank in place in a manner approved by the agency; and

(3) Conduct a site assessment in accordance with § 50172.

(d) Continued use of an UST system to store a non-regulated substance is considered a change-in-service. Before a change-in-service, owners and operators must:

(1) Empty and clean the UST and tank system by removing all liquids and accumulated sludge; and

(2) Conduct a site assessment in accordance with § 50172.

(e) Within thirty (30) calendar days of completing a permanent closure or change-in-service, owners and operators must submit a notification to the

agency indicating completion of the closure or change-in-service.

§ 50172. Assessing the Site at Closure or Change-in-Service.

(a) Before permanent closure or a change-in-service is completed, owners and operators must measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the method of closure, the nature of the stored substance, the types of backfill and surrounding soil, the depth and flow of groundwater, and other factors appropriate for identifying the presence of a release.
(b) If contaminated soils, contaminated groundwater, or free product as a liquid or vapor is discovered under subsection (a), or by any other manner, owners and operators must begin release response action in accordance with Article 6.

§ 50173. Applicability to Previously Closed UST Systems.

(a) When directed by the agency, the owner and operator of an UST system permanently closed before December 22, 1988 must assess the excavation zone and close the UST system in accordance with this Article if releases from the UST may, in the judgment of the agency, pose a current or potential threat to human health and the environment.
(b) When directed by the agency, the owner and operator of an UST system with field-constructed tanks or an airport hydrant fuel distribution system permanently closed before October 13, 2015, must assess the excavation zone and close the UST system in accordance with this Article if releases from the UST may, in the judgment of the agency, pose a current or potential threat to human health and the environment.

§ 50174. Closure Records.

Owners and operators must maintain records in accordance with § 50134 that are capable of demonstrating compliance with closure requirements

under this Article. The results of the excavation zone assessment required in § 50172 must be maintained for at least three (3) years after completion of permanent closure or change-in-service in one of the following ways:

(1) By the owners and operators who took the UST system out of service;
(2) By the current owners and operators of the UST system site; or
(3) By mailing these records to the agency if they cannot be maintained at the closed facility.

§ 50175. Closure--Code of Practice.

The following current cleaning and closure procedures may be used to comply with § 50171:

(1) American Petroleum Institute Recommended Practice RP 1604, "Closure of Underground Petroleum Storage Tanks";
(2) American Petroleum Institute Standard 2015, "Safe Entry and Cleaning of Petroleum Storage Tanks, Planning and Managing Tank Entry From Decommissioning Through Recommissioning";
(3) American Petroleum Institute Recommended Practice 2016, "Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks";
(4) American Petroleum Institute Recommended Practice RP 1631, "Interior Lining and Periodic Inspection of Underground Storage Tanks", may be used as guidance for compliance with this section;
(5) National Fire Protection Association Standard 326, "Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair"; and
(6) National Institute for Occupational Safety and Health Publication 80–106, "Criteria for a Recommended Standard...Working in Confined Space", may be used as guidance for conducting safe closure procedures at some

tanks containing hazardous substances.

§§ 50176 to 50189. [Reserved.]

ARTICLE 8
FINANCIAL RESPONSIBILITY

§ 50190. Applicability
§ 50191. [Reserved]
§ 50192. Definition of Terms
§ 50193. Amount and Scope of Required Financial Responsibility
§ 50194. Allowable Mechanism and Combinations of Mechanisms
§ 50195. Financial Test of Self-Insurance
§ 50196. Guarantee
§ 50197. Insurance and Risk Retention Group Coverage
§ 50198. Surety Bond
§ 50199. Letter of Credit
§ 501100 to § 501101. [Reserved]
§ 501102. Trust Fund
§ 501103. Standby Trust Fund
§ 501104. Local Government Bond Rating Test
§ 501105. Local Government Financial Test
§ 501106. Local Government Guarantee
§ 501107. Local Government Fund
§ 501108. Substitution of Financial Assurance Mechanisms by Owner or Operator
§ 501109. Cancellation or Non-renewal by a Provider of Financial Assurance
§ 501110. Reporting by Owner or Operator
§ 501111. Record Keeping
§ 501112. Drawing of Financial Assurance Mechanisms
§ 501113. Release from the Requirements
§ 501114. Bankruptcy or Other Incapacity of Owner or Operator or Provider of Financial Assurance

§ 501115. Replenishment of Guarantee, Letters of Credit, or Surety Bond
§ 501116. to § 501199 [Reserved]

§ 50190. Applicability.

(a) This Article applies to owners and operators of all petroleum underground storage tank (UST) systems except as otherwise provided in this section.
(b) State and federal government entities whose debts and liabilities are the debts and liabilities of a state or the United States are exempt from the requirements of this Article.
(c) The requirements of this Article do not apply to owners and operators of any UST system described in § 50110(b), (c)(1), (c)(3), or (c)(4).
(d) If the owner and operator of a petroleum underground storage tank system are separate persons, only one person is required to demonstrate financial responsibility; however, both parties are liable in the event of noncompliance.

§ 50191. [Reserved.]

§ 50192. Definition of Terms.

When used in this Article, the following terms have the meanings given below:

"Accidental release" means any sudden or nonsudden release of petroleum arising from operating an underground storage tank system that results in a need for release response action and/or compensation for bodily injury or property damage neither expected nor intended by the tank system owner or operator.

"Bodily injury" shall have the meaning given to this term by applicable state law; however, this term shall not include those liabilities which, consistent with standard insurance industry practices, are excluded from coverage in liability insurance policies for bodily injury.

"Chief financial officer" in the case of local government owners and

operators, means the individual with the overall authority and responsibility for the collection, disbursement, and use of funds by the local government.

"Controlling interest" means direct ownership of at least fifty percent of the voting stock of another entity.

"Financial reporting year" means the latest consecutive twelve-month period for which any of the following reports used to support a financial test is prepared:

(1) A 10-K report submitted to the U.S. Securities and Exchange Commission;

(2) An annual report of tangible net worth submitted to Dun and Bradstreet; or

(3) Annual reports submitted to the Energy Information Administration or the Rural Utilities Service.

"Financial reporting year" may thus comprise a fiscal or a calendar year period.

"Legal defense cost" is any expense that an owner or operator or provider of financial assurance incurs in defending against claims or actions brought:

(1) By EPA or the state to require release response action or to recover the costs of release response action;

(2) By or on behalf of a third party for bodily injury or property damage caused by an accidental release; or

(3) By any person to enforce the terms of a financial assurance mechanism.

"Occurrence" means an accident, including continuous or repeated exposure to conditions, which results in a release from an underground storage tank system. This definition is intended to assist in the understanding of these regulations and is not intended either to limit the meaning of "occurrence" in a way that conflicts with standard insurance usage or to prevent the use of other standard insurance terms in place of "occurrence".

"Owner or operator", when the owner or operator is separate parties, refers to the party that is obtaining or has obtained financial assurances.

"Petroleum marketing facilities" include all facilities at which petroleum is produced or refined and all facilities from which petroleum is sold or transferred to other petroleum marketers or to the public.

"Property damage" shall have the meaning given this term by applicable state law. This term shall not include those liabilities which, consistent with standard insurance industry practices, are excluded from coverage in liability insurance policies for property damage. However, such exclusions for property damage shall not include response actions associated with releases from USTs or tank systems which are covered by the policy.

"Provider of financial assurance" means an entity that provides financial assurance to an owner or operator of an underground storage tank system through one of the financial mechanisms listed in §§ 50195 through 501107, including a guarantor, insurer, risk retention group, surety, issuer of a letter of credit, issuer of a state-required mechanism, or a state.

"Substantial business relationship" means the extent of a business relationship necessary under applicable state law to make a guarantee contract issued incident to that relationship valid and enforceable. A guarantee contract is issued "incident to that relationship" if it arises from and depends on existing economic transactions between the guarantor and the owner or operator.

"Substantial governmental relationship" means the extent of a governmental relationship necessary under applicable state law to make an added guarantee contract issued incident to that relationship valid and enforceable. A guarantee contract is issued "incident to that relationship" if it arises from a clear commonality of interest in the event of an UST or tank system release such as coterminous boundaries, overlapping constituencies, common groundwater aquifer, or other relationship other than monetary compensation that provides a motivation for the guarantor to provide a guarantee.

"Tangible net worth" means the tangible assets that remain after deducting liabilities; such assets do not include intangibles such as goodwill and rights to patents or royalties. For purposes of this definition, "assets" means all existing and all probable future economic benefits

obtained or controlled by a particular entity as a result of past transactions.

"Termination" under § 50197(b)(1) and (2) means only those changes that could result in a gap in coverage as where the insured has not obtained substitute coverage or has obtained substitute coverage with a different retroactive date than the retroactive date of the original policy.

§ 50193. Amount and Scope of Required Financial Responsibility.

(a) Owners or operators of petroleum USTs or tank systems must demonstrate financial responsibility for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum USTs or tank systems in at least the following per-occurrence amounts:

(1) For owners or operators of petroleum USTs or tank systems that are located at petroleum marketing facilities, or that handle an average of more than ten thousand gallons of petroleum per month based on annual throughput for the previous calendar year: $1,000,000; and

(2) For all other owners or operators of petroleum USTs or tank systems: $500,000.

(b) Owners or operators of petroleum USTs or tank systems must demonstrate financial responsibility for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum USTs or tank systems in at least the following annual aggregate amounts:

(1) For owners or operators of one to one hundred petroleum USTs: $1,000,000; and

(2) For owners or operators of one hundred one or more petroleum USTs: $2,000,000.

(c) For the purposes of subsections (b) and (f) only, "a petroleum underground storage tank" or "a petroleum UST" means a single containment unit and does not mean combinations of single containment units.

(d) Except as provided in subsection (e), if the owner or

operator uses separate mechanisms or separate combinations of mechanisms to demonstrate financial responsibility for:

(1) Taking corrective action;

(2) Compensating third parties for bodily injury and property damage caused by sudden accidental releases; or

(3) Compensating third parties for bodily injury and property damage caused by nonsudden accidental releases, the amount of assurance provided by each mechanism or combination of mechanisms must be in the full amount specified in subsections (a) and (b).

(e) If an owner or operator uses separate mechanisms or separate combinations of mechanisms to demonstrate financial responsibility for different petroleum underground storage tanks, the annual aggregate required shall be based on the number of tanks covered by each such separate mechanism or combination of mechanisms.

(f) Owners or operators shall review the amount of aggregate assurance provided whenever additional petroleum underground storage tanks are acquired or installed. If the number of petroleum underground storage tanks for which assurance must be provided exceeds one hundred, the owner or operator shall demonstrate financial responsibility in the amount of at least $2,000,000 of annual aggregate assurance by the anniversary of the date on which the mechanism demonstrating financial responsibility became effective. If assurance is being demonstrated by a combination of mechanisms, the owner or operator shall demonstrate financial responsibility in the amount of at least $2,000,000 of annual aggregate assurance by the first-occurring effective date anniversary of any one of the mechanisms combined (other than a financial test or guarantee) to provide assurance.

(g) The amounts of assurance required under this section exclude legal defense costs.

(h) The required per-occurrence and annual aggregate coverage amounts do not in any way limit the liability of the owner or operator.

§ 50194. Allowable Mechanism and Combinations of Mechanisms.

(a) Subject to the limitations of subsections (b) and (c):

(1) An owner or operator, including a local government owner or operator, may use any one or combination of the mechanisms listed in §§ 50195 through 501103 to demonstrate financial responsibility under this Article for one or more USTs or tank systems; and

(2) A local government owner or operator may use any one or combination of the mechanisms listed in §§ 501104 through 501107 to demonstrate financial responsibility under this subchapter for one or more USTs or tank systems.

(b) An owner or operator may use a guarantee under § 50196 or surety bond under § 50198 to establish financial responsibility only if the State Attorney General has submitted a written statement to the administrator that a guarantee or surety bond executed as described in this section is a legally valid and enforceable obligation in the State.

(c) An owner or operator may use self-insurance in combination with a guarantee only if, for the purpose of meeting the requirements of the financial test under this rule, the financial statements of the owner or operator are not consolidated with the financial statements of the guarantor.

§ 50195. Financial Test of Self-Insurance.

(a) An owner or operator, and/or guarantor, may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by passing a financial test as specified in this section. To pass the financial test of self-insurance, the owner or operator, and/or guarantor, must meet the criteria of subsection (b) or (c) based on year-end financial statements for the latest completed fiscal year.

(b) (1) The owner or operator, and/or guarantor, must have a tangible net worth of at least ten times:

(A) The total of the applicable aggregate amount required by § 50193, Guam Administrative Rules and Regulations, based on the number of underground storage tanks for which a financial test is used to

demonstrate financial responsibility to the agency, to EPA, or to a state implementing agency under a state program approved by EPA under 40 C.F.R. part 281;

(B) The sum of the RCRA subtitle C corrective action cost estimates, the current closure and post-closure care cost estimates, and amount of liability coverage for which a financial test is used to demonstrate financial responsibility to demonstrate financial responsibility to the agency under 40 C.F.R. sections 261.143 and 261.147, as incorporated and amended in section 11-261.1-1, 40 C.F.R. sections 264.101, 264.143, 264.145, and 264.147, as incorporated and amended in section 11-264.1-1, and 40 C.F.R. sections 265.143, 265.145, and 265.147, as incorporated and amended in section 11-265.1-1, to EPA under 40 C.F.R. sections 261.143, 261.147, 264.101, 264.143, 264.145, 264.147, 265.143, 265.145, and 265.147, or to a state implementing agency under a state program authorized by EPA under 40 C.F.R. part 271; and

(C) The sum of current plugging and abandonment cost estimates for which a financial test is used to demonstrate financial responsibility to EPA under 40 C.F.R. section 144.63 or to a state implementing agency under a state program authorized by EPA under 40 C.F.R. part 145.

(2) The owner or operator, and/or guarantor, must have a tangible net worth of at least $10,000,000.

(3) The owner or operator, and/or guarantor, must have a letter signed by the chief financial officer worded as specified in subsection (d).

(4) The owner or operator, and/or guarantor, must either:

(A) File financial statements annually with the U.S. Securities and Exchange Commission, the Energy Information Administration, or the Rural Utilities Service; or

(B) Report annually the firm's tangible net worth to Dun and Bradstreet, and Dun and Bradstreet must have assigned the firm a financial strength rating of 4A or 5A.

(5) The firm's year-end financial statements, if independently audited, cannot include an adverse auditor's opinion, a disclaimer of opinion, or a "going concern" qualification.

(c) (1) The owner or operator, and/or guarantor, must meet the financial test requirements of 40 C.F.R. section 264.147(f)(1), substituting the appropriate amounts specified in § 50193(b)(1) and (2), Guam Administrative Rules and Regulations for the "amount of liability coverage" each time specified in that section.

(2) The fiscal year-end financial statements of the owner or operator, and/or guarantor, must be examined by an independent certified public accountant and be accompanied by the accountant's report of the examination.

(3) The firm's year-end financial statements cannot include an adverse auditor's opinion, a disclaimer of opinion, or a "going concern" qualification.

(4) The owner or operator, and/or guarantor, must have a letter signed by the chief financial officer, worded as specified in subsection (d).

(5) If the financial statements of the owner or operator, and/or guarantor, are not submitted annually to the U.S. Securities and Exchange Commission, the Energy Information Administration or the Rural Utilities Service, the owner or operator, and/or guarantor, must obtain a special report by an independent certified public accountant stating that:

(A) The accountant has compared the data that the letter from the chief financial officer specifies as having been derived from the latest year-end financial statements of the owner or operator, and/or guarantor, with the amounts in such financial statements; and

(B) In connection with that comparison, no matters came

to the accountant's attention, which caused the accountant to believe that the specified data should be adjusted.

(d) To demonstrate that it meets the financial test under subsection (b) or (c), the chief financial officer of the owner or operator, or guarantor, must sign, within one hundred twenty days of the close of each financial reporting year, as defined by the twelve-month period for which financial statements used to support the financial test are prepared, a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of the owner or operator, or guarantor]. This letter is in support of the use of [insert: "the financial test of self-insurance" or "guarantee" or both] to demonstrate financial responsibility for [insert: "taking corrective action" or "compensating third parties for bodily injury and property damage" or both] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s).

Underground storage tanks at the following facilities are assured by this financial test, or a corresponding financial test under EPA or another authorized state program, by this [insert: "owner or operator" or "guarantor"]:

[List for each facility: the name and address of the facility where tanks assured by this financial test are located, and whether tanks are assured by this financial test or a corresponding financial test under EPA or under a state program approved under 40 C.F.R. part 281. If separate mechanisms or combinations of mechanisms are being used to assure any of the tanks at this facility, list each tank assured by this financial test by the tank identification number provided in the notification submitted pursuant to 40 C.F.R. section 280.22, or in the permit applications submitted under §§ 501324 and

501326, Guam Administrative Rules and Regulations

A [insert: "financial test" and/or "guarantee"] is also used by this [insert: "owner or operator" or "guarantor"] to demonstrate evidence of financial responsibility in the following amounts under other EPA regulations or state programs authorized by EPA under 40 C.F.R. parts 271 and 145:

	Amount
EPA Regulations:	
Closure (§§261.143, 264.143, and 265.143)	$
Post-Closure Care (§§264.145 and 265.145)	
Liability Coverage (§§261.147, 264.147, and 265.147)	$
Corrective Action (§264.101(b))	
Plugging and Abandonment (§144.63)	$
	$
	$
Authorized State Programs:	
Closure	$
Post-Closure Care	$
Liability Coverage	$
Corrective Action	$
Plugging and Abandonment	$
TOTAL	$

This [insert: "owner or operator" or "guarantor"] has not received an adverse opinion, a disclaimer of opinion, or a "going concern" qualification from an independent auditor on his or her financial statements for the latest completed fiscal year.

[Fill in the information for Alternative I if the criteria of subsection (b) are being used to demonstrate compliance with the financial test requirements. Fill in the information for Alternative II if the criteria of

subsection (c) are being used to demonstrate compliance with the financial test requirements.]

ALTERNATIVE I

	Amount		
1. Amount of annual UST aggregate coverage being assured by a financial test, or guarantee or both	$		
2. Amount of corrective action, closure and post-closure care costs, liability coverage, and plugging and abandonment costs covered by a financial test, or guarantee or both	$		
3. Sum of lines 1 and 2	$		
4. Total tangible assets	$		
5. Total liabilities [if any of the amount reported on line 3 is included in total liabilities, you may deduct that amount from this line and add that amount to line 6]	$		
6. Tangible net worth [subtract line 5 from line 4]	$		
7. Is line 6 at least $10,000,000?		Yes	No
8. Is line 6 at least ten times line 3?		Yes	No
9. Have financial statements for the latest fiscal year been filed with the U.S. Securities and Exchange Commission?		Yes	No
10. Have financial statements for the latest fiscal year been filed with the federal Energy Information Administration?		Yes	No
11. Have financial statements for the latest fiscal year been filed with the federal Rural Utilities Service?		Yes	No
12. Has financial information been provided to Dun and Bradstreet, and has Dun and Bradstreet provided a financial strength rating of 4A or 5A? [Answer "Yes" only if both criteria have been met.]		Yes	No

ALTERNATIVE II

	Amount	
1. Amount of annual UST aggregate coverage being assured by a financial test, or guarantee or both	$	
2. Amount of corrective action, closure and post-closure care costs, liability coverage, and plugging and abandonment costs covered by a financial test, or guarantee or both	$	
3. Sum of lines 1 and 2	$	
4. Total tangible assets	$	
5. Total liabilities [if any of the amount reported on line 3 is included in total liabilities, you may deduct that amount from this line and add that amount to line 6]	$	
6. Tangible net worth [subtract line 5 from line 4]	$	
7. Total assets in the U.S. [required only if less than ninety per cent of assets are located in the U.S.]	$	
8. Is line 6 at least $10,000,000?	Yes	No
9. Is line 6 at least six times line 3?	Yes	No
10. Are at least ninety per cent of assets located in the U.S.? [If "No," complete line 11]	Yes	No
11. Is line 7 at least six times line 3?	Yes	No
[Fill in either lines 12-15 or lines 16-18:]		
12. Current assets	$	
13. Current liabilities	$	
14. Net working capital [subtract line 13 from line 12]	$	
15. Is line 14 at least six times line 3?	Yes	No
16. Current bond rating of most recent bond issue		

17. Name of rating service

18. Date of maturity of bond

19. Have financial statements for the latest fiscal year been filed with the U.S. Securities and Exchange Commission, the federal Energy Information Administration, or the federal Rural Utilities Service? Yes No

[If "No," please attach a report from an independent certified public accountant certifying that there are no material differences between the data as reported in lines 4-18 above and the financial statements for the latest fiscal year.]

[For both Alternative II and I complete the certification with this statement.]

I hereby certify that the wording of this letter is identical to the wording specified in § 50195(d), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Signature]
[Name]
[Title]
[Date]

(e) If an owner or operator using the test to provide financial assurance finds that he or she no longer meets the requirements of the financial test based on the year-end financial statements, the owner or operator must obtain alternative coverage within one hundred fifty days of the end of the year for which financial statements have been prepared.

(f) The Administrator may require reports of financial condition at any time from the owner or operator, and/or guarantor. If the director finds, on the basis of such reports or other information, that the owner or operator, and/or guarantor, no longer meets the financial test requirements of subsections (b) or (c) and (d), the owner or operator must

obtain alternate coverage within thirty days after notification of such a finding.

(g) If the owner or operator fails to obtain alternate assurance within one hundred fifty days of finding that he or she no longer meets the requirements of the financial test based on the year-end financial statements, or within thirty days of notification by the Administrator that he or she no longer meets the requirements of the financial test, the owner or operator must notify the director of such failure within ten days.

§ 50196. Guarantee.

(a) An owner or operator may satisfy the requirements of § 50193 by obtaining a guarantee that conforms to the requirements of this section. The guarantor must be:

(1) A firm that:

(A) Possesses a controlling interest in the owner or operator;

(B) Possesses a controlling interest in a firm described under subparagraph (A); or

(C) Is controlled through stock ownership by a common parent firm that possesses a controlling interest in the owner or operator; or

(2) A firm engaged in a substantial business relationship with the owner or operator and issuing the guarantee as an act incident to that business relationship.

(b) Within one hundred twenty days of the close of each financial reporting year the guarantor must demonstrate that it meets the financial test criteria of § 50195, Guam Administrative Rules and Regulations based on year-end financial statements for the latest completed financial reporting year by completing the letter from the chief financial officer described in § 50195(d), Guam Administrative Rules and Regulations and must deliver the letter to the owner or operator. If the guarantor fails to meet the requirements of the financial test at the end of any financial reporting year, within one hundred twenty days of the end of that financial reporting year the guarantor shall send by certified mail,

before cancellation or nonrenewal of the guarantee, notice to the owner or operator. If the Administrator notifies the guarantor that it no longer meets the requirements of the financial test of § 50195(b) or (c) and (d), Guam Administrative Rules and Regulations, the guarantor must notify the owner or operator within ten days of receiving such notification from the Administrator. In both cases, the guarantee will terminate no less than one hundred twenty days after the date the owner or operator receives the notification, as evidenced by the return receipt. The owner or operator must obtain alternative coverage as specified in § 501114(e), Guam Administrative Rules and Regulations.

(c) The guarantee must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

GUARANTEE

Guarantee made this [date] by [name of guaranteeing entity], a business entity organized under the laws of the State of [name of state], herein referred to as guarantor, to Guam Environmental Protection Agency and to any and all third parties, and obligees, on behalf of [owner or operator] of [business address].

Recitals.

(1) Guarantor meets or exceeds the financial test criteria of § 50195(b) or (c) and (d), Guam Administrative Rules and Regulations , and agrees to comply with the requirements for guarantors as specified in § 50196(b), Guam Administrative Rules and Regulations.

(2) [Owner or operator] owns or operates the following underground storage tank(s) covered by this guarantee: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. section 280.22, or in the permit

applications submitted under §§ 501324 and 501326 and the name and address of the facility.] This guarantee satisfies Article 8 of Guam Administrative Rules and Regulations, requirements for assuring funding for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the above-identified underground storage tank(s) in the amount of [insert dollar amount] per occurrence and [insert dollar amount] annual aggregate.

(3) [Insert appropriate phrase: "On behalf of our subsidiary" (if guarantor is corporate parent of the owner or operator); "On behalf of our affiliate" (if guarantor is a related firm of the owner or operator); or "Incident to our business relationship with" (if guarantor is providing the guarantee as an incident to a substantial business relationship with owner or operator)] [owner or operator], guarantor guarantees to Guam Environmental Protection Agency and to any and all third parties that:

In the event that [owner or operator] fails to provide alternative coverage within sixty days after receipt of a notice of cancellation of this guarantee and the Administrator of Guam Environmental Protection Agency has determined or suspects that a release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon instructions from the Administrator of Guam Environmental Protection Agency, shall fund a standby trust fund in accordance with the provisions of § 501112 Guam Administrative Rules and Regulations, in an amount not to exceed the coverage limits specified above.

In the event that the Administrator of Guam Environmental Protection Agency determines that [owner or operator] has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with Article 6 Guam Administrative Rules and Regulations, the guarantor, upon written instructions from the Administrator of Guam Environmental Protection Agency, shall fund a standby trust in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, in an amount not to

exceed the coverage limits specified above.

If [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by ["sudden" and/or "nonsudden"] accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written instructions from the Administrator of Guam Environmental Protection Agency, shall fund a standby trust in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, to satisfy such judgment(s), award(s), or settlement agreement(s) up to the limits of coverage specified above.

(4) Guarantor agrees that if, at the end of any fiscal year before cancellation of this guarantee, the guarantor fails to meet the financial test criteria of § 50195(b) or (c) and (d), Guam Administrative Rules and Regulations, guarantor shall send within one hundred twenty days of such failure, by certified mail, notice to [owner or operator]. The guarantee will terminate one hundred twenty days from the date of receipt of the notice by [owner or operator], as evidenced by the return receipt.

(5) Guarantor agrees to notify [owner or operator] by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within ten days after commencement of the proceeding.

(6) Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of [owner or operator] pursuant to Title 22, Guam Administrative Rules and Regulations, Chapter 50.

(7) Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] must comply with the applicable financial responsibility requirements of Article 8, Guam Administrative Rules and Regulations, for the above-identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to [owner or operator], such cancellation to become effective no earlier than one hundred twenty days after receipt of such notice by [owner or operator],

as evidenced by the return receipt.

(8) The guarantor's obligation does not apply to any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily damage or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

(9) Guarantor expressly waives notice of acceptance of this guarantee by the Guam Environmental Protection Agency, by any or all third parties, or by [owner or operator].

I hereby certify that the wording of this guarantee is identical to the wording specified in § 50196(c) Guam Administrative Rules and Regulations, as such regulations were constituted on the effective date shown immediately below.

Effective date:
[Name of guarantor]
[Authorized signature for guarantor]
[Name of person signing]
[Title of person signing]

Signature of witness or notary:

(d) An owner or operator who uses a guarantee to satisfy the requirements of § 50193 Guam Administrative Rules and Regulations must establish a standby trust fund when the guarantee is obtained. Under the terms of the guarantee, all amounts paid by the guarantor under the guarantee will be deposited directly into the standby trust fund in accordance with instructions from the Administrator of Guam Environmental Protection Agency under § 501112. This standby trust fund must meet the requirements specified in § 501103.

§ 50197. Insurance and Risk Retention Group Coverage.

(a) An owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by obtaining liability insurance that conforms to the requirements of this section from a qualified insurer or risk retention group. Such insurance may be in the form of a separate insurance policy or an endorsement to an existing insurance policy.

(b) Each insurance policy must be amended by an endorsement worded as specified in paragraph (l) or evidenced by a certificate of insurance worded as specified in paragraph (2), except that instructions in brackets must be replaced with the relevant information and the brackets deleted:

(1) ENDORSEMENT

Name: [name of each covered location]
Address: [address of each covered location]
Policy Number:
Period of Coverage: [current policy period]
Name of [Insurer or Risk Retention Group]:
Address of [Insurer or Risk Retention Group]:
Name of Insured:
Address of Insured:

Endorsement:

1. This endorsement certifies that the policy to which the endorsement is attached provides liability insurance covering the following underground storage tanks:

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility.] for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; in accordance with and subject to the limits of liability, exclusions, conditions, and other terms of the policy; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tank(s) identified above.

The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's or Group's liability; if the amount of coverage is different for different types of coverage or for different underground storage tanks or locations, indicate the amount of coverage for each type of coverage, and/or for each underground storage tank or location], exclusive of legal defense costs, which are subject to a separate limit under the policy. This coverage is provided under [policy number]. The effective date of said policy is [date].

2. The insurance afforded with respect to such

occurrences is subject to all of the terms and conditions of the policy; provided, however, that any provisions inconsistent with subsections (a) to (e) of this paragraph are hereby amended to conform with subsections (a) to (e);

a. Bankruptcy or insolvency of the insured shall not relieve the ["Insurer" or "Group"] of its obligations under the policy to which this endorsement is attached.

b. The ["Insurer" or "Group"] is liable for the payment of amounts within any deductible applicable to the policy to the provider of corrective action or a damaged third-party, with a right of reimbursement by the insured for any such payment made by the ["Insurer" or "Group"]. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated under another mechanism or combination of mechanisms as specified in §§ 50195 to 501102 and §§ 501104 to 501107, Guam Administrative Rules and Regulations.

c. Whenever requested by the Administrator of Guam Environmental Protection Agency, the ["Insurer" or "Group"] agrees to furnish to the Administrator of Guam Environmental Protection Agency a signed duplicate original of the policy and all endorsements.

d. Cancellation or any other termination of the insurance by the ["Insurer" or "Group"], except for non-payment of premium or misrepresentation by the insured, will be effective only upon written notice and only after the expiration of sixty days after a copy of such written notice is received by the insured. Cancellation for non-payment of premium or misrepresentation by the insured will be effective only upon written notice and only after expiration of a minimum of ten days after a copy of such written notice is received by the insured. Insert for claims-

made policies:

e. The insurance covers claims otherwise covered by the policy that are reported to the ["Insurer" or "Group"] within six months of the effective date of cancellation or non-renewal of the policy except where the new or renewed policy has the same retroactive date or a retroactive date earlier than that of the prior policy, and which arise out of any covered occurrence that commenced after the policy retroactive date, if applicable, and prior to such policy renewal or termination date. Claims reported during such extended reporting period are subject to the terms, conditions, limits, including limits of liability, and exclusions of the policy.]

I hereby certify that the wording of this instrument is identical to the wording in § 50197(b)(1) , Guam Administrative Rules and Regulations, and that the ["Insurer" or "Group"] is ["licensed to transact the business of insurance or eligible to provide insurance as an excess or surplus lines insurer in Guam"].

[Signature of authorized representative of Insurer or Risk Retention Group]
[Name of person signing]
[Title of person signing], Authorized Representative of [name of Insurer or Risk Retention Group]
[Address of Representative]

(2) CERTIFICATE OF INSURANCE

Name: [name of each covered location]
Address: [address of each covered location]
Policy Number:

Endorsement (if applicable):
Period of Coverage: [current policy period]
Name of [Insurer or Risk Retention Group]:
Address of [Insurer or Risk Retention Group]:
Name of Insured:
Address of Insured:

Certification:

1. [Name of Insurer or Risk Retention Group], [the "Insurer" or "Group"], as identified above, hereby certifies that it has issued liability insurance covering the following underground storage tank(s):

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility.] for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; in accordance with and subject to the limits of liability, exclusions, conditions, and other terms of the policy; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tank(s) identified above.

The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's or Group's liability; if the amount of coverage is different for different types of coverage or for different

underground storage tanks or locations, indicate the amount of coverage for each type of coverage and/or for each underground storage tank or location], exclusive of legal defense costs, which are subject to a separate limit under the policy. This coverage is provided under [policy number]. The effective date of said policy is [date].

2. The ["Insurer" or "Group"] further certifies the following with respect to the insurance described in Paragraph 1:

a. Bankruptcy or insolvency of the insured shall not relieve the ["Insurer" or "Group"] of its obligations under the policy to which this certificate applies.

b. The ["Insurer" or "Group"] is liable for the payment of amounts within any deductible applicable to the policy to the provider of corrective action or a damaged third-party, with a right of reimbursement by the insured for any such payment made by the ["Insurer" or "Group"]. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated under another mechanism or combination of mechanisms as specified in §§ 50195 to 501102 and 501104 to 501107, Guam Administrative Rules and Regulations.

c. Whenever requested by the Administrator of Guam Environmental Protection Agency, the ["Insurer" or "Group"] agrees to furnish to the director a signed duplicate original of the policy and all endorsements.

d. Cancellation or any other termination of the insurance by the ["Insurer" or "Group"], except for non-payment of premium or misrepresentation by the insured, will be effective only upon written notice and only after the expiration of sixty days after a copy of such written notice is received by the insured. Cancellation for non-payment of premium or misrepresentation by the insured will be effective

only upon written notice and only after expiration of a minimum of ten days after a copy of such written notice is received by the insured. Insert for claims-made policies:

e. The insurance covers claims otherwise covered by the policy that are reported to the ["Insurer" or "Group"] within six months of the effective date of cancellation or non-renewal of the policy except where the new or renewed policy has the same retroactive date or a retroactive date earlier than that of the prior policy, and which arise out of any covered occurrence that commenced after the policy retroactive date, if applicable, and prior to such policy renewal or termination date. Claims reported during such extended reporting period are subject to the terms, conditions, limits, including limits of liability, and exclusions of the policy.]

I hereby certify that the wording of this instrument is identical to the wording in § 50197(b)(2), Guam Administrative Rules and Regulations, and that the ["Insurer" or "Group"] is ["licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in Guam"].

[Signature of authorized representative of Insurer]
[Type Name]
[Title], Authorized Representative of [name of Insurer or Risk Retention Group]
[Address of Representative]

(c) Each insurance policy must be issued by an insurer or a risk retention group that, at a minimum, is licensed to transact the business of insurance or eligible to provide insurance as an excess or surplus lines

insurer in Guam.

§ 50198. Surety Bond.

(a) An owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by obtaining a surety bond that conforms to the requirements of this section. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in the latest Circular 570 of the U.S. Department of the Treasury.

(b) The surety bond must be worded as follows, except that instructions in brackets must be replaced with the relevant information and the brackets deleted:

PERFORMANCE BOND

Date bond executed:
Period of coverage:
Principal: [legal name and business address of owner or operator]
Type of organization: [insert: "individual", "joint venture", "partnership", or "corporation"]
State of incorporation (if applicable):
Surety(ies): [name(s) and business address(es)]
Scope of Coverage: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility. List the coverage guaranteed by the bond: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases" "arising from operating the underground storage tank"].

Penal sums of bond:
Per occurrence $
Annual aggregate $
Surety's bond number:

Know All Persons by These Presents, that we, the Principal and Surety(ies), hereto are firmly bound to the Guam Environmental Protection Agency, in the above penal sums for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sums jointly and severally only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sums only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sums.

Whereas said Principal is required under Article 8, Guam Administrative Rules and Regulations, to provide financial assurance for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tanks identified above, and

Whereas said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

Now, therefore, the conditions of the obligation are such that if the Principal shall faithfully ["take corrective action, in accordance with Article 6, Guam Administrative Rules and Regulations, and the Administrator of Guam Environmental Protection Agency instructions for," and/or "compensate injured third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "sudden and nonsudden accidental releases"] arising from operating the tank(s) identified above, or if the

Principal shall provide alternate financial assurance, as specified in Article 8, Guam Administrative Rules and Regulations, within one hundred twenty days after the date the notice of cancellation is received by the Principal from the Surety(ies), then this obligation shall be null and void; otherwise it is to remain in full force and effect.

Such obligation does not apply to any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by the Administrator of Guam Environmental Protection Agency that the Principal has failed to ["take corrective action, in accordance with Article 6, Guam Administrative Rules and Regulations and the Administrator of Guam Environmental Protection Agency's instructions," and/or "compensate injured third parties"] as guaranteed by this bond, the Surety(ies) shall either perform ["corrective action in accordance with Chapter 50, Guam Administrative Rules and Regulations and the Administrator of Guam Environmental Protection Agency's

instructions," and/or "third party liability compensation"] or place funds in an amount up to the annual aggregate penal sum into the standby trust fund as directed by the Administrator of Guam Environmental Protection Agency under § 501112 , Guam Administrative Rules and Regulations.

Upon notification by the Administrator of Guam Environmental Protection Agency that the Principal has failed to provide alternate financial assurance within sixty days after the date the notice of cancellation is received by the determined or suspects that a release has occurred, the Surety(ies) shall place funds in an amount not exceeding the annual aggregate penal sum into the standby trust fund as directed by the Administrator of Guam Environmental Protection Agency and § 501112, Guam Administrative Rules and Regulations.

The Surety(ies) hereby waive(s) notification of amendments to applicable laws, statutes, rules, and regulations and agrees that no such amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the annual shall the obligation of the Surety(ies) hereunder exceed the amount of said annual aggregate penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal, provided, however, that cancellation shall not occur during the one hundred twenty days beginning on the date of return receipt.

The Principal may terminate this bond by sending written notice to the Surety(ies).

In Witness Thereof, the Principal and Surety(ies) have executed this Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in § 50198(b), Guam Administrative Rules and Regulations, as such regulations were constituted on the date this bond was executed.

Principal
[Signature(s)]
[Name(s)]
[Title(s)]
[Corporate seal]

Corporate Surety(ies)
[Name and address]
State of Incorporation:
Liability limit: $
[Signature(s)]
[Name(s) and title(s)]
[Corporate seal]

[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]

Bond premium: $

(c) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. In all cases, the surety's liability is limited to the per-occurrence and annual aggregate penal sums.

(d) The owner or operator who uses a surety bond to satisfy the requirements of § 50193, Guam Administrative Rules and Regulations must establish a standby trust fund when the surety bond is acquired. Under the terms of the bond, all amounts paid by the surety under the bond will be deposited directly into the standby trust fund in accordance with instructions from the Administrator of Guam Environmental Protection Agency under § 501112, Guam Administrative Rules and Regulations. This standby trust fund must meet the requirements specified in § 501103, Guam Administrative Rules and Regulations.

§ 50199. Letter of Credit.

(a) An owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by obtaining an irrevocable standby letter of credit that conforms to the requirements of this section. The issuing institution must be an entity that has the authority to issue letters of credit in Guam and whose letter-of-credit operations are regulated and examined by a federal or Guam agency.

(b) The letter of credit must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

IRREVOCABLE STANDBY LETTER OF CREDIT

[Name and address of issuing institution]
[Name and address of the Administrator of Guam Environmental Protection Agency]

Dear Sir or Madam: We hereby establish our Irrevocable Standby Letter of Credit No. __ in your favor, at the request and for the account of [owner or operator name] of [address] up to the aggregate amount of [in words] U.S. dollars ($[insert dollar amount]), available upon presentation of

(1) Your sight draft, bearing reference to this letter of credit, No. __, and

(2) Your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under authority of 10 GCA Chapter 76."

This letter of credit may be drawn on to cover [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] arising from operating the underground storage tank(s) identified below in the amount of [in words] $[insert dollar amount] per occurrence and [in words] $[insert dollar amount] annual aggregate:

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for

each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. 280.22, or permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility.]

The letter of credit may not be drawn on to cover any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

This letter of credit is effective as of [date] and shall expire on [date], but such expiration date shall be automatically extended for a period of [at least the length of the original term] on [expiration date] and on each successive expiration date, unless, at least one hundred twenty days before the current expiration date, we notify [owner or operator] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date. In the event that [owner or operator] is so notified, any unused portion of the credit shall be available upon presentation of your sight draft for one hundred twenty days after the date of receipt by [owner or operator], as shown on the signed return

receipt.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us, and we shall deposit the amount of the draft directly into the standby trust fund of [owner or operator] in accordance with your instructions.

We certify that the wording of this letter of credit is identical to the wording specified in § 50199(b), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Signature(s) and title(s) of official(s) of issuing institution]
[Date]

This credit is subject to [insert: "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce," or "the Uniform Commercial Code"].

(c) An owner or operator who uses a letter of credit to satisfy the requirements of § 50193, Guam Administrative Rules and Regulations must also establish a standby trust fund when the letter of credit is acquired. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the Administrator will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Administrator of Guam Environmental Protection Agency under § 501112, Guam Administrative Rules and Regulations. This standby trust fund must meet the requirements specified in § 501103, Guam Administrative Rules and Regulations.

(d) The letter of credit must be irrevocable with a term specified by the issuing institution. The letter of credit must provide that credit be automatically renewed for the same term as the original term, unless, at least one hundred twenty days before the current expiration date, the issuing institution notifies the owner or operator by certified mail of its decision not to renew the letter of credit. Under the terms of the letter of credit, the one hundred twenty days will begin on the date when the

owner or operator receives the notice, as evidenced by the return receipt.

§ 501100 to § 501101. [Reserved.]

§ 501102. Trust Fund.

(a) An owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by establishing a trust fund that conforms to the requirements of this section. The trustee must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal agency or an agency of the state in which the fund is established.

(b) The wording of the trust agreement must be identical to the wording specified in § 501103(b)(1), Guam Administrative Rules and Regulations, and must be accompanied by a formal certification of acknowledgment as specified in § 501103(b)(2), Guam Administrative Rules and Regulations.

(c) The trust fund, when established, must be funded for the full required amount of coverage, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining required coverage.

(d) If the value of the trust fund is greater than the required amount of coverage, the owner or operator may submit a written request to the Administrator for release of the excess.

(e) If other financial assurance as specified in this subchapter is substituted for all or part of the trust fund, the owner or operator may submit a written request to the Administrator for release of the excess.

(f) Within sixty days after receiving a request from the owner or operator for release of funds as specified in subsection (d) or (e), the Administrator will instruct the trustee to release to the owner or operator such funds as the Administrator specifies in writing.

§ 501103. Standby Trust Fund.

a) An owner or operator using any one of the mechanisms

authorized by §§ 50196, 50198, or 50199, Guam Administrative Rules and Regulations must establish a standby trust fund when the mechanism is acquired. The trustee of the standby trust fund must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal agency or an agency of the state in which the fund is established.

(b)(l) The standby trust agreement, or trust agreement, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

TRUST AGREEMENT

Trust agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator], a [name of state] [insert: "corporation", "partnership", "association", or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert: "Incorporated in the State of __" or "a national bank"], the "Trustee".

Whereas, Guam Environmental Protection Agency has established certain regulations applicable to the Grantor, requiring that an owner or operator of an underground storage tank shall provide assurance that funds will be available when needed for corrective action and third-party compensation for bodily injury and property damage caused by sudden and nonsudden accidental releases arising from the operation of the underground storage tank. The attached Schedule A lists the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located that are covered by the [insert "standby" where trust agreement is standby trust agreement] trust agreement;

[Whereas, the Grantor has elected to establish [insert either "a guarantee", "surety bond", or "letter of credit"] to provide all or part of such financial assurance for the

underground storage tanks identified herein and is required to establish a standby trust fund able to accept payments from the instrument (This paragraph is only applicable to the standby trust agreement.)];

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee;

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of the Financial Assurance Mechanism. This Agreement pertains to the [identify the financial assurance mechanism, either a guarantee, surety bond, or letter of credit, from which the standby trust fund is established to receive payments (This paragraph is only applicable to the standby trust agreement.)].

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, the "Fund," for the benefit of Guam Environmental Protection Agency. The Grantor and the Trustee intend that no third party have access to the Fund except as herein provided. [The Fund is established initially as a standby to receive payments and shall not consist of any property.] Payments made by the provider of financial assurance pursuant to the Administrator of Guam Environmental Protection Agency's instruction are transferred to the Trustee and are referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the

Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor as provider of financial assurance, any payments necessary to discharge any liability of the Grantor established by Guam Environmental Protection Agency.

Section 4. Payment for ["Corrective Action" or "Third-Party Liability Claims" or both]. The Trustee shall make payments from the Fund as the Administrator of Guam Environmental Protection Agency shall direct, in writing, to provide for the payment of the costs of [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] arising from operating the tanks covered by the financial assurance mechanism identified in this Agreement.

The Fund may not be drawn upon to cover any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193 Guam Administrative Rules and Regulations.

The Trustee shall reimburse the Grantor, or other persons as specified by the Administrator of Guam Environmental Protection Agency, from the Fund for corrective action expenditures and/or third-party liability claims, in such amounts as the director shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the Administrator specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of cash and securities acceptable to the Trustee.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his or her duties with respect to the trust fund solely in the interest of the beneficiaries and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(i) Securities or other obligations of the Grantor, or any other owner or operator of the tanks, or any of their

affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2(a), shall not be acquired or held, unless they are securities or other obligations of the federal or a state government;

(ii) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the federal or state government; and

(iii) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase

money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the federal or state government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by

the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any questions arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 11. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 12. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in writing sent to the Grantor and the present Trustee by certified mail ten days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

Section 13. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Schedule B or such other designees as the Grantor may designate by amendment to Schedule B. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the Administrator of Guam Environmental Protection Agency to the Trustee shall be in writing, signed by the Administrator, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the Administrator hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or the Administrator of Guam Environmental Protection Agency, except as provided for herein.

Section 14. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor and the Trustee, or by the Trustee and the Administrator of Guam Environmental Protection Agency if the Grantor ceases to exist.

Section 15. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 14, this Trust shall be irrevocable and shall continue until terminated at the written direction of the Grantor and the Trustee, or by the Trustee and the Administrator of Guam Environmental Protection Agency, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

Section 16. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the Administrator of Guam Environmental Protection Agency issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 17. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of Guam or the Comptroller of the Currency in the case of National Association banks.

Section 18. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

In Witness whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals (if applicable) to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in § 501103(b)(1), Guam Administrative Rules and Regulations, as such regulations were constituted on the date written above.

[Signature of Grantor]
[Name of the Grantor]
[Title]

Attest:
[Signature of Trustee]
[Name of the Trustee]
[Title]
[Seal]

[Signature of Witness]
[Name of the Witness]
[Title]
[Seal]

(2) The standby trust agreement, or trust agreement, must be accompanied by a formal certification of acknowledgment similar to the following:

State of ___
County of ___

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation; and that she/he signed her/his name thereto by like order.

[Signature of Notary Public]
[Name of Notary Public]

(c) The Administrator will instruct the trustee to refund the balance of the standby trust fund to the provider of financial assurance if the Administrator determines that no additional corrective action costs or

third-party liability claims will occur as a result of a release covered by the financial assurance mechanism for which the standby trust fund was established.

(d) An owner or operator may establish one trust fund as the depository mechanism for all funds assured in compliance with this rule.

§ 501104. Local Government Bond Rating Test.

(a) A general purpose local government owner or operator and/or local government serving as a guarantor may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by having a currently outstanding issue or issues of general obligation bonds of $1,000,000 or more, excluding refunded obligations, with a Moody's rating of Aaa, Aa, A, or Baa, or a Standard & Poor's rating of AAA, AA, A, or BBB. Where a local government has multiple outstanding issues, or where a local government's bonds are rated by both Moody's and Standard and Poor's, the lowest rating must be used to determine eligibility. Bonds that are backed by credit enhancement other than municipal bond insurance may not be considered in determining the amount of applicable bonds outstanding.

(b) A local government owner or operator or local government serving as a guarantor that is not a general-purpose local government and does not have the legal authority to issue general obligation bonds may satisfy the requirements of § 50193, Guam Administrative Rules and Regulation by having a currently outstanding issue or issues of revenue bonds of $1,000,000 or more, excluding refunded issues and by also having a Moody's rating of Aaa, Aa, A, or Baa, or a Standard & Poor's rating of AAA, AA, A or BBB as the lowest rating for any rated revenue bond issued by the local government. Where bonds are rated by both Moody's and Standard & Poor's, the lower rating for each bond must be used to determine eligibility. Bonds that are backed by credit enhancement may not be considered in determining the amount of applicable bonds outstanding.

(c) The local government owner or operator and/or guarantor must maintain a copy of its bond rating published within the last twelve

months by Moody's or Standard & Poor's.

(d) To demonstrate that it meets the local government bond rating test, the chief financial officer of a general purpose local government owner or operator and/or guarantor must sign a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM THE CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of local government owner or operator, or guarantor]. This letter is in support of the use of the bond rating test to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s).

Underground storage tanks at the following facilities are assured by this bond rating test: [List for each facility: the name and address of the facility where tanks are assured by the bond rating test].

The details of the issue date, maturity, outstanding amount, bond rating, and bond rating agency of all outstanding bond issues that are being used by [name of local government owner or operator, or guarantor] to demonstrate financial responsibility are as follows: [complete table]

Issue Date	Maturity Date	Outstanding Amount	Bond Rating	Rating Agency*

*[Moody's or Standard & Poor's]

The total outstanding obligation of [insert amount], excluding

refunded bond issues, exceeds the minimum amount of $1,000,000. All outstanding general obligation bonds issued by this government that have been rated by Moody's or Standard & Poor's are rated as at least investment grade (Moody's Baa or Standard & Poor's BBB) based on the most recent ratings published within the last twelve months. Neither rating service has provided notification within the last twelve months of downgrading of bond ratings below investment grade or of withdrawal of bond rating other than for repayment of outstanding bond issues.

I hereby certify that the wording of this letter is identical to the wording specified in § 501104(d), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Date]
[Signature]
[Name]
[Title]

(e) To demonstrate that it meets the local government bond rating test, the chief financial officer of local government owner or operator and/or guarantor other than a general purpose government must sign a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM THE CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of local government owner or operator, or guarantor]. This letter is in support of the use of the bond rating test to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an)

underground storage tank(s). This local government is not organized to provide general governmental services and does not have the legal authority under state law or constitutional provisions to issue general obligation debt.

Underground storage tanks at the following facilities are assured by this bond rating test: [List for each facility: the name and address of the facility where tanks are assured by the bond rating test.]

The details of the issue date, maturity, outstanding amount, bond rating, and bond rating agency of all outstanding revenue bond issues that are being used by [name of local government owner or operator, or guarantor] to demonstrate financial responsibility are as follows: [complete table]

Issue Date	Maturity Date	Outstanding Amount	Bond Rating	Rating Agency*

*[Moody's or Standard & Poor's]

The total outstanding obligation of [insert amount], excluding refunded bond issues, exceeds the minimum amount of $1,000,000. All outstanding revenue bonds issued by this government that have been rated by Moody's or Standard & Poor's are rated as at least investment grade (Moody's Baa or Standard & Poor's BBB) based on the most recent ratings published within the last twelve months. The revenue bonds listed are not backed by third-party credit enhancement or insured by a municipal bond insurance company. Neither rating service has provided notification within the last twelve months of downgrading of bond ratings below investment grade or of withdrawal of bond rating other than for repayment of outstanding bond issues.

I hereby certify that the wording of this letter is identical to the wording specified in § 501104 (e), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Date]
[Signature]
[Name]
[Title]

(f) The director may require reports of financial condition at any time from the local government owner or operator and/or local government guarantor. If the Administrator finds, on the basis of such reports or other information, that the local government owner or operator and/or guarantor no longer meets the local government bond rating test requirements of this section, the local government owner or operator must obtain alternative coverage within thirty days after notification of such a finding.

(g) If a local government owner or operator using the bond rating test to provide financial assurance finds that it no longer meets the bond rating test requirements, the local government owner or operator must obtain alternative coverage within one hundred fifty days of the change in status.

(h) If the local government owner or operator fails to obtain alternate assurance within one hundred fifty days of finding that it no longer meets the requirements of the bond rating test or within thirty days of notification by the Administrator that it no longer meets the requirements of the bond rating test, the owner or operator must notify the Administrator of such failure within ten days.

§ 501105. Local Government Financial Test.

(a) A local government owner or operator may satisfy the requirements of § 50193 by passing the financial test specified in this section. To be eligible to use the financial test, the local government owner or operator must have the ability and authority to assess and levy taxes or to freely establish fees and charges. To pass the local government financial test, the owner or operator must meet the criteria of subsection (b)(2) and (3) based on year-end financial statements for the latest

completed fiscal year.

(b) (1) The local government owner or operator must have the following information available, as shown in the year-end financial statements for the latest completed fiscal year:

(A) Total Revenues: Consists of the sum of general fund operating and non-operating revenues including net local taxes, licenses and permits, fines and forfeitures, revenues from use of money and property, charges for services, investment earnings, sales (property, publications, etc.), intergovernmental revenues (restricted and unrestricted), and total revenues from all other governmental funds including enterprise, debt service, capital projects, and special revenues, but excluding revenues to funds held in a trust or agency capacity. For purposes of this test, the calculation of total revenues shall exclude all transfers between funds under the direct control of the local government using the financial test (interfund transfers), liquidation of investments, and issuance of debt.

(B) Total Expenditures: Consists of the sum of general fund operating and non-operating expenditures including public safety, public utilities, transportation, public works, environmental protection, cultural and recreational, community development, revenue sharing, employee benefits and compensation, office management, planning and zoning, capital projects, interest payments on debt, payments for retirement of debt principal, and total expenditures from all other governmental funds including enterprise, debt service, capital projects, and special revenues. For purposes of this test, the calculation of total expenditures shall exclude all transfers between funds under the direct control of the local government using the financial test

(interfund transfers).

(C) Local Revenues: Consists of total revenues (as defined in subparagraph (A)) minus the sum of all transfers from other governmental entities, including all monies received from federal, state, or local government sources.

(D) Debt Service: Consists of the sum of all interest and principal payments on all long-term credit obligations and all interest-bearing short-term credit obligations. Includes interest and principal payments on general obligation bonds, revenue bonds, notes, mortgages, judgments, and interest-bearing warrants. Excludes payments on non-interest-bearing short-term obligations, interfund obligations, amounts owed in a trust or agency capacity, and advances and contingent loans from other governments.

(E) Total Funds: Consists of the sum of cash and investment securities from all funds, including general, enterprise, debt service, capital projects, and special revenue funds, but excluding employee retirement funds, at the end of the local government's financial reporting year. Includes federal securities, federal agency securities, state and local government securities, and other securities such as bonds, notes and mortgages. For purposes of this test, the calculation of total funds shall exclude agency funds, private trust funds, accounts receivable, value of real property, and other non-security assets.

(F) Population consists of the number of people in the area served by the local government.

(2) The local government's year-end financial statements, if independently audited, cannot include an adverse auditor's opinion or a disclaimer of opinion. The local government cannot have outstanding issues of general obligation or revenue bonds that are rated as less than investment grade.

(3) The local government owner or operator must have a letter signed by the chief financial officer worded as specified in subsection (c).

(c) To demonstrate that it meets the financial test under subsection (b), the chief financial officer of the local government owner or operator, must sign, within one hundred twenty days of the close of each financial reporting year, as defined by the twelve-month period for which financial statements used to support the financial test are prepared, a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of the owner or operator]. This letter is in support of the use of the local government financial test to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating [an] underground storage tank[s].

Underground storage tanks at the following facilities are assured by this financial test [List for each facility: the name and address of the facility where tanks assured by this financial test are located. If separate mechanisms or combinations of mechanisms are being used to assure any of the tanks at this facility, list each tank assured by this financial test by the tank identification number provided in the notification submitted pursuant to 10 GCA Chapter 76, 40 C.F.R. section 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations.

This owner or operator has not received an adverse opinion, or a disclaimer of opinion from an independent auditor on its financial statements for the latest completed fiscal year. Any outstanding issues of general obligation or revenue bonds, if rated, have a Moody's rating of

Aaa, Aa, A, or Baa or a Standard and Poor's rating of AAA, AA, A, or BBB; if rated by both firms, the bonds have a Moody's rating of Aaa, Aa, A or Baa and a Standard and Poor's rating of AAA, AA, A, or BBB.

WORKSHEET FOR MUNICIPAL FINANCIAL TEST

PART I: BASIC INFORMATION

1. Total Revenues
    a. Revenues (dollars)
        Value of revenues excludes liquidation of investments and issuance of debt. Value includes all general fund operating and non-operating revenues, as well as all revenues from all other governmental funds including enterprise, debt service, capital projects, and special revenues, but excluding revenues to funds held in a trust or agency capacity.
    b. Subtract interfund transfers (dollars)
    c. Total Revenues (dollars)
2. Total Expenditures
    a. Expenditures (dollars)
        Value consists of the sum of general fund operating and non-operating expenditures including interest payments on debt, payments for retirement of debt principal, and total expenditures from all other governmental funds including enterprise, debt service, capital projects, and special revenues.
    b. Subtract interfund transfers (dollars)
    c. Total Expenditures (dollars)
3. Local Revenues
    a. Total Revenues (from 1c) (dollars)
    b. Subtract total intergovernmental transfers (dollars)
    c. Local Revenues (dollars)
4. Debt Service
    a. Interest and fiscal charges (dollars)

b. Add debt retirement (dollars)
c. Total Debt Service (dollars)

5. Total Funds (Dollars)
(Sum of amounts held as cash and investment securities from all funds, excluding amounts held for employee retirement funds, agency funds, and trust funds)

6. Population (Persons)

PART II: APPLICATION OF TEST

7. Total Revenues to Population
   a. Total Revenues (from 1c)
   b. Population (from 6)
   c. Divide 7a by 7b
   d. Subtract 417
   e. Divide by 5,212
   f. Multiply by 4.095
8. Total Expenses to Population
   a. Total Expenses (from 2c)
   b. Population (from 6)
   c. Divide 8a by 8b
   d. Subtract 524
   e. Divide by 5,401
   f. Multiply by 4.095
9. Local Revenues to Total Revenues
   a. Local Revenues (from 3c)
   b. Total Revenues (from 1c)
   c. Divide 9a by 9b
   d. Subtract 0.695
   e. Divide by 0.205
   f. Multiply by 2.840
10. Debt Service to Population
   a. Debt Service (from 4c)
   b. Population (from 6)
   c. Divide 10a by 10b

d. Subtract 51
e. Divide by 1,038
f. Multiply by -1.866

11. Debt Service to Total Revenues
    a. Debt Service (from 4c)
    b. Total Revenues (from 1c)
    c. Divide 11a by 11b
    d. Subtract 0.068
    e. Divide by 0.259
    f. Multiply by -3.533
12. Total Revenues to Total Expenses
    a. Total Revenues (from 1c)
    b. Total Expenses (from 2c)
    c. Divide 12a by 12b
    d. Subtract 0.910
    e. Divide by 0.899
    f. Multiply by 3.458
13. Funds Balance to Total Revenues
    a. Total Funds (from 5)
    b. Total Revenues (from 1c)
    c. Divide 13a by 13b
    d. Subtract 0.891
    e. Divide by 9.156
    f. Multiply by 3.270
14. Funds Balance to Total Expenses
    a. Total Funds (from 5)
    b. Total Expenses (from 2c)
    c. Divide 14a by 14b
    d. Subtract 0.866
    e. Divide by 6.409
    f. Multiply by 3.270
15. Total Funds to Population
    a. Total Funds (from 5)
    b. Population (from 6)
    c. Divide 15a by 15b

d. Subtract 270
e. Divide by 4,548
f. Multiply by 1.866

16. Add 7f+8f+9f+10f+11f+12f+13f+14f+15f+4.937

I hereby certify that the financial index shown on line 16 of the worksheet is greater than zero and that the wording of this letter is identical to the wording specified in § 501105(c), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Date]
[Signature]
[Name]
[Title]

(d) If a local government owner or operator using the test to provide financial assurance finds that it no longer meets the requirements of the financial test based on the year-end financial statements, the owner or operator must obtain alternative coverage within one hundred fifty days of the end of the year for which financial statements have been prepared.

(e) The Administrator may require reports of financial condition at any time from the local government owner or operator. If the director finds, on the basis of such reports or other information, that the local government owner or operator no longer meets the financial test requirements of subsections (b) and (c), the owner or operator must obtain alternate coverage within thirty days after notification of such a finding.

(f) If the local government owner or operator fails to obtain alternate assurance within one hundred fifty days of finding that it no longer meets the requirements of the financial test based on the year-end financial statements or within thirty days of notification by the Administrator that it no longer meets the requirements of the financial test, the owner or operator must notify the Administrator of such failure within ten days.

§ 501106. Local Government Guarantee.

(a) A local government owner or operator may satisfy the requirements of § 50193, by obtaining a guarantee that conforms to the requirements of this section. The guarantor must be a local government having a "substantial governmental relationship" with the owner or operator and issuing the guarantee as an act incident to that relationship. A local government acting, as the guarantor must:

(1) Demonstrate that it meets the bond rating test requirement of § 501104, and deliver a copy of the chief financial officer's letter as contained in § 591104(d) and (e), to the local government owner or operator;

(2) Demonstrate that it meets the worksheet test requirements of § 501105, and deliver a copy of the chief financial officer's letter as contained in § 501105(c), to the local government owner or operator; or

(3) Demonstrate that it meets the local government fund requirements of § 501107(1), (2), or (3), and deliver a copy of the chief financial officer's letter as contained in § 501107, to the local government owner or operator.

(b) If the local government guarantor is unable to demonstrate financial assurance under §§ 501104, 501105, or 501107(1), (2), or (3), at the end of the financial reporting year, the guarantor shall send by certified mail, before cancellation or non-renewal of the guarantee, notice to the owner or operator. The guarantee will terminate no less than one hundred twenty days after the date the owner or operator receives the notification, as evidenced by the return receipt. The owner or operator must obtain alternative coverage as specified in § 501114(e).

(c) The guarantee agreement must be worded as specified in subsection (d) or (e), depending on which of the following alternative guarantee arrangements is selected:

(1) If, in the default or incapacity of the owner or operator, the guarantor guarantees to fund a standby trust as directed by the Administrator, the guarantee shall be worded as

specified in subsection (d).

(2) If, in the default or incapacity of the owner or operator, the guarantor guarantees to make payments as directed by the director for taking corrective action or compensating third parties for bodily injury and property damage, the guarantee shall be worded as specified in subsection (e).

(d) The local government guarantee with standby trust must be worded exactly as follows, except that instructions in brackets are to be replaced with relevant information and the brackets deleted:

LOCAL GOVERNMENT GUARANTEE WITH STANDBY TRUST MADE BY A LOCAL GOVERNMENT

Guarantee made this [date] by [name of guaranteeing entity], a local government organized under the laws of Guam, herein referred to as guarantor, to the Guam Environmental Protection Agency and to any and all third parties, and obliges, on behalf of [local government owner or operator].

Recitals

(1) Guarantor meets or exceeds [select one: the local government bond rating test requirements of § 501104, Guam Administrative Rules and Regulations, the local government financial test requirements of § 501105, Guam Administrative Rules, or the local government fund under § 501107(1),(2) or (3), Guam Administrative Rules and Regulations.

(2) [Local government owner or operator] owns or operates the following underground storage tank(s) covered by this guarantee: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 10 GCA Chapter 76, 40 C.F.R. section 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and

address of the facility.] This guarantee satisfies Article 8 requirements for assuring funding for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the above-identified underground storage tank(s) in the amount of [insert dollar amount] per occurrence and [insert: dollar amount] annual aggregate.

(3) Incident to our substantial governmental relationship with [local government owner or operator], guarantor guarantees to the Guam Environmental Protection Agency and to any and all third parties that:

In the event that [local government owner or operator] fails to provide alternative coverage within sixty days after receipt of a notice of cancellation of this guarantee and the Administrator of Guam Environmental Protection Agency has determined or suspects that a release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon instructions from the director shall fund a standby trust fund in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, in an amount not to exceed the coverage limits specified above.

In the event that the Administrator determines that [local government owner or operator] has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with Article 6, the guarantor upon written instructions from the director shall fund a standby trust fund in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, in an amount not to exceed the coverage limits specified above.

If [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by ["sudden" and/or "nonsudden"] accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written instructions from the Administrator, shall fund a standby trust in

accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, to satisfy such judgment(s), award(s), or settlement agreement(s) up to the limits of coverage specified above.

(4) Guarantor agrees that, if at the end of any fiscal year before cancellation of this guarantee, the guarantor fails to meet or exceed the requirements of the financial responsibility mechanism specified in paragraph (1), guarantor shall send within one hundred twenty days of such failure, by certified mail, notice to [local government owner or operator], as evidenced by the return receipt.

(5) Guarantor agrees to notify [owner or operator] by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code naming guarantor as debtor, within ten days after commencement of the proceeding.

(6) Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of [owner or operator] pursuant to Article 1.

(7) Guarantor agrees to remain bound under this guarantee for so long as [local government owner or operator] must comply with the applicable financial responsibility requirements of Article 8, for the above identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to [owner or operator], such cancellation to become effective no earlier than one hundred twenty days after receipt of such notice by [owner or operator], as evidenced by the return receipt.

(8) The guarantor's obligation does not apply to any of the following:

(a) Any obligation of [local government owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert: local government owner or operator] arising from, and in the course of, employment by [insert: local government owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the

care, custody, or control of, or occupied by [insert: local government owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily damage or property damage for which [insert: owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

(9) Guarantor expressly waives notice of acceptance of this guarantee by the Guam Environmental Protection Agency, by any or all third parties, or by [local government owner or operator].

I hereby certify that the wording of this guarantee is identical to the wording specified in § 501106(d), Guam Administrative Rules and Regulations, as such regulations were constituted on the effective date shown immediately below.

Effective date:
[Name of guarantor]
[Authorized signature for guarantor]
[Name of person signing]
[Title of person signing]
Signature of witness or notary:

(e) The local government guarantee without standby trust must be worded exactly as follows, except that instructions in brackets are to be replaced with relevant information and the brackets deleted:

LOCAL GOVERNMENT GUARANTEE WITHOUT STANDBY TRUST MADE BY A LOCAL GOVERNMENT

Guarantee made this [date] by [name of guaranteeing entity], a local government organized under the laws of Guam, herein referred to as guarantor, to the Guam Environmental Protection Agency and to any and all third parties, and obliges, on behalf of [local government owner or operator].

Recitals

(1) Guarantor meets or exceeds [select one: the local government bond rating test requirements of § 501104, Guam Administrative Rules and Regulations, the local government financial test requirements of § 501105, Guam Administrative Rules and Regulations, or the local government fund under § 501107(1),(2) or (3), Guam Administrative Rules and Regulations.

(2) [Local government owner or operator] owns or operates the following underground storage tank(s) covered by this guarantee: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 10 GCA Chapter 76, 40 C.F.R. section 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility.] This guarantee satisfies Article 8, requirements for assuring funding for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the above-identified underground storage tank(s) in the amount of [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate.

(3) Incident to our substantial governmental relationship with [local government owner or operator], guarantor guarantees to the Guam Environmental Protection Agency and to any and all third parties and obliges that:

In the event that [local government owner or operator] fails to provide alternative coverage within sixty days after receipt of a notice of cancellation of this guarantee and the Administrator of Guam Environmental Protection Agency has determined or suspects that a

release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon written instructions from the Administrator shall make funds available to pay for corrective actions and compensate third parties for bodily injury and property damage in an amount not to exceed the coverage limits specified above.

In the event that the Administrator determines that [local government owner or operator] has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with Article 6, the guarantor upon written instructions from the director shall make funds available to pay for corrective actions in an amount not to exceed the coverage limits specified above.

If [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by ["sudden" and/or "nonsudden"] accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written instructions from the director, shall make funds available to compensate third parties for bodily injury and property damage in an amount not to exceed the coverage limits specified above.

(4) Guarantor agrees that if at the end of any fiscal year before cancellation of this guarantee, the guarantor fails to meet or exceed the requirements of the financial responsibility mechanism specified in paragraph (1), guarantor shall send within one hundred twenty days of such failure, by certified mail, notice to [local government owner or operator], as evidenced by the return receipt.

(5) Guarantor agrees to notify [owner or operator] by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code naming guarantor as debtor, within ten days after commencement of the proceeding.

(6) Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of [owner or operator] pursuant to Chapter 50, Guam Administrative Rules and Regulations.

(7) Guarantor agrees to remain bound under this guarantee for

so long as [local government owner or operator] must comply with the applicable financial responsibility requirements of Article 8, for the above identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to [owner or operator], such cancellation to become effective no earlier than one hundred twenty days after receipt of such notice by [owner or operator], as evidenced by the return receipt. If notified of a probable release, the guarantor agrees to remain bound to the terms of this guarantee for all charges arising from the release, up to the coverage limits specified above, notwithstanding the cancellation of the guarantee with respect to future releases.

(8) The guarantor's obligation does not apply to any of the following:

(a) Any obligation of [local government owner or operator] under a workers' compensation disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert: local government owner or operator] arising from and in the course of, employment by [insert: local government owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert: local government owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily damage or property damage for which [insert: owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

(9) Guarantor expressly waives notice of acceptance of this guarantee by the Guam Environmental Protection Agency, by any or all third parties, or by [local government owner or operator].

I hereby certify that the wording of this guarantee is identical to the wording specified in § 501106(e), Guam Administrative Rules and

Regulations, as such regulations were constituted on the effective date shown immediately below.

Effective date:
[Name of guarantor]
[Authorized signature for guarantor]
[Name of person signing]
[Title of person signing]
Signature of witness or notary:

§ 501107. Local Government Fund.

A local government owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by establishing a dedicated fund account that conforms to the requirements of this section. Except as specified in paragraph (2), a dedicated fund may not be commingled with other funds or otherwise used in normal operations. A dedicated fund will be considered eligible if it meets one of the following requirements:

(1) The fund is dedicated by state constitutional provision, or local government statute, charter, ordinance, or order to pay for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks or tank systems and is funded for the full amount of coverage required under § 50193, Guam Administrative Rules and Regulations, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage; or

(2) The fund is dedicated by state constitutional provision, or local government statute, charter, ordinance, or order as a contingency fund for general emergencies, including taking corrective action and compensating third parties for bodily injury and property damage caused by accidental releases

arising from the operation of petroleum underground storage tanks or tank systems, and is funded for five times the full amount of coverage required under § 50193, Guam Administrative Rules and Regulations, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage. If the fund is funded for less than five times the amount of coverage required under § 50193, Guam Administrative Rules and Regulations, the amount of financial responsibility demonstrated by the fund may not exceed one-fifth the amount in the fund; or

(3) The fund is dedicated by state constitutional provision, or local government statute, charter, ordinance or order to pay for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks or tank systems. A payment is made to the fund once every year for seven years until the fund is fully-funded. This seven-year period is hereafter referred to as the "pay-in-period". The amount of each payment must be determined by this formula:

$$\frac{TF - CF}{Y}$$

Where TF is the total required financial assurance for the owner or operator, CF is the current amount in the fund, and Y is the number of years remaining in the pay-in-period, and;

(A) The local government owner or operator has available bonding authority, approved through voter referendum (if such approval is necessary prior to the issuance of bonds), for an amount equal to the difference between the required amount of coverage and the amount held in the dedicated fund. This bonding authority shall be available for taking corrective action and for compensating third parties

for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks or tank systems, or

(B) The local government owner or operator has a letter signed by the appropriate state attorney general stating that the use of the bonding authority will not increase the local government's debt beyond the legal debt ceilings established by the relevant state laws. The letter must also state that prior voter approval is not necessary before use of the bonding authority.

(4) To demonstrate that it meets the requirements of the local government fund, the chief financial officer of the local government owner or operator and/or guarantor must sign a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of local government owner or operator, or guarantor.] This letter is in support of the use of the local government fund mechanism to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s).

Underground storage tanks at the following facilities are assured by this local government fund mechanism: [List for each facility: the name and address of the facility where tanks are assured by the local government fund].

[Insert: "The local government fund is funded for the full amount of coverage required under section § 50193, Guam Administrative Rules and Regulations, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage." or "The local government fund is funded for five times the full amount of coverage required under § 50193, Guam Administrative Rules and Regulations, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage." or "A payment is made to the fund once every year for seven years until the fund is fully-funded and [name of local government owner or operator] has available bonding authority, approved through voter referendum, of an amount equal to the difference between the required amount of coverage and the amount held in the dedicated fund" or "A payment is made to the fund once every year for seven years until the fund is fully-funded and I have attached a letter signed by the State Attorney General stating that (1) the use of the bonding authority will not increase the local government's debt beyond the legal debt ceilings established by the relevant state laws and (2) that prior voter approval is not necessary before use of the bonding authority"].

The details of the local government fund are as follows:

Amount in Fund (market value of fund at close of last fiscal year):

[If fund balance is incrementally funded as specified in § 501107(3), Guam Administrative Rules and Regulations, insert:

Amount added to fund in the most recently completed fiscal year:

Number of years remaining in the pay-in period:]

A copy of the state constitutional provision, or local

government statute, charter, ordinance or order dedicating the fund is attached.

I hereby certify that the wording of this letter is identical to the wording specified in § 501107(4), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Date]
[Signature]
[Name]
[Title]

§ 501108. Substitution of Financial Assurance Mechanisms by Owner or operator.

(a) An owner or operator may substitute any alternate financial assurance mechanisms as specified in this subchapter, provided that at all times the owner or operator maintains an effective financial assurance mechanism or combination of mechanisms that satisfies the requirements of § 50193, Guam Administrative Rules and Regulations.

(b) After obtaining alternate financial assurance as specified in this Article, an owner or operator may cancel a financial assurance mechanism by providing notice to the provider of financial assurance.

§ 501109. Cancellation or Non-renewal by a Provider of Financial Assurance.

(a) Except as otherwise provided, a provider of financial assurance may cancel or fail to renew an assurance mechanism by sending a notice of termination by certified mail to the owner or operator.

(1) Termination of a local government guarantee, a guarantee, a surety bond, or a letter of credit may not occur until one hundred twenty days after the date on which the owner or operator receives the notice of termination, as evidenced by

the return receipt.

(2) Termination of insurance or risk retention coverage, except for non-payment or misrepresentation by the insured, may not occur until sixty days after the date on which the owner or operator receives the notice of termination, as evidenced by the return receipt. Termination for non-payment of premium or misrepresentation by the insured may not occur until a minimum of ten days after the date on which the owner or operator receives the notice of termination, as evidenced by the return receipt.

(b) If a provider of financial responsibility cancels or fails to renew for reasons other than incapacity of the provider as specified in § 501114, Guam Administrative Rules and Regulations, the owner or operator must obtain alternate coverage as specified in this Article within sixty days after receipt of the notice of termination. If the owner or operator fails to obtain alternate coverage within sixty days after receipt of the notice of termination, the owner or operator must notify the Administrator of such failure and submit:

(1) The name and address of the provider of financial assurance;

(2) The effective date of termination; and

(3) The evidence of the financial assurance mechanism subject to the termination maintained in accordance with § 501111(b), Guam Administrative Rules and Regulations.

§ 501110. Reporting by Owner or Operator.

(a) An owner or operator must submit the appropriate forms listed in § 501111(b), Guam Administrative Rules and Regulations documenting current evidence of financial responsibility to the director:

(1) Within thirty days after the owner or operator identifies a release from an underground storage tank or tank system required to be reported under §§ 50153 or 50161, Guam Administrative Rules and Regulations;

(2) If the owner or operator fails to obtain alternate coverage as required by this subchapter, within thirty days after the

owner or operator receives notice of:

(A) Commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a provider of financial assurance as a debtor;

(B) Suspension or revocation of the authority of a provider of financial assurance to issue a financial assurance mechanism;

(C) Failure of a guarantor to meet the requirements of the financial test; or

(D) Other incapacity of a provider of financial assurance; or

(3) As required by §§ 50195(g) and 501109(b).

(b) An owner or operator must certify compliance with the financial responsibility requirements of this subchapter as specified in the notification form submitted pursuant to 10 GCA Chapter 76, § 50134, Guam Administrative Rules and Regulations, or the permit applications under §§ 501324 and 501326, Guam Administrative Rules and Regulations.

(c) The Administrator may require an owner or operator to submit evidence of financial assurance as described in § 501111(b), Guam Administrative Rules and Regulations or other information relevant to compliance with this Article at any time.

§ 501111. Record Keeping.

(a) Owners or operators must maintain evidence of all financial assurance mechanisms used to demonstrate financial responsibility under this subchapter for an underground storage tank or tank system until released from the requirements of this Article under § 501113, Guam Administrative Rules and Regulations. An owner or operator must maintain such evidence at the underground storage tank or tank system site or the owner's or operator's place of work. Records maintained off-site must be made available upon request of the director.

(b) An owner or operator must maintain the following types of

evidence of financial responsibility:

(1) An owner or operator using an assurance mechanism specified in §§ 50195 to 50199 or § 501102 or §§ 501104 to 501107, Guam Administrative Rules and Regulations must maintain a copy of the instrument worded as specified.

(2) An owner or operator using a financial test or guarantee, or a local government financial test or a local government guarantee supported by the local government financial test must maintain a copy of the chief financial officer's letter based on year-end financial statements for the most recent completed financial reporting year. Such evidence must be on file no later than one hundred twenty days after the close of the financial reporting year.

(3) An owner or operator using a guarantee, surety bond, or letter of credit must maintain a copy of the signed standby trust fund agreement and copies of any amendments to the agreement.

(4) A local government owner or operator using a local government guarantee under § 501106(d), Guam Administrative Rules and Regulations must maintain a copy of the signed standby trust fund agreement and copies of any amendments to the agreement.

(5) A local government owner or operator using the local government bond rating test under § 501104, Guam Administrative Rules and Regulations must maintain a copy of its bond rating published within the last twelve months by Moody's or Standard & Poor's.

(6) A local government owner or operator using the local government guarantee under § 501106, Guam Administrative Rules and Regulations, where the guarantor's demonstration of financial responsibility relies on the bond rating test under § 501104, Guam Administrative Rules and Regulations must maintain a copy of the guarantor's bond rating published within the last twelve months by Moody's or Standard & Poor's.

(7) An owner or operator using an insurance policy or risk retention group coverage must maintain a copy of the signed insurance policy or risk retention group coverage policy, with the endorsement or certificate of insurance and any amendments to the agreements.

(8) An owner or operator using a local government fund under § 501107, Guam Administrative Rules and Regulations must maintain the following documents:

(A) A copy of the state constitutional provision or local government statute, charter, ordinance, or order dedicating the fund;

(B) Year-end financial statements for the most recent completed financial reporting year showing the amount in the fund. If the fund is established under § 501107(3), Guam Administrative Rules and Regulations using incremental funding backed by bonding authority, the financial statements must show the previous year's balance, the amount of funding during the year, and the closing balance in the fund; and

(C) If the fund is established under § 501107(3), Guam Administrative Rules and Regulations using incremental funding backed by bonding authority, the owner or operator must also maintain documentation of the required bonding authority, including either the results of a voter referendum (under § 501107(3)(A), Guam Administrative Rules and Regulations, or attestation by the state attorney general as specified under § 501107(3)(B), Guam Administrative Rules and Regulations).

(9) A local government owner or operator using the local government guarantee supported by the local government fund must maintain a copy of the guarantor's year-end financial statements for the most recent completed financial reporting year showing the amount of the fund.

(10) (A) An owner or operator using an assurance mechanism specified in §§ 50195 to 501107, Guam Administrative Rule and Regulations must maintain an updated copy of a certification of financial responsibility worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CERTIFICATION OF FINANCIAL RESPONSIBILITY

[Owner or operator] hereby certifies that it is in compliance with the requirements of Article 8 of Chapter 50, Guam Administrative Rules and Regulations.

The financial assurance mechanism(s) used to demonstrate financial responsibility under Article 8 of Chapter 50, Guam Administrative Rules and Regulations, is (are) as follows:

[For each mechanism, list the type of mechanism, name of issuer, mechanism number (if applicable), amount of coverage, effective period of coverage and whether the mechanism covers "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases".]

[Signature of owner or operator]
[Name of owner or operator]
[Title]
[Date]
[Signature of witness or notary]
[Name of witness or notary]
[Date]

(B) The owner or operator must update this certification whenever the financial assurance mechanism(s) used to demonstrate financial responsibility change(s).

§ 501112. Drawing of Financial Assurance Mechanisms.

(a) Except as specified in subsection (d), the Administrator shall require the guarantor, surety, or institution issuing a letter of credit to place the amount of funds stipulated by the Administrator, up to the limit of funds provided by the financial assurance mechanism, into the standby trust if:

(1) (A) The owner or operator fails to establish alternate financial assurance within sixty days after receiving notice of cancellation of the guarantee, surety bond, letter of credit, or, as applicable, other financial assurance mechanism; and

(B) The Administrator determines or suspects that a release from an underground storage tank or tank system covered by the mechanism has occurred and so notifies the owner or operator or the owner or operator has notified the Administrator pursuant to Articles 5 or 6 of a release from an underground storage tank or tank system covered by the mechanism; or

(2) The conditions of subsection (b)(1), (b)(2)(A), or (b)(2)(B) are satisfied.

(b) The Administrator may draw on a standby trust fund when:

(1) The Administrator makes a final determination that a release has occurred and immediate or long-term corrective action for the release is needed, and the owner or operator, after appropriate notice and opportunity to comply, has not conducted release response action as required under Article 6; or

(2) The Administrator has received either:

(A) Certification from the owner or operator and the

third-party liability claimant(s) and from attorneys representing the owner or operator and the third-party liability claimant(s) that a third-party liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CERTIFICATION OF A VALID CLAIM

The undersigned, as principals and as legal representatives of [insert: owner or operator] and [insert: name and address of third-party claimant], hereby certify that the claim of bodily injury [and/or] property damage caused by an accidental release arising from operating [owner's or operator's] underground storage tank should be paid in the amount of $[___].

[Signatures]
Owner or Operator
Attorney for Owner or Operator
(Notary)
Date
[Signatures]
Claimant(s)
Attorney(s) for Claimant(s)
(Notary)
Date

or;

(B) A valid final court order establishing a judgment against the owner or operator for bodily injury or property damage caused by an accidental release from an underground storage tank or tank system

covered by financial assurance under this subchapter and the director determines that the owner or operator has not satisfied the judgment.

(c) If the Administrator determines that the amount of corrective action costs and third-party liability claims eligible for payment under subsection (b) may exceed the balance of the standby trust fund and the obligation of the provider of financial assurance, the first priority for payment shall be corrective action costs necessary to protect human health and the environment. The Administrator shall pay third-party liability claims in the order in which the director receives certifications under subsection (b)(2)(A), and valid court orders under subsection (b)(2)(B).

(d) A governmental entity acting as guarantor under § 501106(e), Guam Administrative Rules and Regulations, the local government guarantee without standby trust, shall make payments as directed by the Administrator under the circumstances described in subsections (a), (b), and (c).

§ 501113. Release from the Requirements.

An owner or operator is no longer required to maintain financial responsibility under this subchapter for an underground storage tank or tank system after the tank or tank system has been permanently closed or undergoes a change-in-service or, if release response action is required, after release response action has been completed and the tank or tank system has been permanently closed or undergoes a change-in-service as required by Article 7.

§ 501114. Bankruptcy or Other Incapacity of Owner or Operator or Provider of Financial Assurance.

(a) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming an owner or operator as debtor, the owner or operator must notify the director by certified mail of such commencement and submit the

appropriate forms listed in § 501111(b), Guam Administrative Rules and Regulations documenting current financial responsibility.

(b) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a guarantor providing financial assurance as debtor, such guarantor must notify the owner or operator by certified mail of such commencement as required under the terms of the guarantee specified in § 50196, Guam Administrative Rules and Regulations.

(c) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a local government owner or operator as debtor, the local government owner or operator must notify the director by certified mail of such commencement and submit the appropriate forms listed in § 501111(b), Guam Administrative Rules and Regulations documenting current financial responsibility.

(d) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a guarantor providing a local government financial assurance as debtor, such guarantor must notify the local government owner or operator by certified mail of such commencement as required under the terms of the guarantee specified in § 501106, Guam Administrative Rules and Regulations.

(e) An owner or operator who obtains financial assurance by a mechanism other than the financial test of self-insurance will be deemed to be without the required financial assurance in the event of a bankruptcy or incapacity of its provider of financial assurance, or a suspension or revocation of the authority of the provider of financial assurance to issue a guarantee, insurance policy, risk retention group coverage policy, surety bond, or letter of credit. The owner or operator must obtain alternate financial assurance as specified in this Article within thirty days after receiving notice of such an event. If the owner or operator does not obtain alternate coverage within thirty days after such notification, the owner or operator must notify the Administrator.

§ 501115. Replenishment of Guarantee, Letters of Credit, or Surety

Bond.

(a) If at any time after a standby trust is funded upon the instruction of the Administrator with funds drawn from a guarantee, local government guarantee with standby trust, letter of credit, or surety bond, and the amount in the standby trust is reduced below the full amount of coverage required, the owner or operator shall by the anniversary date of the financial mechanism from which the funds were drawn:

(1) Replenish the value of financial assurance to equal the full amount of coverage required; or

(2) Acquire another financial assurance mechanism for the amount by which funds in the standby trust have been reduced.

(b) For purposes of this section, the full amount of coverage required is the amount of coverage to be provided by § 50193, Guam Administrative Rule and Regulations. If a combination of mechanisms was used to provide the assurance funds, which were drawn upon, replenishment shall occur by the earliest anniversary date among the mechanisms.

§ 501116 to § 501199. [Reserved.]

ARTICLE 9
LENDER LIABILITY

§ 501200. Definitions
§ 501201 to § 501209. [Reserved.]
§ 501210. Participation in Management
§ 501211 to § 501219. [Reserved.]
§ 501220. Ownership of an Underground Storage Tank or Underground Storage Tank System or Facility or Property on which an Underground Storage Tank or Underground Storage Tank System is Located
§ 501221 to § 501229. [Reserved.]

§ 501230. Operating an Underground Storage Tank or Underground Storage Tank System

§ 501231 to § 501239. [Reserved.]

§ 501200. Definitions.

(a) UST technical standards, as used in this Article, refers to the UST preventative and operating requirements under Articles 2, 3, 4, 7, and 10 and § 50150, Guam Administrative Rules and Regulations.

(b) Petroleum production, refining, and marketing.

(a) (1) "Petroleum production" means the production of crude oil or other forms of petroleum (as defined in § 50112, Guam Administrative Rules and Regulations) as well as the production of petroleum products from purchased materials.

(2) "Petroleum refining" means the cracking, distillation, separation, conversion, upgrading, and finishing of refined petroleum or petroleum products.

(3) "Petroleum marketing" means the distribution, transfer, or sale of petroleum or petroleum products for wholesale or retail purposes.

(c) "Indicia of ownership" means evidence of a secured interest, evidence of an interest in a security interest, or evidence of an interest in real or personal property securing a loan or other obligation, including any legal or equitable title or deed to real or personal property acquired through or incident to foreclosure. Evidence of such interests include, but are not limited to, mortgages, deeds of trust, liens, surety bonds and guarantees of obligations, title held pursuant to a lease financing transaction in which the lessor does not select initially the leased property (hereinafter "lease financing transaction"), and legal or equitable title obtained pursuant to foreclosure. Evidence of such interests also includes assignments, pledges, or other rights to or other forms of encumbrance against property that are held primarily to protect a security interest. A person is not required to hold title or a security interest in order to maintain indicia of ownership.

(d) A "holder" is a person who, upon October 13, 2015, or in the

future, maintains indicia of ownership (as defined in subsection (c)) primarily to protect a security interest (as defined in subsection (f)(1)) in a petroleum UST or UST system or facility or property on which a petroleum UST or UST system is located. A holder includes the initial holder (such as a loan originator); any subsequent holder (such as a successor-in-interest or subsequent purchaser of the security interest on the secondary market); a guarantor of an obligation, surety, or any other person who holds ownership indicia primarily to protect a security interest; or a receiver or other person who acts on behalf or for the benefit of a holder.

(e) A "borrower, debtor, or obligor" is a person whose UST or UST system or facility or property on which the UST or UST system is located is encumbered by a security interest. These terms may be used interchangeably.

(f) "Primarily to protect a security interest" means that the holder's indicia of ownership are held primarily for the purpose of securing payment or performance of an obligation.

(1) "Security interest" means an interest in a petroleum UST or UST system or in the facility or property on which a petroleum UST or UST system is located, created or established for the purpose of securing a loan or other obligation. Security interests include but are not limited to mortgages, deeds of trusts, liens, and title pursuant to lease financing transactions. Security interests may also arise from transactions such as sale and leasebacks, conditional sales, installment sales, trust receipt transactions, certain assignments, factoring agreements, accounts receivable financing arrangements, and consignments, if the transaction creates or establishes an interest in an UST or UST system or in the facility or property on which the UST or UST system is located, for the purpose of securing a loan or other obligation.

(2) "Primarily to protect a security interest", as used in this subchapter, does not include indicia of ownership held primarily for investment purposes, nor ownership indicia

held primarily for purposes other than as protection for a security interest. A holder may have other, secondary reasons for maintaining indicia of ownership, but the primary reason why any ownership indicia are held must be as protection for a security interest.

(g) "Operation" means, for purposes of this Article, the use, storage, filling, or dispensing of petroleum contained in an UST or UST system.

§ 501201 to § 501209. [Reserved.]

§ 501210. Participation in Management.

(a) The term "participating in the management of an UST or UST system" means that the holder is engaging in decision making control of, or activities related to, operation of the UST or UST system, as defined in this section. Actions that are participation in management:

(1) Participation in the management of an UST or UST system means, for purposes of this subchapter, actual participation by the holder in the management or control of decision making related to the operation of an UST or UST system. Participation in management does not include the mere c capacity or ability to influence or the unexercised right to control UST or UST system operations. A holder is participating in the management of the UST or UST system only if the holder either:

(A) Exercises decision making control over the operational (as opposed to financial or administrative) aspects of the UST or UST system, such that the holder has undertaken responsibility for all or substantially all of the management of the UST or UST system; or

(B) Exercises control at a level comparable to that of a manager of the borrower's enterprise, such that the holder has assumed or manifested responsibility for

the overall management of the enterprise encompassing the day-to-day decision making of the enterprise with respect to all, or substantially all, of the operational (as opposed to financial or administrative) aspects of the enterprise.

(2) Operational aspects of the enterprise relate to the use, storage, filling, or dispensing of petroleum contained in an UST or UST system, and include functions such as that of a facility or plant manager, operations manager, chief operating officer, or chief executive officer. Financial or administrative aspects include functions such as that of a credit manager, accounts payable/receivable manager, personnel manager, controller, chief financial officer, or similar functions. Operational aspects of the enterprise do not include the financial or administrative aspects of the enterprise, or actions associated with environmental compliance, or actions undertaken voluntarily to protect the environment in accordance with applicable requirements in this Article.

(b) Actions that are not participation in management pre-foreclosure:

(1) Actions at the inception of the loan or other transaction. No act or omission prior to the time that indicia of ownership are held primarily to protect a security interest constitutes evidence of participation in management within the meaning of this Article. A prospective holder who undertakes or requires an environmental investigation (which could include a site assessment, inspection, and/or audit) of the UST or UST system or facility or property on which the UST or UST system is located (in which indicia of ownership are to be held), or requires a prospective borrower to clean up contamination from the UST or UST system or to comply or come into compliance (whether prior or subsequent to the time that indicia of ownership are held primarily to protect a security interest) with any applicable law or regulation, is not by such action considered to be participating in the management of the UST or UST system or facility or property on which the UST or UST system is located.

(2) Loan policing and work out. Actions that are consistent with holding ownership indicia primarily to protect a security interest do not constitute participation in management for purposes of this subchapter. The authority for the holder to take such actions may, but need not, be contained in contractual or other documents specifying requirements for financial, environmental, and other warranties, covenants, conditions, representations or promises from the borrower. Loan policing and work out activities cover and include all such activities up to foreclosure, exclusive of any activities that constitute participation in management.

(A) Policing the security interest or loan.

(i) A holder who engages in policing activities prior to foreclosure will remain within the exemption provided that the holder does not together with other actions participate in the management of the UST or UST system as provided in § 501210(a), Guam Administrative Rules and Regulations. Such policing actions include, but are not limited to, requiring the borrower to clean up contamination from the UST or UST system during the term of the security interest; requiring the borrower to comply or come into compliance with applicable federal, state, and local environmental and other laws, rules, and regulations during the term of the security interest; securing or exercising authority to monitor or inspect the UST or UST system or facility or property on which the UST or UST system is located (including on-site inspections) in which indicia of ownership are maintained, or the borrower's business or financial condition during the term of the security interest; or taking other actions to adequately police the loan or security interest

(such as requiring a borrower to comply with any warranties, covenants, conditions, representations, or promises from the borrower).

(ii) Policing activities also include undertaking by the holder of UST environmental compliance actions and voluntary environmental actions taken in compliance with this chapter, provided that the holder does not otherwise participate in the management or daily operation of the UST or UST system as provided in §§ 501210(a) and 50130, Guam Administrative Rules and Regulations sections. Such allowable actions include, but are not limited to, release detection and release reporting, release response and corrective action, temporary or permanent closure of an UST or UST system, UST upgrading or replacement, and maintenance of corrosion protection. A holder who undertakes these actions must do so in compliance with the applicable requirements in this chapter. A holder may directly oversee these environmental compliance actions and voluntary environmental actions, and directly hire contractors to perform the work, and is not by such action considered to be participating in the management of the UST or UST system.

(B) Loan work out. A holder who engages in work out activities prior to foreclosure will remain within the exemption provided that the holder does not together with other actions participate in the management of the UST or UST system as provided in § 501210(a) Guam Administrative Rules and Regulations.

For purposes of this rule, "work out" refers to those actions by which a holder, at any time prior to foreclosure, seeks to prevent, cure, or mitigate a default by the borrower or obligor; or to preserve, or prevent the diminution of, the value of the security. Work out activities include, but are not limited to, restructuring or renegotiating the terms of the security interest; requiring payment of additional rent or interest; exercising forbearance; requiring or exercising rights pursuant to an assignment of accounts or other amounts owing to an obligor; requiring or exercising rights pursuant to an escrow agreement pertaining to amounts owing to an obligor; providing specific or general financial or other advice, suggestions, counseling, or guidance; and exercising any right or remedy the holder is entitled to by law or under any warranties, covenants, conditions, representations, or promises from the borrower.

(c) Foreclosure on an UST or UST system or facility or property on which an UST or UST system is located, and participation in management activities post-foreclosure.

(1) Foreclosure.

(A) Indicia of ownership that are held primarily to protect a security interest include legal or equitable title or deed to real or personal property acquired through or incident to foreclosure. For purposes of this Article, the term "foreclosure" means that legal, marketable or equitable title or deed has been issued, approved, and recorded, and that the holder has obtained access to the UST, UST system, UST facility, and property on which the UST or UST system is located, provided that the holder acted diligently to acquire marketable title or deed and to gain access to the UST, UST system, UST facility, and property on which the UST or UST system is located. The indicia

of ownership held after foreclosure continue to be maintained primarily as protection for a security interest provided that the holder undertakes to sell, re-lease an UST or UST system or facility or property on which the UST or UST system is located, held pursuant to a lease financing transaction (whether by a new lease financing transaction or substitution of the lessee), or otherwise divest itself of the UST or UST system or facility or property on which the UST or UST system is located, in a reasonably expeditious manner, using whatever commercially reasonable means are relevant or appropriate with respect to the UST or UST system or facility or property on which the UST or UST system is located, taking all facts and circumstances into consideration, and provided that the holder does not participate in management (as defined in § 501210(a), Guam Administrative Rules and Regulations prior to or after foreclosure.

(B) For purposes of establishing that a holder is seeking to sell, re-lease pursuant to a lease financing transaction (whether by a new lease financing transaction or substitution of the lessee), or divest in a reasonably expeditious manner an UST or UST system or facility or property on which the UST or UST system is located, the holder may use whatever commercially reasonable means as are relevant or appropriate with respect to the UST or UST system or facility or property on which the UST or UST system is located, or may employ the means specified in § 501210(c)(2), Guam Administrative Rules and Regulations). A holder that outbids, rejects, or fails to act upon a written, bona fide, firm offer of fair consideration for the UST or UST system or facility or property on which the UST or UST system is located, as provided in § 501210(c)(2), Guam Administrative

Rules and Regulations, is not considered to hold indicia of ownership primarily to protect a security interest.

(2) Holding foreclosed property for disposition and liquidation. A holder, who does not participate in management prior to or after foreclosure, may sell, re-lease, pursuant to a lease financing transaction (whether by a new lease financing transaction or substitution of the lessee), an UST or UST system or facility or property on which the UST or UST system is located, liquidate, wind up operations, and take measures, prior to sale or other disposition, to preserve, protect, or prepare the secured UST or UST system or facility or property on which the UST or UST system is located. A holder may also arrange for an existing or new operator to continue or initiate operation of the UST or UST system. The holder may conduct these activities without voiding the security interest exemption, subject to the requirements of this Article.

(A) A holder establishes that the ownership indicia maintained after foreclosure continue to be held primarily to protect a security interest by, within twelve months following foreclosure, listing the UST or UST system or the facility or property on which the UST or UST system is located, with a broker, dealer, or agent who deals with the type of property in question, or by advertising the UST or UST system or facility or property on which the UST or UST system is located, as being for sale or disposition on at least a monthly basis in either a real estate publication or a trade or other publication suitable for the UST or UST system or facility or property on which the UST or UST system is located, or a newspaper of general circulation (defined as one with a circulation over 10,000, or one suitable under any applicable federal, state, or local rules of court for publication required

by court order or rules of civil procedure) covering the location of the UST or UST system or facility or property on which the UST or UST system is located. For purposes of this provision, the twelve-month period begins to run from the date that the marketable title or deed has been issued, approved and recorded, and the holder has obtained access to the UST, UST system, UST facility and property on which the UST or UST system is located, provided that the holder acted diligently to acquire marketable title or deed and to obtain access to the UST, UST system, UST facility and property on which the UST or UST system is located. If the holder fails to act diligently to acquire marketable title or deed or to gain access to the UST or UST system, the twelve-month period begins to run from the date on which the holder first acquires either title to or possession of the secured UST or UST system, or facility or property on which the UST or UST system is located, whichever is later.

(B) A holder that outbids, rejects, or fails to act upon an offer of fair consideration for the UST or UST system or the facility or property on which the UST or UST system is located, establishes by such outbidding, rejection, or failure to act, that the ownership indicia in the secured UST or UST system or facility or property on which the UST or UST system is located are not held primarily to protect the security interest, unless the holder is required, in order to avoid liability under federal or state law, to make a higher bid, to obtain a higher offer, or to seek or obtain an offer in a different manner.

(i) Fair consideration, in the case of a holder maintaining indicia of ownership primarily to protect a senior security interest in the UST or

UST system or facility or property on which the UST or UST system is located, is the value of the security interest as defined in this section. The value of the security interest includes all debt and costs incurred by the security interest holder, and is calculated as an amount equal to or in excess of the sum of the outstanding principal (or comparable amount in the case of a lease that constitutes a security interest) owed to the holder immediately preceding the acquisition of full title (or possession in the case of a lease financing transaction) pursuant to foreclosure, plus any unpaid interest, rent, or penalties (whether arising before or after foreclosure). The value of the security interest also includes all reasonable and necessary costs, fees, or other charges incurred by the holder incident to work out, foreclosure, retention, preserving, protecting, and preparing, prior to sale, the UST or UST system or facility or property on which the UST or UST system is located, re-lease, pursuant to a lease financing transaction (whether by a new lease financing transaction or substitution of the lessee), of an UST or UST system or facility or property on which the UST or UST system is located, or other disposition. The value of the security interest also includes environmental investigation costs (which could include a site assessment, inspection, and/or audit of the UST or UST system or facility or property on which the UST or UST system is located), and release response and corrective action costs incurred under §§ 50151 to 50167, Guam Administrative

Rules and Regulations or any other costs incurred as a result of reasonable efforts to comply with any other applicable federal, state or local law or regulation; less any amounts received by the holder in connection with any partial disposition of the property and any amounts paid by the borrower (if not already applied to the borrower's obligations) subsequent to the acquisition of full title (or possession in the case of a lease financing transaction) pursuant to foreclosure. In the case of a holder maintaining indicia of ownership primarily to protect a junior security interest, fair consideration is the value of all outstanding higher priority security interests plus the value of the security interest held by the junior holder, each calculated as set forth in this subsection.

(ii) Outbids, rejects, or fails to act upon an offer of fair consideration means that the holder outbids, rejects, or fails to act upon within ninety days of receipt, a written, bona fide, firm offer of fair consideration for the UST or UST system or facility or property on which the UST or UST system is located received at any time after six months following foreclosure, as defined in § 501210(c), Guam Administrative Rules and Regulations. A "written, bona fide, firm offer" means a legally enforceable, commercially reasonable, cash offer solely for the foreclosed UST or UST system or facility or property on which the UST or UST system is located, including all material terms of the transaction, from a ready, willing, and able purchaser who demonstrates

to the holder's satisfaction the ability to perform. For purposes of this provision, the six-month period begins to run from the date that marketable title or deed has been issued, approved and recorded to the holder, and the holder has obtained access to the UST, UST system, UST facility and property on which the UST or UST system is located, provided that the holder was acting diligently to acquire marketable title or deed and to obtain access to the UST or UST system, UST facility and property on which the UST or UST system is located. If the holder fails to act diligently to acquire marketable title or deed or to gain access to the UST or UST system, the six-month period begins to run from the date on which the holder first acquires either title to or possession of the secured UST or UST system, or facility or property on which the UST or UST system is located, whichever is later.

(3) Actions that are not participation in management post-foreclosure. A holder is not considered to be participating in the management of an UST or UST system or facility or property on which the UST or UST system is located when undertaking actions under this chapter, provided that the holder does not otherwise participate in the management or daily operation of the UST or UST system as provided in §§ 501210(a) and 501230, Guam Administrative Rules and Regulations. Such allowable actions include, but are not limited to, release detection and release reporting, release response and corrective action, temporary or permanent closure of an UST or UST system, UST upgrading or replacement, and maintenance of corrosion protection. A holder who undertakes these actions must do so in compliance with the applicable requirements in this Article.

A holder may directly oversee these environmental compliance actions and voluntary environmental actions, and directly hire contractors to perform the work, and is not by such action considered to be participating in the management of the UST or UST system.

§ 501211 to § 501219. [Reserved.]

§ 501220. Ownership of an Underground Storage Tank or Underground Storage Tank System or Facility or Property on which an Underground Storage Tank or Underground Storage Tank System is Located.

Ownership of an UST or UST system or facility or property on which an UST or UST system is located. A holder is not an "owner" of a petroleum UST or UST system or facility or property on which a petroleum UST or UST system is located for purposes of compliance with the UST technical standards as defined in § 501200(a), Guam Administrative Rules and Regulations, the UST release response and corrective action requirements under §§ 50151 to 50167, Guam Administrative Rules and Regulations, and the UST financial responsibility requirements under §§ 50190 to 501111, Guam Administrative Rules and Regulations, provided the person:

(1) Does not participate in the management of the UST or UST system as defined in § 501210, Guam Administrative Rules and Regulations; and

(2) Does not engage in petroleum production, refining, and marketing as defined in § 501200(b), Guam Administrative Rules and Regulations.

§§ 501221 to 501229. [Reserved.]

§ 501230. Operating an Underground Storage Tank or Underground Storage Tank System.

(a) Operating an UST or UST system prior to foreclosure. A

holder, prior to foreclosure, as defined in § 501210(c), Guam Administrative Rules and Regulations, is not an "operator" of a petroleum UST or UST system for purposes of compliance with the UST technical standards as defined in § 501200(a), Guam Administrative Rules and Regulations, the UST corrective action requirements under §§ 50151 to 50167, Guam Administrative Rules and Regulations, and the UST financial responsibility requirements under §§ 50190 to 501111, Guam Administrative Rules and Regulations, provided that the holder is not in control of or does not have responsibility for the daily operation of the UST or UST system.

(b) Operating an UST or UST system after foreclosure. The following provisions apply to a holder who, through foreclosure, as defined in § 501210(c), Guam Administrative Rules and Regulations, acquires a petroleum UST or UST system or facility or property on which a petroleum UST or UST system is located.

(1) A holder is not an "operator" of a petroleum UST or UST system for purposes of compliance with this chapter if there is an operator, other than the holder, who is in control of or has responsibility for the daily operation of the UST or UST system, and who can be held responsible for compliance with applicable requirements of this chapter.

(2) If another operator does not exist, as provided for under paragraph (1), a holder is not an "operator" of the UST or UST system, for purposes of compliance with the UST technical standards as defined in § 501200(a), Guam Administrative Rules and Regulations, the UST corrective action requirements under §§ 50151 to 50167, Guam Administrative Rules and Regulations, and the UST financial responsibility requirements under §§ 50190 to 501111, Guam Administrative Rules and Regulations, provided that the holder:

(A) Empties all of its known USTs and UST systems within sixty calendar days after foreclosure, or another reasonable time period specified by the agency, so that no more than 2.5 centimeters (one

inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remains in the system; leaves vent lines open and functioning; and caps and secures all other lines, pumps, manways, and ancillary equipment; and

(B) Empties those USTs and UST systems that are discovered after foreclosure within sixty calendar days after discovery, or another reasonable time period specified by the agency, so that no more than 2.5 centimeters (one inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remains in the system; leaves vent lines open and functioning; and caps and secures all other lines, pumps, manways, and ancillary equipment.

(3) If another operator does not exist, as provided for under paragraph (1), in addition to satisfying the conditions under paragraph (2), the holder must either:

(A) Permanently close the UST or UST system in accordance with §§ 50171 to 50174, Guam Administrative Rules and Regulations, except § 50172(b), Guam Administrative Rules and Regulations; or

(B) Temporarily close the UST or UST system in accordance with the following applicable provisions of § 50170, Guam Administrative Rules and Regulations:

(i) Continue operation and maintenance of corrosion protection in accordance with § 50131, Guam Administrative Rules and Regulations;

(ii) Report suspected releases to the agency; and

(iii) Conduct a site assessment in accordance with § 50172(a), Guam Administrative Rules and Regulations if the UST system is temporarily

closed for more than twelve months and the UST system does not meet the applicable system design, construction, and installation requirements in Article 2, except that the spill and overfill equipment requirements do not have to be met. The holder must report any suspected releases to the agency.

For purposes of this provision, the twelve-month period begins to run from the date on which the UST system is emptied and secured under paragraph (2).

(4) The UST system can remain in temporary closure until a subsequent purchaser has acquired marketable title to the UST or UST system or facility or property on which the UST or UST system is located. Once a subsequent purchaser acquires marketable title to the UST or UST system or facility or property on which the UST or UST system is located, the purchaser must decide whether to operate or close the UST or UST system in accordance with applicable requirements in this chapter.

§§ 501231 to 501239. [Reserved.]

ARTICLE 10
OPERATOR TRAINING

§ 501240. General Requirement for All UST Systems
§ 501241. Designation of Class A, B, and C Operators
§ 501242. Requirements for Operator Training
§ 501243. Timing of Operator Training
§ 501244. Retraining
§ 501245. Documentation
§ 501246 to § 501249. [Reserved.]

§ 501240. General Requirement for All UST Systems.

All owners and operators of UST systems must ensure they have designated Class A, Class B, and Class C operators who meet the requirements of this subchapter.

§ 501241. Designation of Class A, B, and C Operators.

(a) UST system owners and operators must designate:

(1) At least one Class A and one Class B operator for each UST or group of USTs at a facility; and

(2) Each individual who meets the definition of Class C operator at the UST facility as a Class C operator.

(b) Separate individuals may be designated for each class of operator or an individual may be designated for more than one of the operator classes.

(c) Owners and operators shall submit written notice to the agency identifying the Class A and Class B operators for each UST or tank system in use or temporarily out of use no later than thirty (30) calendar days after an operator assumes the operator's responsibilities as a Class A or Class B operator. The notification must include the name of each operator, the date training was completed, the name and address of each facility where the USTs or tank systems for which the operator has been designated is located, and written verification from a training program approved or administered by the agency that the Class A and Class B operator for each UST or tank system has successfully completed operator training in the operator's class.

§ 501242. Requirements for Operator Training.

UST system owners and operators must ensure Class A, Class B, and Class C operators meet the requirements of this section. Any individual designated for more than one operator class must successfully complete the required training program or comparable examination according to the operator classes in which the individual is designated.

(1) Class A operators. Each designated Class A operator must

either be trained in accordance with subparagraphs (A) and (B) or pass a comparable examination in accordance with paragraph (5).

(A) At a minimum, the training must teach the Class A operators about the purpose, methods, and function of:

(i) Spill and overfill prevention;

(ii) Release detection;

(iii) Corrosion protection;

(iv) Emergency response;

(v) Product and equipment compatibility and demonstration;

(vi) Financial responsibility;

(vii) Notification and permitting;

(viii) Temporary and permanent closure;

(ix) Reporting, recordkeeping, testing, and inspections;

(x) Environmental and regulatory consequences of releases; and

(xi) Training requirements for Class B and Class C operators.

(B) At a minimum, the training program must evaluate Class A operators to determine these individuals have the knowledge and skills to make informed decisions regarding compliance and determine whether appropriate individuals are fulfilling the operation, maintenance, and recordkeeping requirements for UST systems in accordance with subparagraph (A).

(2) Class B operators. Each designated Class B operator must either receive training in accordance with subparagraphs (A) and (B) or pass a comparable examination, in accordance with paragraph (5).

(A) At a minimum, the training program for Class B operators must teach the Class B operator about the purpose, methods, and function of:

(i) Operation and maintenance, including components of UST systems, materials of UST system components, and methods of release detection and release prevention applied to UST components;
(ii) Spill and overfill prevention;
(iii) Release detection and related reporting;
(iv) Corrosion protection;
(v) Emergency response;
(vi) Product and equipment compatibility and demonstration;
(vii) Reporting, recordkeeping, testing, and inspections;
(ix) Environmental and regulatory consequences of releases; and
(x) Training requirements for Class C operators.

(B) At a minimum, the training program must evaluate Class B operators to determine these individuals have the knowledge and skills to implement applicable UST regulatory requirements in the field on the components of typical UST systems in accordance with subparagraph (A).

(3) Class C operators. Each designated Class C operator must either: be trained by a Class A or Class B operator in accordance with subparagraphs (A) and (B); complete a training program in accordance with subparagraphs (A) and (B); or pass a comparable examination, in accordance with paragraph (5).

(A) At a minimum, the training program for the Class C operator must teach the Class C operators to take appropriate actions (including notifying appropriate authorities) in response to emergencies or alarms caused by spills or releases resulting from the operation of the UST system.

(B) At a minimum, the training program must evaluate

Class C operators to determine these individuals have the knowledge and skills to take appropriate action (including notifying appropriate authorities) in response to emergencies or alarms caused by spills or releases from an underground storage tank system.

(4) Training program requirements. Any training program must meet the minimum requirements of this section, must incorporate an evaluation of operator knowledge through written examination, a practical demonstration, or other reasonable testing methods acceptable to the agency, and must be approved or administered by the agency. An operator training program may consist of in-class or on-line instruction and may include practical exercises.

(5) Comparable examination. A comparable examination must, at a minimum, test the knowledge of the Class A, Class B, or Class C operators in accordance with the requirements of paragraph (1), (2), or (3), as applicable. The acceptability of a comparable examination to meet the requirements of this section is determined by the agency. The agency may accept operator training verification from other states if the operator training is deemed by the agency to be equivalent to the requirements of this section.

§ 501243. Timing of Operator Training.

(a) An owner and operator must ensure that designated Class A, Class B, and Class C operators meet the requirements in § 501242 not later than October 13, 2015.

(b) Class A and Class B operators designated on or after October 13, 2015, must meet requirements in § 501242 within thirty (30) calendar days of assuming duties.

(c) Class C operators designated after October 13, 2015, must be trained before assuming duties of a Class C operator.

§ 501244. Retraining.

(a) Class A and class B operators shall be retrained every two (2) years. Class C operators shall be retrained every three hundred sixty-five (365) calendar days.
(b) Class A and Class B operators of UST systems determined by the agency to be out of compliance must complete a training program or comparable examination in accordance with requirements in § 501242. The training program or comparable examination must be developed or administered by the agency or an independent organization. An UST or tank system is out of compliance if the system:

(1) Meets any of the delivery prohibition criteria outlined in § 501429; or
(2) Is in significant violation of other requirements, such as temporary or permanent closure, tank registration, or financial responsibility, as determined by the director.

(c) UST system owners and operators must ensure Class A and Class B operators are retrained as required in subsection (b) no later than thirty (30) calendar days from the date the agency determines the facility is out of compliance except in one of the following situations:

(1) Class A and Class B operators take annual refresher training. Refresher training for Class A and Class B operators must cover all applicable requirements in § 501242;
(2) The agency, at its discretion, waives this retraining requirement for either the Class A or Class B operator or both.

§ 501245. Documentation.

Owners and operators of underground storage tank systems must maintain a list of designated Class A, Class B, and Class C operators and maintain records verifying that training and retraining, as applicable, have been completed, in accordance with § 50134 as follows:

(1) The list must:
    (A) Identify all Class A, Class B, and Class C operators

currently designated for the facility; and

(B) Include names, class of operator trained, date assumed duties, date each completed initial training, and any retraining.

(2) Records verifying completion of training or retraining must be a paper or electronic record for Class A, Class B, and Class C operators. The records, at a minimum, must identify name of trainee, date trained, operator training class completed, and list the name of the trainer or examiner and the training company name, address, and telephone number. Owners and operators must maintain these records for as long as Class A, Class B, and Class C operators are designated. The following requirements also apply to the following types of training:

(A) Records from classroom or field training programs (including Class C operator training provided by the Class A or Class B operator) or a comparable examination must, at a minimum, be signed by the trainer or examiner;

(B) Records from computer based training must, at a minimum, indicate the name of the training program and web address, if Internet based; and

(C) Records of retraining must include those areas on which the Class A or Class B operator has been retrained.

§ 501246 to § 501249. [Reserved.]

ARTICLE 11
RESERVED

§ 501250 to § 501299. [Reserved.]

ARTICLE 12
PERMITS AND VARIANCES

§ 501300 to § 501322. [Reserved]
§ 501323. Permit Required
§ 501324. Application for Permit
§ 501325. Permit
§ 501326. Permit Renewal
§ 501327. Action On and Timely Approval of Application for Permit
§ 501328. Permit Conditions
§ 501329. Modification of Permit
§ 501330. Revocation or Suspension of Permit
§ 501331. Change in Owner or Operation for a Permit
§ 501332. Variance Allowed
§ 501333. Variance Application
§ 501334. Maintenance of Permit or Variance
§ 501335. Fees
§ 501336 to § 501339. [Reserved.]

§ 501300 to § 501322. [Reserved]

§ 501323. Permit Required.

(a) No person shall install, operate, modify, or close an UST or tank system without first obtaining a permit from the Administrator.
(b) The Administrator shall approve an application for a permit only if the applicant has submitted sufficient information to the satisfaction of the Administrator that the technical, financial, and other requirements of this chapter are or can be met and the installation and operation of the UST or

tank system will be done in a manner that is protective of human health and the environment.
(c) A permit shall be issued only in accordance with 10 GCA Chapter 76, and this Article, and it shall be the duty of the permittee to ensure compliance with the law in the installation, operation, and closure of the UST or tank system.
(d) Issuance of a permit shall not relieve any person of the responsibility to comply fully with all applicable laws

§ 501324. Application for Permit.

(a) Every application for a permit shall be submitted to the agency on the "Application for an Underground Storage Tank Permit" form prescribed by the agency.
(b) A permit fee in accordance with § 501335 shall accompany each application for a permit.
(c) The applicant shall submit sufficient information to enable the Administrator to make a decision on the application. Information submitted shall include but not be limited to the following:

(1) General information on involved parties, including the landowner, UST owner, and UST operator; location of the property; and basic description of the UST or tank system;
(2) Age, size, precise location within the property, and use of each UST;
(3) Other information required in the form prescribed by the Administrator; and
(4) Other information as the agency may require.

(d) Every application shall be signed by the owner and the operator and shall constitute an acknowledgment that the applicants assume responsibility for the installation and operation of the UST or tank system in accordance with this Article and the conditions of the permit, if issued. Each signatory shall be:

(1) In the case of a corporation, a principal executive officer of at least the level of vice president, or a duly authorized

representative if that representative is responsible for the overall operation of the UST or tank system;

(2) In the case of a partnership, a general partner;

(3) In the case of a sole proprietorship, the proprietor; or

(4) In the case of a county, state, or federal entity, either a principal executive officer, ranking elected official, or other duly authorized employee.

§ 501325. Permit.

(a) Upon approval of an application for a permit to install and operate an UST or tank system, the Administrator shall issue a permit for a term of one (1) year except as noted in subsection (b).

(b) The owner or operator shall have one (1) year from the issuance of the permit to install an UST or tank system. If the installation is not completed within one (1) year, the permit expires and the owner or operator must apply for a new permit.

(c) The owner or operator must inform the agency at least seven (7) calendar days prior to performing the actual installation. The information shall include the permit number, name and address of the UST or tank system, the contact person, the contact person's phone number, and date and time of actual installation.

(d) The owner or operator must notify the agency within thirty (30) calendar days after the installation of the UST or tank system. The notification shall be submitted on the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator. If information submitted on the form has changed since the original application. The form must certify compliance with the following requirements:

(1) Installation of tanks and piping under § 50120(f);

(2) Cathodic protection of steel tanks and piping under § 50120(b) and (c);

(3) Financial responsibility under Article 8; and

(4) Release detection under §§ 50141 and 50142.

(e) The agency, where practicable and appropriate, may issue one (1)

permit to the owner or operator of an UST system for the purpose of combining all USTs, piping, and any ancillary equipment constituting that UST system under one permit, irrespective of the number of individual USTs, so long as that UST system is part of one reasonably contiguous physical location.

§ 501326. Permit Renewal.

(a) On application, a permit may be renewed for a term of one (1) year.
(b) A renewal fee in accordance with § 501335 shall accompany each application for renewal of a permit.
(c) An application for a renewal shall be received by the agency at least one hundred eighty (180) calendar days prior to the expiration of the existing permit and shall be submitted on the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator.

§ 501327. Action On and Timely Approval of Application for Permit.

(a) The Administrator need not act upon nor consider any incomplete application for a permit. An application shall be deemed complete only when:

(1) All required and requested information, including the application form, plans, specifications, and other information required by this Article have been submitted in a timely fashion;
(2) All fees have been paid as prescribed in § 501335; and
(3) The Administrator determines that the application is complete.

(b) The Administrator shall approve, approve with conditions, or deny a complete application for a permit to install or operate an UST or tank system or a permit renewal, modification, or transfer, required under this chapter. The Administrator shall notify the applicant of the agency's decision within one hundred eighty (180) calendar days of receipt of a complete application, as defined in subsection (a). Otherwise, a complete

application is deemed approved one hundred eighty (180) calendar days after it is received by the agency.

§ 501328. Permit Conditions.

The Administrator may impose conditions on a permit that the Administrator deems reasonably necessary to ensure compliance with this Article and any other relevant state requirement, including conditions relating to equipment, work practice, or operation. Conditions may include, but shall not be limited to, the requirement that devices for measurement or monitoring of regulated substances be installed and maintained and the results reported to the Administrator, all costs and expenses to be borne by the applicant.

§ 501329. Modification of Permit.

(a) The Administrator may modify a permit if there is a change that requires a modification to an existing permit. Changes requiring a permit modification shall include but not be limited to:

(1) The addition or removal of an UST from an UST system; and

(2) Any change to or modification of an UST or UST system which would otherwise place the existing UST or UST system out of compliance with this Article or an existing permit.

(b) An application for modification of a permit shall be made in writing to the agency and shall be accompanied by sufficient information on the planned renovation or modification to the UST or tank system to assist the agency in making a determination as to whether the application for modification should be denied or granted.

(c) Applications for a permit modification shall be received by the agency no later than sixty (60) calendar days prior to the occurrence of the event that prompted the application except that applications for change-in-service must be received by the agency at least thirty (30) calendar days before the owner or operator begins the change-in-service. Applications shall be submitted on the "Notification for Underground Storage Tanks

Permits" form prescribed by the Administrator.
(d) Owners and operators shall submit a permit application to add USTs or tank systems to an existing permit. If the Administrator approves the addition, the existing permit shall be terminated, and a new permit shall be issued which covers the additional USTs as well as the already-permitted USTs. The term of the new permit shall be for the remaining term of the original permit.

§ 501330. Revocation or Suspension of Permit.

The Administrator may revoke or suspend a permit if the Administrator finds any one of the following:

(1) There is a release or threatened release of regulated substances that the agency deems to pose an imminent and substantial risk to human health or the environment;
(2) The permittee violated a condition of the permit; or
(3) The permit was obtained by misrepresentation, or failure to disclose fully all relevant facts.

§ 501331. Change in Owner or Operator for a Permit.

(a) No permit to install, own, or operate an UST or tank system shall be transferable unless approved by the agency. Request for approval to transfer a permit from one owner to another owner must be made by the new owner. Request for approval to transfer a permit from one operator to another operator must be made by the owner.
(b) The transferred permit will be effective for the remaining life of the original permit.
(c) An application for the transfer shall be received by the agency at least thirty (30) calendar days prior to the proposed effective date of the transfer and shall be submitted on the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator.

§ 501332. Variance Allowed.

Provisions pursuant to this Article relating to USTs or tank systems which are more stringent than Title 40, Part 280 of the Code of Federal Regulations, published by the Office of the Federal Register, as amended as of July 1, 2017, may be varied by the Administrator in accordance with this Article. No variance may be less stringent than the federal requirements.

§ 501333. Variance Application.

(a) An application for a variance shall be submitted to the agency on the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator.
(b) A variance fee in accordance with § 501335 shall accompany each application for a variance.
(c) Every application shall be signed by the owner and operator, and the signature shall be by one of the following:

(1) In the case of a corporation, by a principal executive officer of at least the level of vice president, or a duly authorized representative if that representative is responsible for the overall operation of the UST or tank system;
(2) In the case of a partnership, by a general partner;
(3) In the case of a sole proprietorship, by the proprietor; or
(4) In the case of a county, state, or federal entity, by a principal executive officer, ranking elected official or other duly authorized employee.

(d) The Administrator shall approve, approve with conditions, or deny a complete application as required under this Article. The Administrator shall notify the applicant of the agency's decision, within one hundred eighty (180) calendar days of receipt of a complete application. Otherwise, a complete application is deemed approved one hundred eighty (180) calendar days after it is received by the agency.

§ 501334. Maintenance of Permit or Variance.

(a) Permits and variances, including application records, shall be

maintained at the location of the UST or tank system for which the permit was issued and shall be made available for inspection upon request of any duly authorized representative of the agency.
(b) No person shall willfully deface, alter, forge, counterfeit, or falsify any permit or variance.

§ 501335. Fees.

(a) Every applicant for a permit or a variance, or applicant for modification or renewal of a permit or variance, or applicant for a transfer of a permit, shall pay the applicable fees as set forth below:

Type of Application	Permit	Variance
Permit Application Fee per Tank (New Installation)	$500.00	$550.00
Permit to Operate Fee per Tank (Annual)	$250.00	
Permit to Transfer	$250.00	
Permit to Modify	$150.00	$200.00
Permit to Close	$500.00	$550.00
Permit to Install OWS	$500.00	$550.00
Permit to Close OWS	$500.00	
Request for Proposal (Copy)	$25.00	
Installer's Certification (2 years)	$150.00	
Operator's Certification A & B (2 years)	$150.00	
Operator's Re-Certification (2 years)	$100.00	

(b) Fees shall be submitted with the application and are nonrefundable.
(c) Fees shall be made payable to Guam Environmental Protection Agency UST-LUST Fund.
(d) If more than one type of application is combined, the highest

applicable fee will be assessed. However, a permit application and a variance application shall not be combined under one fee.

§ 501336 to § 501399. [Reserved.]

ARTICLE 13
ENFORCEMENT

§ 501400 to § 501420. [Reserved.]
§ 501421. Purpose.
§ 501422. Field Citation
§ 501423 to § 501428. [Reserved.]
§ 501429. Delivery, Deposit, and Acceptance Prohibition

§ 501400 to § 501420. [Reserved.]
§ 501421. Purpose.

The purpose of this Article is to create an enforcement program that facilitates the effective and expeditious resolution of violations of 10 GCA Chapter 76 and this Chapter.

§ 501422. Field Citations.

(a) Field citations may be issued for violations of 10 GCA Chapter 76 and this Chapter, that the agency deems appropriate for resolution through the issuance of a field citation. Nothing in this section requires the agency to elect one enforcement mechanism over another and the decision to proceed with one course of action over, or in conjunction with, another is within the discretion of the Administrator.
(b) The field citation is an offer to settle an allegation of noncompliance with this Chapter. If the owner or operator declines to accept the agency's offer to settle within the time period set forth in the field citation, the agency may bring administrative or civil enforcement action under 10 GCA Chapter 76.

(c) The field citation shall set forth sufficient facts to notify the recipient of the alleged violations, the applicable law, the proposed settlement amount, and the time period during which to respond.
(d) By returning the signed settlement agreement attached to the field citation and payment of the proposed settlement amount to the agency, the owner or operator will be deemed to have accepted the terms and conditions of the settlement offer.
(e) By signing the settlement agreement, the owner or operator waives his or her right to a contested case hearing pursuant to 10 GCA Chapter 76 and 5 GCA Chapter 9.

§ 501423 to § 501428. [Reserved.]

§ 501429. Delivery, Deposit, and Acceptance Prohibition.

(a) No person shall deliver to, deposit into, or accept a regulated substance into an UST or tank system that has been identified by the agency as ineligible for delivery, deposit, or acceptance.
(b) An UST or tank system shall be identified by the agency as ineligible for delivery, deposit, or acceptance by placement of a tag or other notice of ineligibility onto the fill pipe of the ineligible UST or tank system. If an owner or operator is not present at the facility at the time the underground storage tank is identified as ineligible, the agency may notify an employee at the facility at the time of identification in lieu of the owner or operator.
(c) No person shall remove, tamper with, destroy, or damage a tag or other notice of ineligibility affixed to any UST or tank system unless authorized to do so by the agency. Removal of a tag or other notice of ineligibility by the agency or person authorized by the agency shall occur only after the agency confirms that the conditions giving rise to the delivery prohibition have been corrected to the agency's satisfaction. The agency shall make this determination either at a hearing, if one is requested in accordance with this section, or as soon as practicable.
(d) Pursuant to this section, a tag or other notice of ineligibility may immediately be affixed to the fill pipe of an UST or tank system upon

finding by the agency of any of the following:

(1) Operating without a permit issued by the agency;
(2) Operating inconsistently with one or more conditions of a permit issued by the agency;
(3) Required spill prevention equipment is not installed or properly functioning or maintained;
(4) Required overfill protection equipment is not installed or properly functioning or maintained;
(5) Required release detection equipment is not installed or properly functioning or maintained;
(6) Required corrosion protection equipment is not installed or properly functioning or maintained;
(7) Failure to maintain financial responsibility; or
(8) Failure to protect a buried metal flexible connector from corrosion.

(e) An owner or operator of an UST or tank system designated by the agency to be ineligible shall be provided a hearing to contest the agency's determination of ineligibility within forty-eight (48) hours of the agency's receipt of a written request for a hearing by the owner or operator of the ineligible UST or tank system. The hearing shall modify or affirm the agency's determination of ineligibility and shall be conducted in accordance with 10 GCA Chapter 76 and 5 GCA Chapter 9, and the agency's rules of practice and procedure.

THE GUAM ENVIRONMENTAL PROTECTION AGENCY BOARD OF DIRECTORS

Guam EPA Resolution # GEPA 19-002

Relative to the approval of the Guam Environmental Protection Agency's Guam Underground Storage Tank Regulations

WHEREAS, 10 Guam Code Annotated Chapter 45, § 45106 provides that the Agency is authorized and directed to adopt, amend and repeal rules and regulations implementing and consistent with the powers and duties vested in the Agency pursuant to § 45105; and

WHEREAS, 10 Guam Code Annotated Chapter 76, Article 1, § 76104 provides that one of the powers and duties of the Guam Environmental Protection Agency Administrator shall be to develop and administer an Underground Storage Tank (UST) program for Guam pursuant to 10 Guam Code Annotated Chapter 76, Article 1; and

WHEREAS, 10 Guam Code Annotated Chapter 76, Article 1, § 76102(d) provides that one of the purposes of 10 Guam Code Annotated Chapter 76 (Underground Storage of Regulated Substances Act) is to enact and establish regulations that ensure consistent clean-up of regulated substances and mitigation of the damage they cause; and

WHEREAS, 10 Guam Code Annotated Chapter 76, Article 1, § 76104(d) provides that one of the powers and duties of the Guam Environmental Protection Agency Administrator shall be to enact and enforce rules and regulations governing UST design, construction, installation, release detection and inventory control, compatibility, record maintenance, reporting, corrective action, closure, and financial responsibility in order to enforce Chapter 76; and

WHEREAS, 10 Guam Code Annotated Chapter 76, Article 1, § 76104(f) provides that one of the powers and duties of the Guam Environmental Protection Agency Administrator shall be to enact and enforce other rules and regulations as necessary to establish a UST program, which meets the requirements of Section 9004 of Subtitle I of RCRA.

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NOW THEREFORE, the Guam Environmental Protection Agency Board of Directors hereby adopts the Guam Underground Storage Tank Regulations, a true and accurate copy of which is attached hereto and incorporated herein by reference.

Approved This Day: December 12, 2019

Robert A. Perron
Board Chairman, Guam EPA

12/12/19
Date

Terrence Brooks
Board Vice Chairman, Guam EPA

12/12/19
Date

Arlene Acfalle
Board Secretary, Guam EPA

12/12/19
Date

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FACT SHEET – RESOLUTION NUMBER _# 19-002___
GUAM EPA - BOARD OF DIRECTORS MEETING
DATE: September 19, 2019

Pursuant to Title 10, Guam Code Annotated Chapter 76 § 76104(d), Underground Storage of Regulated Substances Act, the Guam Environmental Protection Agency hereby submits a copy of the Draft Underground Storage Tank (UST) Regulations for your review and motion for approval.

Background:

- March 12, 2019 – Mr. Walter S. Leon Guerrero, Administrator for the Guam Environmental Protection Agency (Guam EPA) received a letter from Ms. Geraldine A. Cepeda, Compiler of Laws for the Supreme Court of Guam. Ms. Cepeda stated that upon review of the entire record for adoption of the UST Regulations (Title 22 GAR, Chapter 50 dated September 30, 2013), the rule-making process did not comport with applicable Guam law (pursuant to 5 GCA, Chapter 9)

- In July 2015, EPA revised the 1988 federal underground storage tank (UST) regulations by increasing emphasis on properly operating and maintaining UST equipment. The revision will help prevent and detect UST releases and help ensure all USTs in the United States, including US territories and Indian country meet the same minimum standards, In addition, EPA added new operation and maintenance requirements.

- Because of the large regulated universe of USTs at the inception of the program, EPA designed the UST program to be implemented by states, US territories, and Indian country.

    - 38 states, plus the District of Columbia and Puerto Rico, have been approved to act in lieu of the federal program and may have more stringent UST requirements: of those, four (4) states have approved programs under 2015 federal UST regulations.
    - The remaining states have agreements with EPA to be the primary implementing agency including Guam.
    - Guam EPA will be seeking State Program Approval (SPA) once our regulations have been approved.

- States have reported that UST releases are the most common source of groundwater contamination and that petroleum is the most common contaminant.

EPA's Review of Draft UST Regulations

- May, June, and July 2019, Ms. Elizabeth McDermott, UST Regulation Development and State Program Approval, EPA Office of Underground Storage Tanks (Headquarters, Washington DC) reviewed and provided comments on Guam's Draft UST Regulations. An electronic copy of the draft regulations was also provided to Mr. Omer Shalev, USEPA Region 9. No comments were received from Omer.

Public Outreach:

- August 6, 2019 – Guam EPA notified registered owners and operators via email of the Ad in the Guam Daily Post of the Notice of Public Hearing and Public Comment and Review Period for the proposed UST Regulations of Regulated Substances.. A copy of the Ad was included in the email that included the Agency's website (www.epa.guam.gov) to download the regulations.

Guam Daily Post - Notice of Public Hearing and Public Review and Comment Period:

- August 5, 2019 and August 30, 2019
  - ❖ Guam EPA placed an Ad in the Guam Daily Post informing the general public and owners/operators of USTs containing Regulated Substances of a Public Hearing for 22 GAR, Chapter 50, Guam EPA UST Regulations on September 11, 2019 at 3:00 p.m. at Guam EPA's Conference Room, Tiyan.
  - ❖ The Ad also included the start date of August 5, 2019 and end date of September 19, 2019 for the ***45-days Public Comment and Review Period*** for the proposed UST Regulations and the availability of the Environmental Impact Statement (EIS) and UST Regulations at the Agency and Agency website.

Public Hearing:

Guam EPA conducted a Public Hearing: Wednesday September 11, 2019 @ 3:00 p.m. at the Guam EPA Administration Building Conference Room. The meeting was attended by 13 stakeholders and adjourned at approximately 3:17 p.m., September 11, 2019.

- There were no significant comments or questions made on the proposed UST regulations other than the vent lines from the UST – Do we require lines to be double walled. Response – not required for vent lines.
- The other question that was asked was the process and the duration that it would take for the regulations to become effective.

GUAM ENVIRONMENTAL PROTECTION AGENCY
AHENSIAN PRUTEKSION LINA'LA GUAHAN

NOTICE OF PUBLIC HEARING
GUAM UNDERGROUND STORAGE TANK REGULATIONS

In accordance with 5 GCA §9301(a), the Guam Environmental Protection Agency (Guam EPA) would like to notify the general public and owners/operators of Underground Storage Tanks (USTs) containing Regulated Substances of a Public Hearing for 22 GAR, Chapter 50, Guam EPA UST Regulations.

PUBLIC HEARING:
Wednesday • September 11, 2019 • 3:00 p.m.
at the Guam EPA Administration Building Conference Room located at 17-3304 Mariner Avenue, Tiyan.

PUBLIC COMMENT & REVIEW PERIOD:
August 5, 2019 - September 19, 2019

Guam UST Regulations relevant to this public hearing can be viewed at the Agency's administration building in Tiyan from 8:00 a.m. to 4:30 p.m. on business days, beginning on Monday, August 5, 2019.
The proposed regulations are also available at epa.guam.gov.
Written comments are welcomed and must be received by the agency via hand delivery or mail and should be addressed to: Administrator, c/o Guam EPA: 17-3304 Mariner Avenue Tiyan Barrigada, Guam 96913-1617
Written comments must be received, or postmarked no later that 5:00 p.m. on September 19, 2019.

Facsimile and e-mail submittals will not be accepted.

Should you have any questions or require further clarification, please contact the Guam EPA Hazardous Waste Management Program at (671) 300-4751/2.

/s/ Walter S. Leon Guerrero, Administrator
Individuals requiring special accomodations, auxiliary aids or services should contact Guam EPA at 300.4751/2.

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/s/ Walter S. Leon Guerrero, Administrator
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Public Notice – July 24, 2019

British queen approves Johnson's bid to suspend Parliament

LONDON (Tribune News Service) – Queen Elizabeth II approved British Prime Minister Boris Johnson's plan to suspend Parliament from mid-September to mid-October, a move that could hamper efforts by lawmakers to block a no-deal Brexit.

Johnson wants Britain to leave the European Union as scheduled on Oct. 31, even if it means not having a withdrawal deal in place, a scenario that many fear could wreak havoc on the country's economy with ripple effects far beyond.

The monarch's formal body of advisers, the Privy Council, said in a statement that the suspension would take place "no earlier than Monday 9th September and no later than Thursday 12th September 2019 to Monday 14th October 2019."

Johnson requested the suspension earlier on Wednesday in what opposition leaders say is an intentional attempt to thwart their efforts by robbing them of valuable parliamentary time.



JOHNSON: *Prime Minister Boris Johnson at West Midlands Police Learning and Development Centre in Birmingham, England, July 26. Johnson said that the Brexit deal will be "difficult."*
Toby Melville/PA Wire/Zuma Press/Tribune News Service

His proposal was met with outrage by the opposition and some members within his own Conservative Party.

Labour leader Jeremy Corbyn and Liberal Democrat leader Jo Swinson wrote to the queen to protest Johnson's bid, Britain's Press Association reported.

Corbyn said he had written the letter to protest "in the strongest possible terms on behalf of my party and I believe all the other opposition parties are going to join in with this," the report said.

Johnson denied the suggestion that his move was motivated by a desire to force through a no-deal Brexit, however, saying in a statement that it would ensure "that there is good time before and after the (EU summit) for Parliament to further consider Brexit issues."

Johnson is scheduled to meet other EU leaders at a summit on Oct. 17 and 18 to discuss the terms of the departure.

John Bercow, the speaker of the House of Commons, referred to the move as a "constitutional outrage."

"Shutting down Parliament would be an offense against the democratic process and the rights of parliamentarians as the people's elected representatives," Bercow said.

Conservative backbencher Dominic Grieve called it "outrageous," saying that it could lead to a vote of no confidence in Johnson.

"This government will come down," he said.

"So it seems that Boris Johnson may actually be about to shut down Parliament to force through a no-deal Brexit," Scottish First Minister Nicola Sturgeon said before the announcement.

"Unless MPs come together to stop him next week, today will go down in history as a dark one indeed for UK democracy," she added.

The European Commission called on Britain to put forward any proposed changes to the Brexit divorce deal as soon as possible, while refusing to comment on Johnson's request to suspend Parliament.

"Our working assumption is that Brexit should occur on Oct. 31 and that should happen with a deal," said commission spokeswoman Mina Andreeva. "For that to happen, of course the earlier we see workable proposals, the better."

Also Wednesday, British Brexit negotiator David Frost met with EU counterparts. The commission did not comment on their discussions, however.

US will not release Middle East peace plan before Israeli election

WASHINGTON (Reuters) – The United States will not release the long-delayed political portion of its Israeli-Palestinian peace plan before Israel's elections next month, White House Middle East envoy Jason Greenblatt said on Wednesday.

The move, announced in a tweet by Greenblatt, keeps the plan's details from becoming an issue in the election, in which the leadership of Prime Minister Benjamin Netanyahu, a close ally of President Donald Trump, is at stake.



Benjamin Netanyahu

"We have decided that we will not be releasing the peace vision (or parts of it) prior to the Israeli election," Greenblatt said on Twitter.

Trump's son-in-law Jared Kushner has been working behind the scenes on the plan to resolve the decades-old Israeli-Palestinian conflict, although Palestinians, who say the Trump administration is too pro-Israel, say it is dead in the water.

A goal to raise tens of billions of dollars to fund the plan was announced earlier this year, but the political details have remained under wraps, with Kushner refusing to say even whether it would offer Palestinians a state of their own.

Trump on Monday had said the plan might be revealed before the Israeli election.

At a campaign rally on Wednesday, Netanyahu said he expected the U.S. proposal would not be delayed for much longer.

"This evening we learned that President Trump's 'deal of century' would be published and presented to the world after the election. I can reasonably estimate that it will happen very soon after the election," Netanyahu said.

SUGAR PLUM TREE INCORPORATED
STATEMENT OF ACTIVITIES
1/1/2018 - 12/31/2018

SUPPORT AND REVENUE:		
Special events	$	6,778.00
Other miscellaneous income	$	4,400.00
TOTAL SUPPORT AND REVENUE	$	11,178.00
EXPENDITURES:		
Program services	$	3,481.37
Management and general	$	6,000.00
Direct expenses	$	3,100.00
TOTAL EXPENDITURES	$	12,581.37
CHANGES IN NET ASSETS	$	(1,403.37)
NET ASSETS AT BEGINNING OF YEAR	$	11,822.58
NET ASSETS AT END OF YEAR	$	10,419.21

STATEMENT OF FINANCIAL POSITION
1/1/2018 - 12/31/2018

ASSETS:		
Cash and cash equivalents	$	10,419.21
TOTAL ASSETS	$	10,419.21
NET ASSETS:		
Unrestricted	$	10,419.21
TOTAL NET ASSETS	$	10,419.21

This is to certify that the above Statement of Activities and Statement of Financial Position true and an accurate account of the Sugar Plum Tree Incorporated.

Rachalyn Cardines, Treasurer

GUAM ENVIRONMENTAL PROTECTION AGENCY
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NOTICE OF PUBLIC HEARING
GUAM UNDERGROUND STORAGE TANK REGULATIONS

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PUBLIC HEARING:
Wednesday • September 11, 2019 • 3:00 p.m.
at the Guam EPA Administration Building Conference Room located at 17-3304 Mariner Avenue, Tiyan.

PUBLIC COMMENT & REVIEW PERIOD:
August 5, 2019 - September 19, 2019

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The proposed regulations are also available at epa.guam.gov.
Written comments are welcomed and must be received by the agency via hand delivery or mail and should be addressed to: Administrator, c/o Guam EPA: 17-3304 Mariner Avenue Tiyan Barrigada, Guam 96913-1617
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Facsimile and e-mail submittals will not be accepted.

Should you have any questions or require further clarification, please contact the Guam EPA Hazardous Waste Management Program at (671) 300-4751/2.

/s/ Walter S. Leon Guerrero, Administrator

Individuals requiring special accomodations, auxiliary aids or services should contact Guam EPA at 300.4751/2.

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GUAM DAILY POST • MONDAY, AUGUST 5, 2019

GUAM ENVIRONMENTAL PROTECTION AGENCY
AHENSIAN PRUTEKSION LINA'LA GUAHAN

NOTICE OF PUBLIC HEARING
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/s/ Walter S. Leon Guerrero, Administrator

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20-009 HWMP 10/4/19

EDWARD M. BIRN
Director (Direktot)
EDITH C. PANGELINAN
Deputy Director (Sigundo Direktot)

DEPARTMENT OF ADMINISTRATION
DIPATTAMENTON ATMENESTRASION
DIRECTOR'S OFFICE
(Ufisinan Direktot)

Telephone (*Telifon*): (671) 475-1101/1250 • Fax (*Faks*): (671) 477-6788

LOURDES A. LEON GUERRERO
Governor (Maga'hâga)
JOSHUA F. TENORIO
Lt. Governor (Sigundo Maga'lâhi)

October 01, 2019

MEMORANDUM

TO: Mr. Walter S. Leon Guerrero, Administrator
Guam Environmental Protection Agency
FROM: Director, Department of Administration

SUBJECT: **5 GUAM CODE ANNOTATED, CHAPTER 9, ADMINISTRATIVE ADJUDICATION LAW, SECTION 9301(e)**

Buenas yan Hafa Adai Mr. Leon Guerrero,

Thank you for sending the **"DRAFT"** Rules and Regulations to enact and enforce Underground Storage Tanks (UST) pursuant to Title 10, Guam Code Annotated (GCA), Chapter 76, Article 1, Section 76104(f).

The Department of Administration has no objection to the **"DRAFT"**.

Thank you for your time and assistance pertaining to this matter.

Sinseramente,

EDWARD M. BIRN

cc: Edith C. Pangelinan, Deputy Director, DOA

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OCT 02 2019
Guam Environmental Protection Agency

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WALTER S. LEON GUERRERO, ADMINISTRATOR

SEP 27 2019

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Reference: 5 GUAM CODE ANNOTATED, CHAPTER 9, ADMINISTRATIVE ADJUDICATION LAW, SECTION 9301(e)

Hafa Adai Mr. Birn:

The Guam Environmental Protection Agency (Guam EPA) has completed its draft rules and regulations to enact and enforce Underground Storage Tanks (UST), pursuant to Title 10, Guam Code Annotated (GCA), Chapter 76, Article 1, Section 76104(f) that states:

> *The Administrator shall enact and enforce other rules and regulations as necessary to establish a UST program, which meets the requirements of Section 9004 of Subtitle I of the Resource Conservation and Recovery Act (RCRA).*

It is the understanding of Guam EPA that the draft UST rules and regulations does not include any classification specifications or wage and benefit determination, the Agency's intent is to comply with 5 GCA Section 9301(e), which requires a review and a written statement of approval from the Department of Administration. The Agency is seeking your written concurrence/approval with our draft UST rules and regulations so that we can include it as part of our administrative adjudication record to I Liheslaturan Guåhan.

For your kind consideration and expeditious review, attached herewith are the Agency's draft UST rules and regulations and Environmental Impact Statement. We understand that your department is not without its own personnel challenges, and we appreciate your assistance in helping our Agency meet its mission in protecting the island's human health and the environment.

Should you have any question(s) regarding the draft UST rules and regulations, please feel free to contact Mr. Vincent J Pereira or Mr. Michael O'Mallan at 671-300-4751/2.

Very Respectfully,

WALTER S. LEON GUERRERO
Administrator

Enclosure: Guam Draft UST Regulations

ECONOMIC IMPACT STATEMENT
FOR THE UNDERGROUND STORAGE OF REGULATED SUBSTANCES PROPOSED RULES AND REGULATIONS AS DETERMINED BY THE GUAM ENVIRONMENTAL PROTECTION AGENCY

The Guam Environmental Protection Agency (Guam EPA) seeks to propose rules and regulations for the underground storage of regulated substances by way of underground storage tanks (USTs). In accordance with 10 GCA §76104(d), and as enacted by passage of Guam Public Law 30-36 on June 19, 2009, the Guam EPA administrator shall "enact, modify, update, repeal, and enforce rules and regulations governing UST design, construction, installation, release detection and inventory control, compatibility, record maintenance, reporting, corrective action, closure, and financial responsibility in order to enforce this Chapter;"

The promulgation of these proposed rules and regulations seeks to administratively satisfy the following:

- Compliance with the United States Environmental Protection Agency's (USEPA) for governing local USTs in a manner that is consistent or more stringent with federal regulations under Resource Conservation and Recovery Act (RCRA), Subtitle I, and in accordance with 40 CFR 280;
- A requirement to achieve State Program Approval (SPA) for local primacy and funding to have sole authority over USTs on Guam, pursuant to 40 CFR 281;
- Adherence to the $250 annual fee associated with permitting a UST, in accordance with 10 GCA §76117(a); and
- Administer nominal fees that will allow Guam EPA to comply with RCRA I requirements such as regular release detection equipment testing and walkthrough inspections that seek to ensure proper operation and maintenance as keys for preventing and quickly identifying regulated substance releases.

At this present time, Guam does not have a SPA UST state program. Guam EPA administers a UST Program utilizing the federal regulations, rendering the regulated community to bear cost burdens to comply with both federal mandates and local statutes. These proposed regulations will incorporate current RCRA I requirements for USTs, and provide Guam with the proper administrative mechanism to move towards a single UST SPA program that will be aligned with federal regulations.

This proposed rulemaking action requires Guam EPA to implement regulations that mirror current RCRA I mandates without discretion to consider less restrictive alternatives. Guam EPA finds that imposing additional nominal fees along with the $250 annual permit fee is crucial to bolster environmental protection by increasing emphasis on properly operating and maintaining equipment. The lack of proper operation and maintenance of UST systems has been found to be one of the main causes of the release of regulated substances to the environment, which could have significant and adverse impacts on the environment, with substantial cleanup and remediation costs.

In the spirit of the Agency's compliance with transparency and open governance, Guam EPA hereby provides the following statements for consideration under requirements of 5 GCA §9301(f)(1-6). In addition, Guam EPA will also be including EPA's national Environmental Impact Statement that included Guam in its survey.

(1) The purpose and the need for the rule or regulation; an assessment of the risk and the cost of the imposed rules or regulation. In addition, government agencies proposing a new rule or regulation must include with the assessment, the justification for the new rule or regulation.

Guam EPA has determined that these proposed rules and regulations for USTs is unlikely to create a serious inconsistency or interference with any other actions planned or undertaken by other instrumentalities of the Government of Guam.

Considerations for this determination are as follows:

a) In 1988, USEPA promulgated a regulation for state approved UST programs (40 CFR Part 281). Since states are the primary implementers of the UST program, USEPA wanted to set up a process where state programs could operate in lieu of the federal program if certain requirements were met. 40 CFR Part 281 sets forth minimum requirements that Guam must meet to allow our regulations to operate in lieu of the federal regulations.

b) UST regulation is important in protecting our natural and fragile island environment from releases of petroleum products. Since December 1988, USEPA mandated states and US territories to develop and implement a UST program that would require facilities to upgrade their underground tanks to prevent spills, overfilling, and corrosion. This mandate led to the enactment of Guam Public Law 30-36 on June 19, 2009. Guam P.L. 30-36 provided for Guam EPA with the statutory authority to develop the island's UST Program.

c) Statutory authority to propose rules and regulations is codified in 10 GCA §76104(d). Furthermore, 10 GCA §76104(f) states the Guam EPA Administrator shall "enact and enforce other rules and regulations as necessary to establish a UST program, which meets the requirements of Section 9004 of Subtitle I of RCRA." These regulations are in accordance with 40 CFR Part 280 and 40 CFR 281.

d) These proposed UST rules and regulations will also seek to establish the following:
   a. Alignment with federal requirements that is similar to certain key provisions of the 2005 Energy Policy Act. The UST provisions of the Energy Policy Act focus on preventing releases. These provisions expand eligible uses of the Leaking Underground Storage Tank (LUST) Trust Fund and includes other provisions that govern inspections, operator training, delivery prohibition, secondary containment and financial responsibility, and cleanup of releases that contain oxygenated fuel additives;
   b. Assurance that owners and operators perform proper operation and maintenance;
   c. Address UST systems deferred in the 1988 UST regulations;
   d. An update to the requirements on current technology and practices; and
   e. Technical and editorial corrections in operation and maintenance of USTs as needed.

(2) The financial impact of the proposed rule or regulation upon those persons or corporation entities directly affected by the proposed rule or regulation, and upon the people and the economy of Guam.

There are approximately 150 facilities on island that collectively own 331 regulated USTs. Of these facilities, about 100 non-governmental entities own regulated USTs. The remaining USTs are owned by the state or federal government.

Calendar Year	*Interim Permit Fee*[1]	*Number of Tanks*	*Amount*
2019	*$250.00*	*282*	*$70,500.00*
2018	*$250.00*	*282*	*$70,500.00*
2017	*$250.00*	*282*	*$70,500.00*
2016	*$250.00*	*282*	*$70,500.00*

[1]*A $250.00 annual fee associated with permitting a UST is already codified in statute, and is assessed in accordance with 10 GCA §76117(a).*

Guam EPA reiterates that these proposed rules and regulations are administrative in nature, and will have little to no adverse financial impacts on public and private entities since all UST owners and operators have been subjected to fees that are associated with federal regulations under 40 CFR Part 280 and Guam P.L. 30-36. The promulgation of these rules and regulations is the final step for Guam to achieve SPA. With SPA, the regulated community will be subjected to fees and fines from a single local regulation, as opposed to both local and federal regulations at this current time.

Type of Application	*Permits*	*Variance*
Permit Application Fee per Tank (New Installation)	*$500.00*	*$550.00*
Permit to Operate Fee per Tank (Annual)	***$250.00***	***Interim Fee***
Permit to Transfer	*$250.00*	
Permit to Modify	*$150.00*	*$200.00*
Permit to Close	*$500.00*	*$550.00*
Permit to Install OWS	*$500.00*	*$550.00*
Permit to Close OWS	*$500.00*	
Request for Proposal (Copy)	*$25.00*	
Installer's Certification (2 years)	*$150.00*	
Operator's Certification A & B (2 years)	*$150.00*	
Operator's Re-Certification (2 years)	*$100.00*	

For Guam to achieve SPA, it is critical to ensure administrative compliance with 40 CFR Part 281. These proposed rules and regulations also seek to safeguard the island from potential environmental calamities, with economic benefits in mind, especially after considering the impacts of impending military buildup, and other future development on our island. Nominal fees outlined above will enhance the Agency's ability to ensure adherence to 40 CFR Part 280 in the best interest in protecting our island's fragile environment:

(3) Any potential increase or decrease in the price or availability of any good or service on Guam directly or indirectly attributable to the proposed rule or regulation.

The Agency does not anticipate any increase or decrease in the cost of living, nor does it anticipate any specific increase or decrease in the price or availability of any goods or services on Guam, as a result of these proposed rules and regulations.

(4) Any direct or indirect impact upon employment on Guam or any increase or decrease in the availability of a particular job or jobs in general, attributable to the proposed rule or regulation.

There are no monetary costs or benefits to the Agency or other regulatory agencies associated with the proposed rules and regulations. Guam EPA's UST program personnel receive regulatory documentation requiring review for closure reports, site assessments, permit applications, installation notification forms, release notifications, and release response reports in compliance with the October 13, 2015 federal UST requirements.

In a market setting where producer cannot reliably pass through cost, the most significant economic impacts are related to reduce facility profits. In some cases, managers can cut supply or employment costs (this could result in smaller worker paychecks). In cases where costs exceed facility profits, it is likely that in the long term a facility would exit the market. A critical factor, therefore, is an estimated of average firm or facility profit.

A more likely response by affected firms will be to adapt by increasing prices on higher margin products and services. While overall employment impacts are unclear, it is possible that there may be an increase in labor demand due to the additional requirements placed on owners and operator, and additional demand for third-party testing services.

(5) Any increase or decrease in the cost of doing business as an enterprise or industry on Guam, or any increase or decrease in doing business in general, attributable to the proposed rule or regulation.

The average cost of removal/closure and replacement of tank systems varies widely and depends on a number of factors, including the number and size of tanks in a tank system, the amount of piping, and location variables such as the depth to the water table.

According to local contractors who perform this type of work, removal of three 10,000-gallon single-walled tanks and installation of three 10,000-gallon tanks with secondary containment could cost anywhere from $350,000 to $750,000, depending on site conditions. This is equivalent to approximately to $4,000 to $8,000 per tank per year over the 30-year life of the tanks. The cost of replacing piping for an average gas station site is estimated to be $25,000 to $42,000. These estimates include the cost of a site assessment, but do not include remediation costs.
The most common tank configuration at small businesses with singled-walled USTs is one to three tanks ranging in size from 8,000 to 10,000 gallons, so these cost estimates are on the high side. About one third of the affected small businesses will incur much lower costs to replace significantly smaller tanks or only one 10,000-gallon tank.

During the course of replacing old UST systems, tank owners may also incur cost for remediation. UST system owners and operators are already required to have financial assurance (insurance, surety bond, letter of credit, etc.) covering a minimum of $500,000 in remediation costs. The Agency is aware of cases where cleanups have cost more than one million dollars, but

costs around $100,000 are typical. These cost are not associated with the proposed rules; however, the requirement to provide tanks and piping installed or prior to August 9, 2013, with secondary containment may result in UST system owners incurring remediation costs sooner than would otherwise be the case.

(6) Any adverse or beneficial economic impact which is attributable to the proposed rule or regulation.

The economic impacts associated with the costs of these proposed rules and regulations could include changes in facility operation and closure of facilities due to cost increases under the regulation.

In addition, the UST regulations may create negative and positive employment impacts, including both reductions in employment to reduce costs and increases in employment to ensure implementation of regulatory provisions. Finally, the regulation may affect public spending related to cleanup of contaminated sites.

Assessment of the Potential Costs, Benefits, and Other Impacts of the Proposed Revisions to EPA's Underground Storage Tank Regulations

Prepared for:

Policy and Standards Division, Office of Underground Storage Tanks,
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August 2011

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Acronyms And Terms

AHFDS – Airport Hydrant Fuel Distribution System

ASTSWMO – Association of State and Territorial Solid Waste Management Officials

ATG – Automatic Tank Gauge / Gauging – an automated process that monitors product level and provides inventory control

BLS – United States Bureau of Labor Statistics

BTEX – Benzene, Toluene, Ethylbenzene, and Xylenes

CFR – Code of Federal Regulations

CITLD – Continuous In-Tank Leak Detection

EGT – Emergency Generator Tank

EPA – United States Environmental Protection Agency

EPAct – Energy Policy Act of 2005

FCT – Field-Constructed Tank

Fill pipe – The access by which the tank is filled

IRS – United States Internal Revenue Service

LLD – Line Leak Detector / Detection – a device that alerts the tank operator to the presence of a leak in underground piping by restricting or shutting off the flow of product through the piping, or by triggering an audible or visible alarm

LUST – Leaking Underground Storage Tank

MIDAS - Modeling of Infection Diseases Agents Study

NACS – National Association of Convenience Stores

NAICS – North American Industry Classification System

NRDA – Natural Resource Damage Assessment

OMB – United States Office of Management and Budget

OUST – Office of Underground Storage Tanks, United States Environmental Protection Agency

PAHs – Polycyclic Aromatic Hydrocarbons

Pd – Probability of detection

Pfa – Probability of false alarm

RFA – Regulatory Flexibility Act

SBA – United States Small Business Administration

SBREFA – Small Business Regulatory Enforcement Fairness Act of 1996

SDWA – Safe Drinking Water Act

SIR – Statistical Inventory Reconciliation – a leak detection method where inventory, delivery, and dispensing data is statistically analyzed

SISNOSE – Significant Impact on a Substantial Number of Small Entities

SPA – State Program Approval

SPCC – Spill Prevention, Control, and Countermeasure

Spill bucket – A contained sump installed at the fill and/or vapor recovery connection points to contain drips and spills that can occur during delivery

Sump – A subsurface area pit designed to provide access to equipment located below ground, and, when contained, to prevent liquids from releasing into the environment

TPH – Total Petroleum Hydrocarbons

Turbine sump – A sump designed to provide access to the turbine area above the tank

TVM – Time value of money

UDC – Under-Dispenser Containment – a device for collecting fluids spilled beneath a dispenser (pump) (e.g. dispenser pan)

UMRA – Unfunded Mandates Reform Act

UST – Underground Storage Tank

VSL – Value of a Statistical Life

WA – Work Assignment

WTP – Willingness to Pay

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Executive Summary

Overview

In 1984, Congress responded to the increasing threat to groundwater from leaking underground storage tank (UST) systems by adding Subtitle I to the Solid Waste Disposal Act (SWDA). SWDA required the U.S. Environmental Protection Agency (EPA) to protect the environment and human health from UST releases by developing a comprehensive regulatory program for UST systems storing petroleum or certain hazardous substances. In 1986, Congress amended Subtitle I of SWDA and created the Leaking Underground Storage Tank Trust Fund (LUST Trust Fund) to oversee and pay for cleanups at sites where the owner or operator is unknown, unwilling to pay, or unable to pay.

EPA promulgated the UST regulation in 1988 (40 CFR Part 280). This regulation set minimum standards for new tanks and required owners and operators of existing tanks to upgrade, replace, or close them. The 1988 regulation set deadlines for owners and operators to meet the new requirements. In 1988, EPA also promulgated a regulation for state program approval (40 CFR Part 281). EPA has not significantly changed these regulations since 1988. In 2005, the Energy Policy Act (EPAct) further amended Subtitle I of SWDA. EPAct requires states that receive federal Subtitle I money from EPA to meet certain requirements. EPA developed grant guidelines for states regarding operator training, inspections, delivery prohibition, secondary containment, financial responsibility for manufacturers and installers, public record, and state compliance reports on government UST systems.

After Congress passed EPAct, EPA decided to revise the 1988 UST regulation (at 40 CFR Part 280), primarily to ensure parity in Indian country. Key EPAct provisions (such as secondary containment and operator training) apply to all states receiving federal Subtitle I money, regardless of their state program approval status; but these key provisions do not apply in Indian country (or in states and U.S. territories that do not meet EPA's operator training or secondary containment grant guidelines). In order to establish federal UST requirements similar to the UST secondary containment and operator training requirements of EPAct, EPA decided to revise the 1988 UST regulation. Without these changes, EPAct provisions will not apply in Indian country. These proposed revisions will also fulfill the objectives of the EPA-Tribal UST Strategy (August 2006) in which both EPA and tribes recognized it is important to ensure parity in implementing UST program requirements in states and territories, as well as in Indian country.[1]

EPA decided now is also an appropriate time to change the 1988 UST regulation. While EPA has issued many guidance documents and used various implementation approaches and techniques over the last twenty years, we have not made significant changes to the original 1988 regulation. Indeed, most states have passed requirements that go far beyond the original federal regulation. These regulations fully implement provisions of the EPAct and improve important aspects of the existing (outdated) regulations. Furthermore, while information on sources and causes of releases show that releases from tanks are less common than they once were, releases

[1] See http://www.epa.gov./oust/fedlaws/Tribal%20Strategy_08076r.pdf

from piping and spills and overfills associated with deliveries have emerged as more common problems.[2] Releases at the dispenser have also emerged as one of the leading sources of releases. The lack of proper operation and maintenance of UST systems is a main cause of release from these areas. The proposed revisions focus on ensuring equipment is properly maintained and working, and highlight the importance of operating and maintaining UST equipment so releases are prevented and detected early in order to avoid or minimize potential soil and groundwater contamination.

EPA worked diligently to ensure our proposed regulation development process was open and transparent. Over a two year period, we provided all stakeholders – state and tribal regulators; federal facilities; petroleum industry members, including representatives of owners and operators; equipment manufacturers; small businesses; local governments; and environmental and community groups – an opportunity to share their ideas and concerns through a variety of meetings, conference calls, and email exchanges. EPA thoroughly considered all input as we developed the proposed UST regulation changes.

Proposed Regulatory Changes

EPA is proposing to revise the 1988 UST regulation in order to: establish federal requirements similar to certain key provisions of the EPAct; ensure owners and operators perform proper operation and maintenance; address deferrals; update the regulation to current technology and practices; and make technical and editorial corrections. Specifically, EPA is proposing these revisions (hereafter the Preferred Option):

- Establish federal requirements for secondary containment and operator training similar to those established by the EPAct for states that receive federal Subtitle I money

- Add operation and maintenance requirements
  - Walkthrough inspections
  - Spill prevention equipment tests
  - Overfill prevention equipment tests
  - Interstitial integrity tests
  - Operability tests for release detection methods

- Address existing 40 CFR 280 deferrals
  - Require release detection for emergency generator UST systems
  - Remove deferrals and regulate airport hydrant fuel distribution systems (AHFDSs) and UST systems with field-constructed tanks (FCTs) with alternate release detection requirements
  - Remove deferrals for wastewater treatment tanks

[2] U.S. Environmental Protection Agency, Office of Underground Storage Tanks, "Evaluation of Releases from New and Upgraded Underground Storage Tank Systems – Peer Review Draft," U.S. EPA, August 2004, and U.S. Environmental Protection Agency, Office of Underground Storage Tanks, "Petroleum Releases at Underground Storage Tank Facilities in Florida," draft, March 2005.

- Provide for other changes to improve release prevention and detection and program implementation
  - Require testing after repairs to spill and overfill prevention equipment, and interstices
  - Eliminate flow restrictors in vent lines as an overfill prevention option for all new tanks and when overfill devices are replaced
  - Require closure of lined tanks that cannot be repaired according to a code of practice
  - Address responses to interstitial monitoring alarms
  - Notification requirement of ownership change
  - Eliminate groundwater and vapor monitoring as release detection methods
  - Establish requirements for determining compatibility

- Make general updates to the regulation
  - Reference newer technologies, including explicitly adding statistical inventory reconciliation (SIR) and continuous in-tank leak detection (CITLD) as release detection methods
  - Update codes of practice listed in the regulation
  - Remove old upgrade and implementation deadlines
  - Make editorial and technical corrections

- Revise state program approval (40 CFR Part 281) to be consistent with the above revisions

In addition to the Preferred Option, EPA considered two other regulatory alternatives, described as Alternative 1 and Alternative 2. Alternative 1 is overall more stringent than the Preferred Option. Alternative 2 is overall less stringent than the Preferred Option. Exhibit ES-1 summarizes the requirements under each alternative.

EPA designed this assessment to satisfy the Office of Management and Budget's (OMB) requirements for regulatory review under Executive Order 12866 (as amended by Executive Order 13258), which applies to any significant regulatory action. This document also fulfills these requirements:

- Regulatory Flexibility Act, as amended by Small Business Regulatory Enforcement Fairness Act of 1996
- Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*
- Executive Order 13045, *Protection of Children From Environmental Health Risks and Safety Risks*
- Unfunded Mandates Reform Act of 1995
- Executive Order 13175, *Consultation and Coordination With Indian Tribal Governments*
- Executive Order 13132, *Federalism*

- Executive Order 13211, *Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use*

Exhibit ES-1

Options Considered For The Proposed Rule

Requirement Description	Options		
	Preferred	**Alternative 1**	**Alternative 2**
Release Prevention			
Walkthrough inspections	Monthly	Monthly	Quarterly
Overfill prevention equipment tests	3 year	1 year	3 year
Spill prevention equipment tests	1 year	Require replacement every 3 years, no testing	1 year
Interstitial integrity tests	3 year	1 year	Not required
Testing after repairs to spill and overfill prevention equipment, and interstices	Required	Required	Required
Elimination of flow restrictors in vent lines for all new tanks and when overfill devices are replaced	Required	Required	Not required
Release Detection			
Operability tests for release detection methods	1 year	1 year	3 year
Change leak rate probabilities from 95/5 to 99/1 (Pd/Pfa)	Not required	Required	Not required
Add SIR and CITLD to regulation with performance criteria	Required	Required	Required
Response to interstitial monitoring alarms	Required	Required	Required
Eliminate groundwater and vapor monitoring as release detection methods	Eliminate in 5 years	Eliminate immediately	Not required
Remove deferral for emergency generator tanks	Required	Required	Required
Other			
Require notification of ownership change	Required	Required	Required
Closure of lined tanks that cannot be repaired according to a code of practice	Required	Required	Required
Requirements for determining compatibility	Required	Required	Required
Remove deferrals for airport hydrant fuel distribution systems and UST systems with field-constructed tanks	Regulate under alternative release detection requirements	Regulate under release detection requirements for conventional UST systems	Maintain deferrals
EPAct-related Provisions			
Operator training	Required	Required	Required
Secondary containment	Required	Required	Required

Summary of Findings

Within the constraints of data availability, EPA in this analysis identified all quantifiable and qualitative impacts for this proposed rule. EPA obtained sufficient data to identify, by state, the number of units likely to be affected by each proposed change in the proposed rule. In our analysis, we used these data to assess the compliance costs imposed upon units and relevant state governments. In conducting these analyses, EPA also assessed the sensitivity of outcomes to key assumptions. Separately, the analysis monetizes a number of impacts of the proposed rule including: avoided costs generated by avoided releases; reduction in severity of releases; avoided product loss; avoided vapor intrusion damages; and a subset of human health benefits.

This analysis quantifies, but does not value, groundwater impacts. Finally, due to data and resource limitations, EPA in this analysis was unable to quantify or value a subset of human health benefits and ecological impacts, but addressed these qualitatively.

In addition to identifying costs and positive impacts, EPA in this analysis also examined the economic and distributional impacts of the proposed rule. The economic impact analysis includes the proposed rule's effect on facility closures, employment, and energy output and cost. In the analysis of the proposed rule's distributional impacts, we examined small business impacts, effects on minority and low-income populations, impacts on children's health, and potential impacts on state financial assurance funds. Finally, EPA's analysis considered the proposed rule's impacts related to certain executive orders and statutes, including Unfunded Mandates Reform Act, tribal governments, and federalism.

The main conclusions of this analysis are:

- Compliance costs[3] – EPA estimated $210 million in annual compliance costs for the proposed rule. Costs range from approximately $130 million under Alternative 2 to $520 million under Alternative 1.

- State and local government costs – Annual state and local government costs, including compliance costs to UST systems owned or operated by state and local governments, state program approval costs, and state costs for processing ownership changes, and one-time notifications for previously deferred systems are approximately $9 million. These range from approximately $7 million under Alternative 2 to $19 million under Alternative 1.[4]

- Avoided costs – Avoided remediation costs form the majority of positive impacts from the proposed rule. EPA estimated the proposed rule will avoid total costs of $300 million per year to $740 million per year under the Preferred Option. This includes: $300 million to $700 million in avoided remediation costs from avoided releases and avoided groundwater contamination incidents; $0.4 million to $26 million in avoided vapor intrusion remediation costs; and approximately $2 million to $7 million in avoided product loss. Total avoided costs range from $310 million to $770 million under Alternative 1 and from $110 million to $590 million under Alternative 2.

[3] Compliance costs include direct compliance costs and state oversight costs. For this regulatory impact analysis, direct compliance costs and state oversight costs provide a reasonable proxy to assess the proposed rule's social costs. See Chapter 3.1 for further discussion.

[4] If all applicable state and local government costs were incurred in the first year, rather than annualized and discounted, state and local governments would incur approximately $7 million in costs under the Preferred Option. This includes $0.9 million for states to apply for state program approval and to read the regulations, $0.6 million for states to process one-time notifications of EGTs, AHFDSs, and FCTs, and ownership changes that occur in the first year, and $5.6 million for state and local government owners and operators of UST systems to comply with requirements that come into effect in the first year (approximately 47% of which would be for state and local government owners and operators to read the proposed regulation).

- Benefits – Due to data and resource constraints, EPA only quantified human health benefits from avoided benzene-related cancer and was unable to quantify or monetize many of the proposed rule's benefits. The benefits from avoided benzene-related cancer total less than $5,000 per year. In addition, EPA estimated the proposed rule could potentially protect 110 billion to 350 billion gallons of groundwater each year.[5] Categories of nonmonetizable or nonquantifiable benefits that are qualitatively discussed in this analysis include: avoidance of nonbenzene health risks, mitigation of acute exposure events and large-scale releases (e.g., releases from airport hydrant fuel distribution systems and UST systems with field-constructed tanks[6]), and protection of ecological biota.

- Compliance costs and avoided costs under the alternative baseline – Under the alternative baseline scenario that assumes declines in the universes of both UST systems and releases over time, EPA estimated $200 million in annual compliance costs for the proposed rule. Annual compliance costs in the alternative baseline scenario range from $120 million under Alternative 2 to $510 million under Alternative 1. EPA also estimated total avoided costs of $180 million to $440 million under the Preferred Option in the alternative baseline scenario. These avoided costs range from $64 million to $360 million under Alternative 2 to $180 million to $460 million under Alternative 1.

- Average economic impacts – Motor fuel retailers, which account for roughly 80 percent of UST systems, are expected to bear approximately 70 percent of the total costs under the Preferred Option. To establish how the proposed rule may impact the market, EPA examined whether it imposes a cost greater than the average after-tax profit margin of 1.5 percent for motor fuel retailers.[7] Using this benchmark, we estimate approximately 560 firms may exit the market if they cannot pass costs through to customers. This number represents less than one percent of the total universe of facilities.[8]

- State financial assurance funds – Decreases in release frequency and severity may decrease payments required of state financial assurance funds by $150 million per year or more under the Preferred Option. To the extent that these funds are

[5] See chapter 4.10 for details on how this estimate was derived.

[6] For example, an estimated 300,000 to 500,000 gallons of fuel was released from a 2.1 million gallon underground field-constructed tank at a fuel depot in Portsmouth, VA. Free product was found within 20 feet of a nearby creek in 1987. The release was attributed to tank and/or piping failures. Another example is Pease Air Force Base, where jet fuel was delivered to the runway apron via an underground fueling system. Historical leakage from the system contaminated soil and groundwater, forming groundwater plumes at many sites along the system. A site release study identified 60 to 70 release points with varying degrees of severity along the refueling system line with free product found under the apron at closure.

[7] When costs exceed facility profits, it is likely that in the long-term, the facility would exit the market.

[8] In comparison, between 2005 and 2008, the number of gas station facilities decreased an average of 1.4 percent per year (or 2,400 stations per year).

maintained by taxes other than those assessed on UST operators, decreases in these payments effectively represent a reallocation of costs from public entities to the private entities responsible for releases.

Assessment of Compliance Costs

For this regulatory impact analysis, direct compliance costs and state oversight costs provide a reasonable proxy to assess the proposed rule's social costs for the following reasons:

- The regulatory requirements generally focus on additional testing and inspection of existing equipment and do not reflect large-scale investments in equipment or significant changes to operations at the facility level. In addition, the facilities affected by the proposed rule are distributed with relative geographic uniformity for consumers and producers.

- Given the relatively small facility costs of less than $900 per year for the average facility, closures or changes in market structure represent an unlikely response to the proposed rule. According to the 2002 Economic Census, average revenues in the retail motor fuel sales sector were approximately $2.1 million; the corresponding cost-to-sales ratio for the average facility is less than one-tenth of one percent. Therefore, it is unlikely significant changes to production or consumer behavior will affect social costs.

- The short- and long-run impacts of the proposed rule are not likely to differ significantly. Testing and inspection requirements may offer some opportunities for owners and operators to reduce costs by learning over time, but they are not likely to reduce costs enough to facilitate large-scale equipment upgrades.

EPA's calculation of total incremental compliance costs for UST facilities reflects two key components: identifying specific measures necessary for compliance at individual facilities and calculating costs associated with each of these measures. To estimate these costs, EPA developed a compliance cost model that identifies incremental equipment and labor requirements for an individual system. Based on the baseline equipment use profile, existing state regulations, and anticipated responses to the proposed regulation, the model then generates system-specific estimates of compliance costs. Compliance costs include labor and capital costs associated with new equipment and installation, inspection, testing, and recordkeeping. The model also includes other compliance costs, such as those associated with more frequent detection of equipment failure and repair of equipment. Some component costs are specific to individual UST system configurations – for example, airport hydrant fuel distribution systems or UST systems with field-constructed tanks – while others are consistent across all system types. Exhibit ES-2 summarizes the findings of our analysis of compliance costs.

Exhibit ES-2

Total Annual Compliance Costs[d,e]

Category	Preferred Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Conventional UST systems[a]	$180	$360	$120
Emergency generator tanks (EGTs)	$2.2	$2.2	$2.1
Airport hydrant fuel distribution systems (AHFDSs)	$18	$120	$0.0
UST systems with field-constructed tanks (FCTs)	$4.6	$33	$0.0
Cost to owners and operators to read regulations	$5.1	$5.1	$5.1
State government administrative costs[b]	$0.2	$0.2	$0.2
Total Annual Compliance Costs[c,e]	**$210**	**$520**	**$130**

[a] Conventional UST systems include all systems that are not AHFDSs, FCTs, or EGTs.
[b] The costs for UST systems directly owned or operated by local, state, and federal government entities are included in the estimates of compliance costs within the other categories (see Exhibit ES-6). Costs shown here reflect the administrative costs for state governments to read the regulations, apply for state program approval, process notifications of ownership changes, and process one-time notifications of EGT, AHFDS, and FCT existence.
[c] Totals may not add up due to rounding.
[d] Cost estimates were derived using a seven percent discount rate.
[e] Compliance costs include direct compliance costs and state oversight costs. For this regulatory impact analysis, direct compliance costs and state oversight costs provide a reasonable proxy to assess the proposed rule's social costs. See Chapter 3.1 for further discussion.

Assessment of Benefits and Cost Savings

Avoided remediation costs provide the basis for a substantial portion of the beneficial impacts associated with the proposed rule. Avoided remediation costs of the proposed rule represent cost savings that accrue to owners, operators, and public entities charged with remediating releases at regulated facilities. EPA obtained remediation costs from a survey of state leaking UST programs and estimates of the distribution of releases by UST system area from internal research.[9] EPA identified five UST technical experts who provided professional judgment regarding the proposed rule's effects on reduction in release frequency (number of releases per year) and release severity (as measured by groundwater incidents averted). This body of knowledge allowed EPA to estimate total avoided costs, as well as avoided costs per requirement. EPA also estimated avoided costs associated with vapor intrusion and product loss, though these avoided costs are not allocated across requirements.[10]

In addition to avoided costs, the analysis monetized avoided benzene cancer risks from avoided contaminated groundwater and quantified volume of groundwater protected. These benefits assume that exposure risk is eliminated at the time of discovery and cleanup, and are

[9] Office of Underground Storage Tanks, *Evaluation of Releases from New and Upgraded Underground Storage Tank Systems – Peer Review Draft*, U.S. EPA, August 2004.

[10] These costs were not allocated because we did not ask the experts to estimate quantitatively how different regulatory requirements would specifically affect vapor intrusion or product loss. Vapor intrusion frequency and cost data rely on general information we received from several states, and are typically recorded as additional remedial activities at some groundwater sites. The likelihood of vapor intrusion, however, is driven by proximity of receptors and by geology, and is not predictably related to the size or age of a plume. Product loss estimates rely on data from Florida and other sources for typical release sizes and are mapped to the estimates of avoided releases.

therefore additive to avoided cleanup costs. Finally, the analysis provided a qualitative discussion of avoided acute events and exposure (including large-scale releases, such as those from airport hydrant fuel distribution systems and UST systems with field-constructed tanks), ecological benefits, and avoided nonbenzene human health risks. These findings are summarized in Exhibit ES-3 below.

Exhibit ES-3

Summary Of Annual Positive Impacts[e]

Type Of Impact	Preferred Option (2008$ millions)	Alternative 1 (2008$ millions)	Alternative 2 (2008$ millions)
Monetized Benefits			
Avoided cancer risks[a,c]	$0.001 - $0.005	$0.002 - $0.005	$0.001 - $0.003
Monetized Avoided Costs			
Releases and groundwater incidents[b]	$300 - $700	$300 - $740	$110 - $570
Vapor intrusion	$0.4 - $26	$0.5 - $28	$0.2 - $19
Product loss	$2.0 - $7.2	$2.6 - $7.6	$0.4 - $5.3
Total[c]	**$300 - $740**	**$310 - $770**	**$110 - $590**
Nonmonetized Impact[d]			
Groundwater protected (billion gallons)	110 - 350	120 - 370	41 – 250
Acute events and large-scale releases (e.g., AHFDS and FCT releases)	Not estimated	Not estimated	Not estimated
Ecological benefits	Not estimated	Not estimated	Not estimated
Nonbenzene human health risks	Not estimated	Not estimated	Not estimated

[a] The pathway assessed to evaluate avoided cancer risk is benzene exposure through contaminated groundwater.
[b] Monetized avoided costs are substantially lower in Alternative 2 relative to the Preferred Option due to differing requirements between these options, particularly walkthrough inspections. Alternative 2, overall, is less stringent than the Preferred Option, and therefore prevents fewer releases because systems do not require the same frequency of inspection and repair. For additional information, see Chapter 4.
[c] Avoided cancer risks and avoided costs are separate and additive (i.e., these estimates do not overlap). Avoided cancer risks are the benefits associated with reducing cancer cases prior to discovery of the release. Avoided remediation costs from releases and groundwater incidents are the costs related to site remediation. Avoided vapor intrusion costs include additional avoided costs associated with the remediation of vapor intrusion cases; the RIA does not address human health risk associated with vapor intrusion. Avoided product loss costs are also separate and additive.
[d] Due to data and resource constraints, EPA was unable to monetize some of the positive impacts of the proposed rule. Chapter 4 provides a qualitative discussion of these benefits.
[e] Totals may not add up due to rounding. Cost estimates were derived using a seven percent discount rate.

Comparison of Compliance Costs and Positive Impacts

Exhibit ES-4 summarizes the compliance costs and positive impacts of the proposed rule. The majority of measurable positive effects occur as avoided remediation costs. Monetized social benefits occur only in the form of avoided cancer cases from groundwater contamination and constitute only a very small part of overall effects. Nevertheless, as discussed in Chapter 4, avoided costs provide a reasonable measure of the positive effects of the proposed rule.

Exhibit ES-4

Comparison Of Annual

Compliance Costs, Cost Savings And Monetized Benefits[g,h]

	Preferred Option (2008$ millions)	Alternative 1 (2008$ millions)	Alternative 2 (2008$ millions)
Annual Monetized Benefits			
Avoided cancer risks[a,e]	$0.001 - $0.005	$0.002 - $0.005	$0.001 - $0.003
Annual Avoided Costs[e]			
Releases and groundwater incidents	$300 - $700	$300 - $740	$110 - $570
Vapor intrusion	$0.4 - $26	$0.5 - $28	$0.2 - $19
Product loss	$2.0 - $7.2	$2.6 - $7.6	$0.4 - $5.3
Annual Compliance Costs			
Conventional UST systems[b]	$180	$360	$120
Emergency generator tanks (EGTs)	$2	$2	$2
Airport hydrant fuels distribution systems (AHFDSs)[c]	$18	$120	N/A
UST systems with field-constructed tanks (FCTs)[c]	$5	$33	N/A
Cost to owners and operators to read regulations	$5	$5	$5
State government administrative costs[d]	$0.2	$0.2	$0.2
Total Annual Benefits and Avoided Costs	**$300 - $740**	**$310 - $770**	**$110 - $590**
Total Annual Compliance Costs[h]	**$210**	**$520**	**$130**
Net Cost (Savings) To Society [Total Compliance Costs *less* Total Benefits and Avoided Costs]	**($530) - ($90)**	**($250) - $210**	**($460) - $20**
Nonmonetized Benefits[f]			
Groundwater protected (billion gallons)	110 - 350	120 - 370	41 - 250
Acute events and large-scale releases (e.g., AHFDS and FCT releases)	Not estimated	Not estimated	Not estimated
Ecological benefits	Not estimated	Not estimated	Not estimated
Nonbenzene human health risks	Not estimated	Not estimated	Not estimated

[a] The pathway for avoided cancer risk is contaminated groundwater.

[b] Conventional UST systems include all systems that are not AHFDSs, FCTs, or EGTs.

[c] We estimate there are 239 UST systems with FCTs and 162 AHFDSs that could be affected by the proposed regulation. For additional information regarding the assumptions and costs used in this analysis for these systems, see Appendix A.

[d] The costs for UST systems directly owned or operated by local, state, and federal government entities are included in the estimates of compliance costs within the other categories. Costs shown here reflect the administrative costs for state governments to read the regulation, apply for state program approval, process notifications of ownership changes, and process one-time notifications of EGT, AHFDS, and FCT existence.

[e] Avoided cancer risks and avoided costs are separate and additive (i.e., these estimates do not overlap). Avoided cancer risks are the benefits associated with reducing cancer cases prior to discovery of the release. Avoided remediation costs from releases and groundwater incidents are the costs related to site remediation. Avoided vapor intrusion costs include additional avoided costs associated with the remediation of vapor intrusion cases; the RIA does not address human health risk associated with vapor intrusion. Avoided product loss costs are also separate and additive.

[f] Due to data and resource constraints, EPA was unable to monetize some of the positive impacts of the proposed rule. Chapter 4 provides a qualitative discussion of these benefits.

[g] Totals may not add up due to rounding. Cost estimates were derived using a seven percent discount rate.

[h] Compliance costs include direct compliance costs and state oversight costs. For this regulatory impact analysis, direct compliance costs and state oversight costs provide a reasonable proxy to assess the proposed rule's social costs. See Chapter 3.1 for further discussion.

Exhibit ES-5 summarizes the compliance costs and positive impacts of the proposed rule under an alternative baseline where universes of UST systems and releases are assumed to decrease at a declining rate over time. Compliance costs decline slightly under the alternative baseline relative to the primary analysis due to a small decrease in affected systems. Avoided costs decline by approximately 40 percent, as the universe of releases contracts substantially under the alternative baseline.

Exhibit ES-5

Comparison Of Annual

Compliance Costs, Cost Savings And Monetized Benefits Using An Alternative Baseline

	Preferred Option (2008$ millions)	Alternative 1 (2008$ millions)	Alternative 2 (2008$ millions)
Total Annual Benefits and Avoided Costs	**$180 - $440**	**$180 - $460**	**$64 - $360**
Total Annual Compliance Costs	**$200**	**$510**	**$120**
Net Cost (Savings) to Society [Total Compliance Costs *less* Total Benefits and Avoided Costs]	**($240) - $20**	**$50 - $330**	**($240) - $56**

Note: Cost estimates were derived using a seven percent discount rate.

Economic Impacts

EPA's assessment of the economic impacts associated with this proposed rule focused on the retail motor fuels sector, which accounts for approximately 80 percent of UST owners or operators. In this analysis, EPA described supply and demand dynamics within the retail motor fuels market and the likely economic responses to increased compliance costs. Our screening assessment found that average estimated facility-level costs of $890 may result in the market exit of approximately 560 facilities, if these facilities cannot pass any regulatory costs through to customers. This represents less than half of one percent of existing retail motor fuel facilities, and an even smaller fraction of all facilities affected by the proposed rule.

To address uncertainty related to the distribution of costs among UST facilities, we also presented a worst case sensitivity analysis, which identified the maximum number of facilities that could face significant economic impacts due to regulatory costs. We defined the worst case as the scenario where the highest possible cost occurred for the smallest facilities. We found that up to 6,100 facilities (roughly four percent of existing retail motor fuel facilities) may exit the market in this unlikely worst-case scenario. The limited magnitude of impacts even in the worst case scenario suggest that the proposed rule will not affect existing consolidation trends in the retail motor fuels industry, or retail motor fuel prices or consumption.

In addition, EPA's analysis suggests that the proposed rule could result in a reallocation of costs from the public to private parties responsible for releases.[11] The prevention of releases under this rule would increase compliance costs to facility owners, but the avoided releases

[11] For additional information regarding this issue, see Chapter 5.

would in many cases reduce remediation demand for taxpayer-funded state funds. This is likely to improve behavioral incentives, as the parties most likely to cause releases will also be responsible for preventing them. As discussed in Chapter 5, this reallocation could result in savings to state financial assurance funds in excess of $150 million per year.

Other Regulatory and Distributional Issues

As part of our analysis, we also assessed the proposed rule's potential impacts related to:

- Energy impacts – The proposed rule will not have significant adverse effects on energy supply, distribution, or use, including impacts on price and foreign supplies. It is, therefore, not a significant energy action under Executive Order 13211, *Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use* (May 18, 2001).

- Regulatory flexibility – EPA's analysis determined that approximately 1,350 small entities (roughly one percent of the universe of affected small entities) may experience economic impacts that exceed one percent of revenues. For various reasons, and especially due to different system configurations for smaller facilities, the actual number of affected entities is likely to be even fewer than the number estimated by the analysis. In comparison, this number is smaller than the recent industry consolidation rate of approximately 2,400 facilities per year in the retail motor fuels sector. The proposed rule is unlikely to have a significant economic impact on a substantial number of small businesses or small governments.

- Small government impacts – The proposed rule is not expected to have significant small government impacts. EPA's assessment of costs to state and local governments indicated that no government-owned UST facilities will experience costs that exceed one percent of revenues.

- Impacts on minority and low-income populations – Because the proposed rule would increase regulatory stringency and reduce the number and size of releases, the proposed rule is not expected to have any disproportionately high and adverse human health or environmental effects on minority or low income populations, or on any community.

- Children's health protection –While the risk assessment did not specifically measure exposure to children, adults are the more sensitive receptor for cancer effects of contaminated groundwater due to the longer potential exposure from showering (inhalation of vapors) compared to children (ingestion of water while bathing), particularly those under five who are assumed to take more baths and fewer showers. Therefore, EPA has no reason to believe that the proposed rule would have a disproportionate environmental health risk effect on children, as defined in Executive Order 13045, *Protection of Children From Environmental Health Risks and Safety Risks* (62 FR 19885, April 23, 1997). Moreover, because the proposed rule is expected to reduce exposure to contaminated groundwater by reducing the number and size of releases, EPA does not expect the proposed rule to have any adverse impact on children.

- Regulatory planning and review – Pursuant to the terms of Executive Order 12866 [58 FR 51735 (October 4, 1993)], EPA determined the proposed rule is an economically significant regulatory action because it may have an annual effect on the economy of $100 million or more, as defined in section 3(f)(1) of the order. Findings of the regulatory cost analysis in Chapter 3 indicate the rule, as proposed, is projected to result in aggregate annual compliance costs of approximately $210 million under the Preferred Option, $520 million under Alternative 1, and $130 million under Alternative 2.

- Unfunded mandates analysis – The proposed rule is subject to the requirements of sections 202 and 205 of the Unfunded Mandates Reform Act (UMRA) because it contains federal mandates that may result in the expenditure by state, local, and tribal governments or by the private sector of $100 million or more in any one year. Exhibit ES-6 provides references for EPA's analyses responding to UMRA requirements under which this proposed rule is subject.

Exhibit ES-6

Location Of Analyses Responding To UMRA Requirements

Requirement	Location In This Document
Identification of federal law provision under which the proposed rule is being promulgated	Chapter 1
Assessment of costs and benefits to state, local, and tribal governments and the private sector of the proposed rule	Chapters 3 and 4
Assessment of the effect of the proposed rule on health, safety, and the natural environment	Chapter 4
Assessment of the extent to which such costs of the proposed rule may be paid with federal financial assistance	Chapter 3; no federal assistance is anticipated
Assessment of the extent to which there are available federal resources to carry out this mandate	Chapter 3; no federal resources are anticipated
Estimates of future compliance costs of the proposed rule	Chapter 3
Estimates of disproportionate budgetary effects of the proposed rule on any type of government or private sector segment	Chapter 5
Estimates of the effect of the proposed rule on the national economy	Chapters 3 and 5

- Federalism – Executive Order 13132, *Federalism* (64 FR 43255, August 10, 1999), defines policies that have federalism implications to include regulations with substantial direct effects on states, on the relationship between the national government and states, or on the distribution of power and responsibilities among the various levels of government. EPA typically considers a policy to have federalism implications if it results in aggregate expenditures by state and/or local governments of $25 million or more in any one year. As Exhibit ES-7 below indicates, EPA does not expect any of the proposed options to have significant federalism implications.

Exhibit ES-7

Summary Of Annual Governmental Costs By Element[b]

Element	Preferred Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Local compliance costs[a]	$7.3	$15.0	$5.0
State compliance costs[a]	$1.8	$3.7	$1.3
State government administrative costs	$0.2	$0.2	$0.2
Total Costs To State And Local Governments	**$9.3**	**$19.0**	**$6.5**

[a] State and local government compliance costs are included in the total compliance costs presented in Exhibit ES-2.
[b] Cost estimates were derived using a seven percent discount rate.

- Tribal governments analysis – Executive Order 13175, *Consultation and Coordination With Indian Governments* (65 FR 67249, November 9, 2000), requires EPA to develop a process to ensure meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications. EPA consulted with tribal officials early in the process of developing this proposed regulation to welcome meaningful and timely input into its development. EPA began its consultation with tribes on possible changes to the UST regulation shortly after the passage of the Energy Policy Act of 2005. In addition to our early consultation with tribes, EPA also reached out again to tribes as we started the official rulemaking process and throughout the development of this proposed rule. EPA sent letters to leaders of over 500 tribes as well as to tribal regulatory staff to invite their participation in the development of the regulation. EPA heard from both tribal officials who work as regulators as well as representatives of owners and operators of UST systems in Indian country. The tribal regulators raised concerns about ensuring parity of environmental protection between states and Indian country. Today's proposed changes to the UST regulation are needed to ensure parity between UST systems in states and in Indian country. This regulation will ensure installed equipment is working properly to protect the environment from potential releases.

  As part of this analysis, EPA concluded the proposed rule will have tribal implications to the extent that tribally-owned entities with UST systems on Indian country would be affected. However, it will neither impose substantial direct compliance costs on tribal governments, nor preempt tribal law. Total costs to owners and operators of tribally-owned UST systems are approximately $0.7 million.

- Joint impacts of rules – Facilities in the UST system universe are affected by a number of existing regulations, including state regulations and Spill Prevention, Control, and Countermeasure (SPCC) rules. At the time of the 1988 UST regulation, completely buried tanks greater than 42,000 gallons and located near navigable waters of the U.S. or adjoining shorelines were subject to both UST rules and SPCC rules. Since then, SPCC rules have been amended and the rule exempts completely buried storage tanks, as well as connected underground piping, underground ancillary equipment, and containment systems, when subject to the technical requirements of 40 CFR part 280. In today's proposal, EPA proposes to continue to defer the aboveground components associated with airport hydrant systems and USTs with field-constructed tanks. These aboveground

components will be subject to SPCC requirements. EPA is proposing to regulate the underground components associated with airport hydrant systems and USTs with field-constructed tanks. Once the proposal becomes final, these underground components will no longer be subject to SPCC requirements. In addition, previously deferred wastewater treatment tank systems and UST systems that store fuel solely for use by emergency power generators will now be regulated under the UST regulation and will no longer be subject to SPCC. EPA does not believe the proposed rule creates a serious inconsistency or interferes with any other actions planned or undertaken by other agencies.

Chapter 1. Introduction

This document presents an analysis by the U.S. Environmental Protection Agency (EPA) Office of Underground Storage Tanks (OUST) of the costs, benefits, and economic impacts of the proposed targeted changes to the Underground Storage Tank (UST) regulations. The proposed rule serves the purpose of strengthening the existing underground storage tank regulations by increasing the emphasis on proper operation and maintenance of UST systems and improved maintenance of release detection equipment. The proposed changes also acknowledge improvements in technology over the last twenty years, including the ability to perform release detection for many tank systems that were previously deferred.

1.1 Background

In 1984, Congress responded to the increasing threat to groundwater from leaking underground storage tank (UST) systems by adding Subtitle I to the Solid Waste Disposal Act (SWDA). SWDA required EPA to protect the environment and human health from UST releases by developing a comprehensive regulatory program for UST systems storing petroleum or certain hazardous substances. In 1986, Congress amended Subtitle I of SWDA and created the Leaking Underground Storage Tank Trust Fund (LUST Trust Fund) to oversee and pay for cleanups at sites where the owner or operator is unknown, unwilling to pay, or unable to pay.

EPA promulgated the UST regulation in 1988 (40 CFR Part 280). This regulation set minimum standards for new tanks and required owners and operators of existing tanks to upgrade, replace, or close them. The 1988 regulation set deadlines for owners and operators to meet the new requirements. By 1998, owners and operators had to meet new UST system requirements, upgrade their existing UST systems, or close them. Owners and operators who chose to upgrade had to ensure that every UST system had spill prevention equipment (e.g., spill buckets), overfill prevention equipment, and was protected from corrosion. In addition, owners and operators were required to monitor their UST systems for releases using release detection (phased in in the 1990s depending on the year of installation of each UST system). Finally, owners and operators were required to have financial responsibility (phased in through 1998) to ensure that they are financially able to pay for any releases that occur. No significant changes have been made to these requirements since 1988.

In 1988, EPA also promulgated a regulation for state program approval (40 CFR Part 281). Since states are the primary implementers of the UST program, EPA wanted to set up a process where state programs could operate in lieu of the federal program if certain requirements were met. This regulation describes the minimum requirements states must meet to have their regulations operate in lieu of the federal regulation.

In 2005, the Energy Policy Act (EPAct) further amended Subtitle I of SWDA. The EPAct requires states that receive federal Subtitle I money from EPA to meet certain requirements. EPA developed grant guidelines for states regarding operator training, inspections, delivery prohibition, secondary containment, financial responsibility for

manufacturers and installers, public record and state compliance reports on government UST systems.

1.2 Need for Regulatory Action

After Congress passed EPAct, EPA decided to revise the 1988 UST regulation (at 40 CFR Part 280), primarily to ensure parity in Indian country. Key EPAct provisions (such as secondary containment and operator training) apply to all states receiving federal Subtitle I money, regardless of their state program approval status; but these key provisions do not apply in Indian country (or in states and U.S. territories that do not meet EPA's operator training or secondary containment grant guidelines). In order to establish federal UST requirements similar to the UST secondary containment and operator training requirements of EPAct, EPA decided to revise the 1988 UST regulation. Without these changes, EPAct provisions will not apply in Indian country. These proposed revisions will also fulfill the objectives of the EPA-Tribal UST Strategy (August 2006) in which both EPA and tribes recognized it is important to ensure parity in implementing UST program requirements in states and territories, as well as in Indian country.[1]

EPA decided now is also an appropriate time to change the 1988 UST regulation. While EPA has issued many guidance documents and used various implementation approaches and techniques over the last twenty years, we have not made significant changes to the original 1988 regulation. Indeed, most states have passed requirements that go far beyond the original federal regulation.

Furthermore, while information on sources and causes of releases show that releases from tanks are less common than they once were, releases from piping and spills and overfills associated with deliveries have emerged as more common problems.[2] In addition, releases at the dispenser have emerged as one of the leading sources of releases. The lack of proper operation and maintenance of UST systems is a main cause of release from these areas. Data also indicate that release detection only detects about one quarter of all releases.[3] While some of those releases occur in areas not required to have release detection, other releases that should be detected are not because of problems with the operation and maintenance of the release detection equipment.

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[1] See http://www.epa.gov./oust/fedlaws/Tribal%20Strategy_08076r.pdf

[2] U.S. Environmental Protection Agency, Office of Underground Storage Tanks, "Evaluation of Releases from New and Upgraded Underground Storage Tank Systems – Peer Review Draft," U.S. EPA, August 2004, and U.S. Environmental Protection Agency, Office of Underground Storage Tanks, "Petroleum Releases at Underground Storage Tank Facilities in Florida," draft, March 2005.

[3] About 50 percent of all releases go undetected because they occur in areas where release detection is not required (and therefore is not designed to detect a release). Of the 50 percent that should be detected, 25 percent still go undetected partly because of issues with operation and maintenance of the release detection equipment. (Office of Underground Storage Tanks, U.S. EPA, "Petroleum Releases at Underground Storage Tank Facilities in Florida," U.S. EPA, draft, March 2005, p. 26.)

Since the beginning of the UST program, preventing petroleum releases into the environment has been one of the primary goals of the program. EPA and our partners have made major progress in reducing the number of new releases, but over 7,000 releases are still discovered each year. Because existing publicly-funded mechanisms and institutions frequently cover at least part of the costs of release remediation, owners and operators of UST systems do not bear the full costs of their actions.[4] Petroleum releases thus represent a negative externality caused by UST system operators, as the individuals and firms that cause releases do not bear their full costs. This represents a failure of the market to fully internalize the cost to society of operating an UST system: private costs do not equal social costs. A combination of revised technical standards and inspection and testing requirements represents the most appropriate method for reducing the number of future releases and mitigating the impact of existing negative externalities.

EPA wanted to make sure the rule development process was open and transparent and that all stakeholders had an opportunity to share their ideas as well as their concerns. From the beginning of this process, EPA recognized the concerns about costs on owners and operators and was committed to limiting the requirements for retrofits. We reached out to all stakeholders, including state and tribal regulators, federal facilities, members of the petroleum industry including representatives of owners and operators as well as equipment manufacturers, small businesses, local governments, and environmental and community groups. Over a two-year period, we held conference calls, solicited comments and gave stakeholders multiple opportunities to share their ideas as well as kept them informed of where we were in the process.

From this extensive stakeholder outreach, EPA compiled potential proposed changes to the UST regulations. EPA shared all of these ideas with the stakeholders and gave them an opportunity to comment on each idea that was submitted to us. We then revised and added items to the list as necessary based on data, analysis and consideration of costs and benefits. Ultimately, EPA identified the items in this proposed rule as the needed regulatory changes at this time.

1.3 Summary of the Proposed Rule

EPA is proposing to revise the UST regulations in order to: establish federal requirements that are similar to certain key provisions of the Energy Policy Act; ensure owners and operators perform proper operation and maintenance; address deferrals; update the regulations to current technology and practices; and make technical and editorial corrections. Specifically, EPA is proposing the following set of revisions (hereafter referred to as the Preferred Option):

[4] We refer here to mechanisms other than those whose specific purpose is to fund remediation for new releases from UST systems. For example, if owners and operators in a particular state are compelled to participate in a fund operated by a public (or private) entity, and the contributions made directly by the owners and operators are equal to all the remediation costs, such a policy overcomes the market failure. However, if taxpayers are required to cover any portion of remediation costs through general funds or revenues obtained for other purposes, the negative externality will not be rectified.

- Establish federal requirements for secondary containment and operator training similar to those established by the EPAct for states that receive federal Subtitle I money

- Add operation and maintenance requirements
  - Walkthrough inspections
  - Spill prevention equipment tests
  - Overfill prevention equipment tests
  - Interstitial integrity tests
  - Operability tests for release detection methods

- Address existing 40 CFR 280 deferrals
  - Require release detection for emergency generator UST systems
  - Remove deferrals and regulate airport hydrant fuel distribution systems (AHFDSs) and UST systems with field-constructed tanks (FCTs) with alternate release detection requirements
  - Remove deferrals for wastewater treatment tanks

- Provide for other changes to improve release prevention and detection and program implementation
  - Require testing after repairs to spill and overfill prevention equipment, and interstices
  - Eliminate flow restrictors in vent lines as an overfill prevention option for all new tanks and when overfill devices are replaced
  - Require closure of lined tanks that cannot be repaired according to a code of practice
  - Address responses to interstitial monitoring alarms
  - Notification requirement of ownership change
  - Eliminate groundwater and vapor monitoring as release detection methods
  - Establish requirements for determining compatibility

- Make general updates to the regulation
  - Reference newer technologies, including explicitly adding statistical inventory reconciliation (SIR) and continuous in-tank leak detection (CITLD) as release detection methods
  - Update codes of practice listed in the regulation
  - Remove old upgrade and implementation deadlines
  - Make editorial and technical corrections

- Revise state program approval (40 CFR Part 281) to be consistent with the above revisions

1.4 Alternative Regulatory Options

In addition to assessing the impacts of the Preferred Option, this document assesses the costs, benefits, and economic impacts of two regulatory alternatives, as outlined in **Exhibit 1-1.** Please refer to the preamble for a discussion on the rationale behind the development of these two alternatives.

Under each of these alternatives, EPA evaluated variations of a subset of the proposed changes, while some of the proposed regulatory requirements remained in effect across all options. The differences between the three regulatory options considered in this regulatory impact analysis are described in **Exhibit 1-1**.

Exhibit 1-1

Options Considered For The Proposed Rule

Requirement Description	Options		
	Preferred	**Alternative 1**	**Alternative 2**
Release Prevention			
Walkthrough inspections	Monthly	Monthly	Quarterly
Overfill prevention equipment tests	3 year	1 year	3 year
Spill prevention equipment tests	1 year	Require replacement every 3 years, no testing	1 year
Interstitial integrity tests	3 year	1 year	Not required
Testing after repairs to spill and overfill prevention equipment, and interstices	Required	Required	Required
Eliminate flow restrictors in vent lines for all new tanks and when overfill devices are replaced	Required	Required	Not required
Release Detection			
Operability tests for release detection methods	1 year	1 year	3 year
Change leak rate probabilities from 95/5 to 99/1 (Pd/Pfa)	Not required	Required	Not required
Add SIR/CITLD to regulations with performance criteria	Required	Required	Required
Response to interstitial monitoring alarms	Required	Required	Required
Eliminate groundwater and vapor monitoring as release detection methods	Eliminate in 5 years	Eliminate immediately	Not required
Remove deferral for emergency generator tanks	Required	Required	Required
Other			
Require notification of ownership change	Required	Required	Required
Closure of lined tanks that cannot be repaired according to a code of practice	Required	Required	Required
Requirements for determining compatibility	Required	Required	Required
Remove deferrals for airport hydrant fuel distribution systems and UST systems with field-constructed tanks	Regulate under alternative release detection requirements	Regulate under release detection requirements for conventional UST systems	Maintain deferrals
EPAct-related Provisions			
Operator training	Required	Required	Required
Secondary containment	Required	Required	Required

Note that each option considered by EPA contains a set of new requirements that does not vary across options. As explained in the introduction, operator training and secondary containment are being proposed in order to ensure parity in program implementation among states and in Indian country. Therefore, these requirements are necessary across all options. Based on input EPA received from stakeholders, EPA believes the other proposed requirements in this set represent the minimum necessary changes for its proposed rule. Specifically, these requirements are:

- Testing after repairs to spill and overfill prevention equipment, and interstitial spaces
- Adding SIR/CITLD to regulations with performance criteria
- Reporting and testing for interstitial alarms
- Removing the deferral for release detection for emergency generator tanks
- Notification of ownership change
- Closure of lined tanks that cannot be repaired according to a code of practice
- Requirements for determining compatibility, and
- Requiring operator training and secondary containment

Many of the requirements proposed in this rule will not immediately impose new costs upon UST owners or operators. For example, new requirements for periodic testing of equipment do not require owners or operators to perform those tests at the time the rule comes into effect; depending on the requirement, they may have up to three years to satisfy the new requirements.[5] EPA's analysis accounts for this delay in its estimate of costs by discounting the costs associated with each requirement as shown in **Exhibit 1-2**. EPA assumes that the monetized positive impacts associated with these requirements accrue at the end of the year in which costs occur to incorporate an assumption that some beneficial impacts may lag requirements.[6]

[5] Please refer to the preamble section for each proposed requirement for a discussion on the rationale behind the delayed or phase-in implementation periods.

[6] EPA does not have data to suggest any particular length of lag for each requirement; for this analysis, we effectively assume that benefits accrue at the end of the year in which costs occur. Chapters 3 and 4 provide detailed descriptions of the methods used to assess costs and beneficial impacts.

Exhibit 1-2
Years Until Proposed Requirements Become Effective

Requirement	Number of years until effective
Release Prevention	
Overfill prevention equipment test[7]	3
Spill prevention equipment test	1
Interstitial integrity test[8]	3
Release Detection	
Operability tests for release detection methods	1
Eliminate groundwater and vapor monitoring as release detection methods (for Preferred Option)	5
Remove deferral for emergency generator tanks	1
Other	
Remove deferral for airport hydrant fuel distribution systems (Subparts B, C, and D)[8]	3
Remove deferral for UST systems with field-constructed tanks (Subparts B, C, and D)[9]	3
EPAct-related Provision	
Operator training	3
Please refer to the preamble section for each proposed requirement for a discussion on the rationale behind the delayed or phase-in implementation periods.	

Finally, EPA is including a set of proposed revisions and clarifications that are not expected to have any economic impact, due either to the nature of the requirement or to the interaction of UST regulations with existing regulations. The only cost associated with these clarifications and changes is the cost of reading the new regulations. These revisions include:

- Removing deferrals for wastewater treatment tanks[9]

[7] As part of this analysis, we assume that overfill prevention equipment tests and interstitial integrity tests will begin after a three-year delay. Phasing in these costs over a three-year period would increase total costs by approximately $5.1 million compared to a three-year delay; this does not affect the total cost estimate presented in the RIA for the proposed rule.

[8] Removing deferrals for airport hydrant fuel distribution systems and field-constructed tanks will require these systems to comply with Subparts B, C, D, E, G, and H of 40 CFR Part 280. The proposed regulation requires these systems to comply with Subparts B, C, and D after 3 years, while compliance with Subparts E, G, and H would be required immediately.

[9] While this represents a new requirement, based on conversations with the Georgia Environmental Protection Division, the National Association of Clean Water Agencies (NACWA), Highland Tank, and the Automobile Recyclers Association, EPA believes that all active wastewater treatment tanks, including tanks at most publicly owned treatment works and many private treatment facilities, are currently regulated by either section 402 or section 307(b) of the Clean Water Act and therefore excluded from 40 CFR 280. As a result, EPA believes that there are no wastewater treatment tank systems currently deferred. Therefore, we assume that the removal of the deferral will have no impact on the regulated universe.

- Updating the regulations to reference newer technologies
- Updating the codes of practice listed in the regulations
- Updating the regulations to remove old upgrade and implementation deadlines
- Updating the regulations for editorial and technical corrections, and
- Revising the State Program Approval (40 CFR Part 281) regulations to be consistent with the above revisions

1.5 Scope of Analysis

Within the constraints of data availability, this analysis attempts to capture all quantifiable and qualitative impacts for this proposed rule. EPA obtained sufficient data to identify, by state, the number of units likely to be affected by each proposed change in the rule. The analysis uses these data to assess the compliance costs on these units and relevant state governments. In conducting these analyses, EPA also assessed the sensitivity of outcomes to key assumptions. Separately, the analysis monetizes a number of impacts of the rule, including the avoided costs generated by avoided releases, reduction in severity of releases, avoided product loss, avoided vapor intrusion damages, and a subset of human health benefits. This analysis quantifies, but does not value, groundwater impacts. Finally, this analysis is unable to quantify or value a subset of human health benefits and ecological impacts, but addresses these qualitatively.

In addition to identifying costs and the positive impacts of the rule, this analysis also examines the economic and distributional impacts of the rule. The economic impact analysis includes the proposed rule's effect on facility closures, employment, and energy output and cost. The analysis of the distributional impacts of the rule examines the effect of a reduction in releases on state financial assurance funds, impacts on childrens' health, small business impacts, and impacts on low-income and minority populations. Finally, this analysis considers impacts of the rule related to certain executive orders and statutes, including the Unfunded Mandates Reform Act, impacts on Tribal Governments, and Federalism impacts.

1.6 Report Organization

To support the development of the proposed rule, EPA designed and conducted this analysis of the rule's costs, benefits, and economic impacts consistent with the requirements of Executive Order 12866, and OMB Circular A-4.[10] Data, methods, and results of this analysis are presented in the following chapters:

[10] Executive Order 12866, Regulatory Planning and Review, October 4, 1993; Office of Management and Budget, Circular A-4, September 17, 2003.

- ***Chapter 2: Universe of UST Systems Affected by the Proposed Rule.*** This chapter identifies a profile of the entities that may be affected by the proposed rule.

- ***Chapter 3: Assessment of Compliance Costs.*** This chapter summarizes the methods employed by EPA to assess the cost impacts of the proposed rule.

- ***Chapter 4: Assessment of Benefits and Cost Savings.*** This chapter presents estimates of the benefits and avoided costs of the proposed rule.

- ***Chapter 5: Distributional Impacts and Considerations.*** This chapter summarizes the assessment of distributional impacts of the proposed rule, including economic and energy impacts, effects on small businesses and governments, impacts on low-income and minority populations, and children's health effects.

- ***Chapter 6: Other Statutory and Executive Order Analyses.*** This chapter summarizes analyses required by certain statutes or executive orders, including regulatory planning and review, impacts created by unfunded mandates, federalism implications, effects on tribal governments, and joint impact of the proposed rule in the context of existing rules.

- ***Chapter 7: Comparison of Costs, Benefits, and Other Impacts.*** This chapter summarizes and compares the costs, cost savings, and benefits of the proposed rule.

- ***Appendices.*** We present the details to methods and assumptions we employ in a number of appendices.

Chapter 2. Universe of UST Systems Affected by the Proposed Rule

This regulatory impact analysis addresses the effects of the proposed regulatory changes on four types of UST systems: conventional UST systems with prefabricated tanks that store and dispense petroleum products; emergency generator tank systems that store fuel for occasional use; UST systems with field-constructed tanks that are typically designed to store large volumes of fuel; and airport hydrant fuel distribution systems that provide large volumes of fuel to aircraft using underground distribution systems.

This chapter describes the universe of systems, facilities, firms, and sectors that are likely to be affected by the proposed regulatory changes, and documents the extent to which state regulations already require compliance with the proposed regulations.

2.1 Types of Entities Affected by the Proposed Rule

The four types of UST systems that are potentially affected by the proposed regulation are characterized as follows:

- **Conventional UST systems (conventional USTs):** These systems include the universe of facilities and tanks that are currently subject to existing regulations, along with ancillary equipment (e.g., piping, dispensers, sumps, spill prevention equipment, and release detection equipment). The majority of these systems store and dispense petroleum products and are typically found at gas stations. A limited number store other hazardous substances, but the regulatory impact analysis does not consider these UST systems separately.[1] These UST systems are subject to all requirements under 40 CFR Part 280.

- **Emergency generator tank systems (EGTs):** Emergency generator tank systems refer to the tanks and piping for systems that provide longer-term storage of fuel for occasional use as a back-up fuel supply. These tanks are currently deferred from 40 CFR Part 280 Subpart D (release detection) but are subject to all other requirements under 40 CFR Part 280. The proposed regulation does not address emergency tanks at nuclear power plants, which are regulated by the Nuclear Regulatory Commission under 10 CFR Part 50, appendix A.[2]

[1] Because tanks storing hazardous substances are also currently subject to the 1988 UST regulations under 40 CFR Part 280 this analysis assumes that incremental costs and benefits associated with the proposed rule will be comparable to the costs and benefits associated with other conventional UST systems. Although hazardous substance tanks are not included in the total number of active petroleum UST systems, EPA roughly estimates that less than one percent of all active regulated UST systems contain hazardous substances.

[2] See 40 CFR 280.10 Subpart A – Applicability.

- **UST systems with field-constructed tanks (FCTs):** Field-constructed tanks are underground bulk storage tanks that are built on-site because they are too large to be pre-fabricated. All identified field-constructed tanks currently in operation are owned by Federal facilities and mainly serve operations at military bases. These tanks are currently deferred from all regulation under 40 CFR Part 280, except for Subparts A and F, but are typically subject to regulation under the Oil Pollution Act of 1990, 40 CFR Part 112 (EPA's Spill Prevention, Control, and Countermeasure regulations).

- **Airport Hydrant Fuel Distribution Systems (AHFDSs):** Airport hydrant fuel distribution systems are systems that include one or more tanks (either above-ground or underground), underground piping, and underground ancillary equipment used to fuel aircraft. These systems do not have a dispenser at the end of the piping run, but instead have a pressurized hydrant (fill stand). Large commercial and military airports employ these systems, but most commercial systems have only above-ground storage tanks and are thus not affected by the proposed regulation.[3] These systems are currently deferred from all regulation under 40 CFR Part 280, except for Subparts A and F, but are typically subject to regulation under 40 CFR Part 112.

2.2 Configuration of Average Conventional UST System

Conventional UST systems reflect a relatively consistent configuration of standard equipment. While facility size and complexity vary significantly, this analysis assumes that a typical (average) conventional UST system is configured as follows (**Exhibit 2-1**):[4]

Exhibit 2-1

Assumed Average Configuration For A Conventional UST System

System Component	Configuration
Pipes per tank	1
Feet per pipe	100
Fill pipes (per tank)	1
Spill prevention equipment (per fill pipe)	1
Under-Dispenser Containment (UDC) (per tank)	2
Turbine sumps (per tank)	1

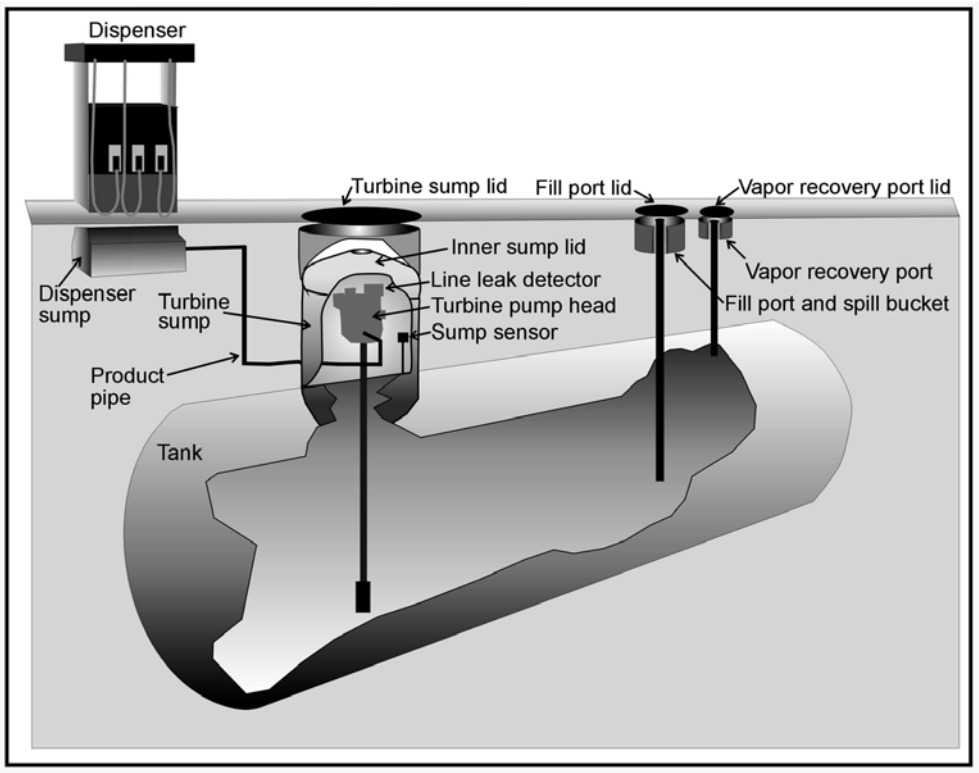
[3] Industrial Economics, Inc., "Preliminary Assessment and Scoping of Data Related to Potential Revisions to the UST Regulations; Tasks 2-4, Work Assignment 1-25," November 20, 2008.

[4] Assumptions based on data collected from pipe installation companies, state data, and EPA professional judgment. See Industrial Economics, Inc., "Methodology for Secondary Containment for Piping," Work Assignment 1-19, Task 5, October 3, 2008 and E^2, Incorporated, memoranda and analyses submitted under Contract EP-W-05-018, "U.S. Environmental Protection Agency. Underground Storage Tanks/Leaking Underground Storage Tanks Analytical and Technical Support." Where gaps existed in the analyses, EPA used the best professional judgment of its UST system technical experts. All supporting materials not included in the appendices can be found in the docket for the proposed rule.

These assumptions best characterize motor fuel retailers, which represent approximately 80 percent of the 611,449 conventional UST systems in operation in 2009.[5] EGT systems and other conventional UST systems used to store fuel or hazardous substances are likely to have systems with similar components and less complex dispenser systems. The configurations of FCTs and AHFDSs are considered separately, and are described in detail in Appendix A. **Exhibit 2-2** provides an illustration of an UST system at a retail motor fuel establishment. Note that in this exhibit, the "dispenser sump" is a specific form of under-dispenser containment, and the "spill bucket" is an example of spill prevention equipment.

Exhibit 2-2

Configuration of Retail Motor Fuel UST System



[5] The remaining 20 percent of conventional UST systems consist of EGTs and tanks used for storing and dispensing fuel in commercial settings, hospitals, manufacturing, transportation, communications and utilities, and agriculture. See Exhibit 2-3 for details.

2.3 UST Universe Size and Distribution Across Sectors

The September 30, 2009 *Semi-Annual Report of UST Performance Measures* reports a universe of 611,449 active petroleum tanks (UST systems) in the United States and its territories.[6,7] This total includes conventional UST systems and emergency generator tank systems. Estimates based on state data suggest that approximately 3.0 percent, or 18,343 of the 611,449 active UST systems, are emergency generator tanks.[8]

In addition to emergency generator and conventional UST systems, the proposed rule addresses UST systems with field-constructed tanks and airport hydrant fuel distribution systems. While these two types of systems are deferred under current EPA regulations, a subset may be regulated by individual states and included in the total estimate of tanks provided by those states. For the purpose of this analysis, however, these two universes are considered to be separate from the 611,449 tanks identified in the 2009 EPA report. The total universe of UST systems with field-constructed tanks and airport hydrant fuel distribution systems is small, including approximately 239 UST systems with field-constructed tanks, and 162 airport hydrant fuel distribution systems (each hydrant system is supported by an average of roughly eight linked tanks).[9]

Most UST systems in the United States are located at motor fuel retail establishments (i.e., gas stations), and virtually all retail motor fuel establishments use UST systems. Approximately 162,000 (161,768) retail fueling sites operated in the United States in 2008.[10] Of these, approximately 115,000 included convenience stores.[11]

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[6] U.S. Environmental Protection Agency, Office of Underground Storage Tanks, *Semi-Annual Report of UST Performance Measures End of Fiscal Year 2009 – As Of September 30, 2009*, http://www.epa.gov/OUST/cat/ca_09_34.pdf. State and territory underground storage tank programs report to EPA periodically throughout the year with data on their UST performance. EPA compiles the data for all states, territories, and Indian country and makes the data publicly available at http://www.epa.gov/OUST/cat/camarchv.htm.

[7] FY2010 data indicate that the universe of tanks has contracted to 597,333 UST systems. To consider the impacts of declining universe sizes on the results of this analysis, we construct and evaluate an alternative baseline for compliance costs and avoided costs in Chapters 3.4.1 and 4.4.1, respectively.

[8] See Industrial Economics, Inc. "Detailed Assessment of UST Universe by Tank Use and Industry Sector," Work Assignment 1-25, Task 6, January 23, 2009. The number of EGTs is assumed to be approximately 3.0 percent of all active UST systems based on the weighted average from four state databases.

[9] See Industrial Economics, Inc., "Preliminary Assessment and Scoping of Data Related to Potential Revisions to the UST Regulations; Tasks 2-4, Work Assignment 1-25," November 20, 2008. There are 201 airport hydrant fuel distribution systems owned by the Department of Defense and 40 airport hydrant fuel distribution systems located at commercial airports. Of these, 162 are not fueled by above-ground storage tanks (two commercial airport facilities have UST systems, along with 160 of the 201 Department of Defense systems).

[10] Based on NPN MarketFacts 2008, cited in *National Petroleum News*, "MarketFacts 2008 Overview," July/August 2008.

[11] National Association of Convenience Stores (NACS), "U.S. Petroleum Industry: Statistics, Definitions," http://www.nacsonline.com/NACS/Resources/campaigns/GasPrices_2009/Pages/StatisticsDefinitions.aspx.

An analysis of state data by EPA concludes that the average retail motor fuel establishment has 2.97 tanks (UST systems).[12] Assuming approximately 2.97 UST systems per facility and 161,768 facilities, 481,108 UST systems, or 79 percent of all active UST systems, are associated with retail motor fuel establishments.

In addition to traditional motor fuel retailers, big-box retailers, or hypermarkets, represent a growing segment of the retail motor fuel seller market. This category (NAICS code 452910) includes stores operated by Wal-Mart, Costco, and other large companies. Collectively, these firms operate approximately 4,500 filling stations; each station is likely to have at least three UST systems.[13]

Other industry sectors that report use of UST systems include agriculture (crop production and animal production), commercial (wholesale trade, retail trade, accommodation, and food services), communications and utilities (wired telecommunications carriers and electric power generation, transmission, and distribution), hospitals, manufacturing, transportation, local and state government operations, and federal facilities run by the U.S. Departments of Defense and Energy. These sectors comprise approximately 130,000 UST systems, including those in the government sector (**Exhibit 2-3**). In many cases, firms in these sectors use UST systems for fueling fleets of vehicles such as school buses, delivery trucks, or rental cars. In other cases, UST systems store fuel for operations or emergency use, used oil, or hazardous substances.

Facilities in sectors other than retail motor fuel have, on average, between 1.5 and 2.3 UST systems at the facilities that use UST systems. The actual number of UST systems at a specific facility, however, is likely to vary significantly depending on facility size and focus.[14]

Results of an analysis of public UST records of 45 states performed for EPA's Office of Underground Storage Tanks suggest that the average number of UST systems per facility (across all sectors that use conventional UST systems or EGTs), is approximately 2.74.[15]

[12] A 2006 analysis of 13 state UST databases performed for EPA estimated that the average retail motor fuel establishment (i.e., facility) has 3.13 tanks. Further adjustments to reconcile various estimates of UST use by industry total universe decrease the number of tanks per UST system operating in retail motor fuel settings to 2.97 tanks. See Industrial Economics, Inc., "Small Entities Screening Analysis of UST Universe by Industry Sector," WA 3-25, Task 4, February 4, 2010.

[13] National Association of Convenience Stores (NACS), "U.S. Petroleum Industry: Statistics, Definitions," http://www.nacsonline.com/NACS/Resources/campaigns/GasPrices_2009/Pages/StatisticsDefinitions.aspx.

[14] "Summary of Key Data from State Public Record Postings," E^2, Incorporated, Task Order No. 1010 – Subtask A1-06C Technical Directive No. 36. All supporting materials not included in the appendices can be found in the docket for the proposed rule.

[15] "Summary of Key Data from State Public Record Postings," E^2, Incorporated, Task Order No. 1010 – Subtask A1-06C Technical Directive No. 36, Table 1.

Exhibit 2-3

Summary Of Universe Of UST Systems By Sector

Industry Sector	NAICS	2006 [a]		2009 [b]	
		Number of Facilities with UST Systems	Number of UST Systems	Number of Facilities with UST Systems	Number of UST Systems
Conventional UST Systems and EGTs					
Retail Motor Fuel Sales	447	168,987	526,008	161,768	481,108
Commercial (wholesale trade, retail trade, accommodation, and food services)	42, 44-45, 72 (excluding 447)	22,730	52,271	21,652	49,793
Institutional (hospitals only)	622	2,330	3,812	2,220	3,631
Manufacturing	31-33	9,261	15,259	8,822	14,536
Transportation (air, water, truck, transit, pipeline, and airport operations)	481, 483-486, 48811	8,559	15,140	8,153	14,422
Communications and Utilities (wired telecommunications carriers; and electric power generation, transmission, and distribution)	5171, 2211	6,972	10,223	6,641	9,738
Agriculture (crop and animal production)	111, 112	889	1,610	847	1,534
Local governments [c]	Government jurisdiction	N/E	N/E	N/E	24,458
State governments [c]	Government jurisdiction	N/E	N/E	N/E	6,114
Federal government [c]	Government jurisdiction	N/E	N/E	N/E	6,114
Total: Conventional UST systems and EGTs		**219,728**[d]	**624,323**	**210,103**[d]	**611,449**
UST systems with Field Constructed Tanks and Airport Hydrant Fuel Distribution Systems					
FCTs: Department of Defense	Government jurisdiction			239	239
AHFDSs: Department of Defense	Government jurisdiction			162	1,296[e]
Total: FCTs and AHFDSs				**401**	**1,535**

[a] Sources: December 18, 2006 review of state databases, "Draft Industry and Facility Profiles," E^2, Incorporated, Task Order No. 1010 – General Technical and Programmatic Support in Implementing the Energy Policy Act of 2005, Amendment 1, TDD #11. Estimate of 168,987 retail motor fuel facilities with UST systems from "2005 U.S. motor fuel station count: 168,987," *National Petroleum News*, May 19, 2005 (annual survey of states to collect data on number of stations).

[b] Analysis based on 2006 column (see note a above), adjusted to reflect 2009 universe of 611,449 UST systems. All sector adjustments proportional except retail motor fuel sales, which reflects the 2008 estimate of 161,768 facilities with UST systems from "MarketFacts 2008 Overview," *National Petroleum News*, August 2008, used as a proxy for the number of such facilities in 2009. (See also Industrial Economics, Inc., "Preliminary Assessment and Scoping of Data Related to Potential Revisions to the UST Regulations; Tasks 2-4, Work Assignment 1-25," November 20, 2008.)

[c] See United States Environmental Protection Agency, "Economic Impact Analysis of Additional Mechanisms for Local Government Entities to Demonstrate Financial Responsibility for Underground Storage Tanks," December 1992, Exhibit 3-1. Estimates of local government UST systems adjusted using the 1987 Census of Governments. Consistent with this analysis, the number of government UST systems is assumed to be two percent of all 2009 UST systems owned by state and federal governments and four percent of all 2009 UST systems owned by local governments.

[d] The totals shown are the sum of the number of facilities of the rows above. These estimates are used only to establish distribution of facilities across sectors based on available data.

[e] This number assumes that there are eight tanks per AHFDS. For more detail on assumptions for AHFDSs, see Appendix A.

2.4 Universe of Facilities and Systems Potentially Affected by Proposed Rule

EPA expects that all facilities or UST systems in the universe of conventional UST systems will be required to comply with one or more regulatory changes in the proposed rule, but the number of facilities and systems affected by each specific regulatory change will vary depending on the extent of current (baseline) state regulations and the type of equipment currently in use.

To estimate the number of systems that will be required to comply with each regulatory change, EPA reviewed publicly available data about state regulations, combined with data from a limited sample of states and equipment providers about the use of different technologies for release prevention and detection.[16]

Exhibit 2-4 identifies the total number of UST systems that could potentially be affected by each regulatory change in the proposed regulations, based on the baseline technology currently in place in the universe of systems. **Exhibit 2-4** identifies the number of UST systems or facilities with relevant technologies, the type of system (i.e., conventional UST and EGT systems, facilities with conventional UST systems or EGTs, AHFDSs, or FCTs), the proportion of the relevant universe of UST systems with the technology, and a summary of the assumptions that define the number of affected units. Note that proposed changes for AHFDSs, EGTs, and FCTs affect only those universes of facilities, and Energy Policy Act-related provisions affect only facilities and UST systems in Indian country.[17] See Appendix B for detailed descriptions of the values and sources used in each calculation. These estimates do not reflect baseline state regulations (e.g., whether a state already requires interstitial integrity testing). As discussed later in this chapter, some baseline state requirements satisfy requirements of the proposed rule.

[16] E^2, Incorporated, memoranda and analyses submitted under Contract EP-W-05-018, "U.S. Environmental Protection Agency. Underground Storage Tanks/Leaking Underground Storage Tanks Analytical and Technical Support." Where gaps existed in the analyses, EPA used the best professional judgment of its UST system technical experts. All supporting materials not included in the appendices can be found in the docket for the proposed rule.

[17] EPA assumes that all states have adopted Energy Policy Act-related provisions in the baseline, consistent with existing guidance.

Exhibit 2-4

Potential Number And Type Of Units Affected By Each Regulation

Regulatory Change	Universe	Proportion of Total Universe Affected Annually	Number of Potentially Affected Systems (Annual) [a]	Assumptions
Release Prevention				
Walkthrough inspections	Facilities with Conventional UST systems and EGTs	100.0%	223,157 facilities	All facilities require periodic walkthrough inspections.
Overfill prevention equipment tests	Conventional UST systems and EGTs	100.0%	611,449 systems	Percentage of UST systems with overfill prevention equipment.
Spill prevention equipment tests	Conventional UST systems and EGTs	90.0%	550,304 systems	One-to-one spill prevention equipment to tank ratio, 10 percent have self-monitoring mechanism and do not need monitoring.
Interstitial integrity tests	Conventional UST systems and EGTs	17.5%	106,747 systems	Tanks and pipes that use interstitial monitoring and do not use continuous sensors, pressure, vacuum, or liquid-filled leak detection monitoring mechanisms. Includes five percent of tanks and 90 percent of piping that use interstitial monitoring.
Spill prevention equipment test after repair	Conventional UST systems and EGTs	6.3%	38,216 systems	Spill prevention equipment requires fix once every four years; repairs are used as the fix 25 percent of the time.
Overfill prevention equipment test after repair	Conventional UST systems and EGTs	5.0%	30,572 systems	Overfill prevention equipment requires fix once every five years; repairs are used as the fix 25 percent of the time.
Interstitial integrity test after repair	Conventional UST systems and EGTs	3.3%	20,443 systems	Tanks and pipes that use interstitial monitoring and do not use continuous sensors, pressure, vacuum, or liquid-filled leak detection monitoring mechanisms. Includes five percent of tanks and 90 percent of piping that use interstitial monitoring. Assumes 25 percent of pipes and five percent of tanks require repair every year.
Eliminate flow restrictors in vent lines for all new tanks and when overfill devices are replaced	Conventional UST systems and EGTs	6.5%	39,744 systems[b]	13% of new UST systems would have installed flow restrictors in vent lines.
Release Detection				
Operability tests – ATG	Conventional UST systems and EGTs	33.7%	205,814 systems	UST systems that use automatic tank gauges.
Operability tests – interstitial monitoring	Conventional UST systems and EGTs	18.8%	114,781 systems	UST systems that use interstitial monitoring (excluding five percent that conduct manual testing of the interstice).
Operability tests – line leak detection	Conventional UST systems and EGTs	27.5%	168,440 systems	Pressurized piping systems that use electronic line leak detectors.
Operability tests – mechanical LLDs	Conventional UST systems and EGTs	54.9%	335,628 systems	Proportion of pressurized piping that already performs a LLD test, but which will require additional capital expenditures to comply with new regulations.
Operability tests – groundwater and vapor monitoring	Conventional UST systems and EGTs	5.17%	31,612 systems	UST systems that use vapor monitoring and/or groundwater monitoring as their sole release detection method(s). Universe affected phases out in equal parts over initial five years of proposed rule.

Exhibit 2-4

Potential Number And Type Of Units Affected By Each Regulation

Regulatory Change	Universe	Proportion of Total Universe Affected Annually	Number of Potentially Affected Systems (Annual) [a]	Assumptions
Eliminate groundwater and vapor monitoring as release detection methods	Conventional UST systems and EGTs	5.17%	31,612 Systems	UST systems that use vapor monitoring and/or groundwater monitoring as their sole release detection method(s). Universe affected phases in over five years.
Add SIR/CITLD to regulations with performance criteria	Conventional UST systems and EGTs	0.5%	2,972 systems	13 percent of UST systems use SIR; 15 percent of these use qualitative methods. Of these, 25 percent are assumed to incur costs to comply.
Change release detection leak rate probabilities – ATG	Conventional UST systems and EGTs	33.7%	205,814 systems	UST systems that use automatic tank gauges.
Change release detection leak rate probabilities – LLD	Conventional UST systems and EGTs	27.5%	168,440 systems	Pressurized piping systems that use electronic line leak detectors.
Change release detection leak rate probabilities – SIR	Conventional UST systems and EGTs	1.9%	11,887 systems	UST systems that use qualitative SIR.
Change release detection leak rate probabilities – CITLD	Conventional UST systems and EGTs	25.2%	154,360 systems	33.7 percent of systems use ATG; of these, 75 percent employ CITLD.
Response to interstitial monitoring alarms	Conventional UST systems and EGTs	2.4%	14,814 systems	Weighted average annual percentage of UST systems and piping that experience an interstitial monitoring alarm.
Remove deferral for emergency generator tanks	EGTs	3.0%	18,343 systems	UST systems assumed to be emergency generator tanks.
Other				
Remove deferral for airport hydrant fuel distribution systems	AHFDSs	100.0%	162 facilities	All airport hydrant fuel distribution systems.
Remove deferral for UST systems with field-constructed tanks	FCTs	100.0%	239 systems	All UST systems with field-constructed tanks.
Require notification of ownership change	Facilities with Conventional UST systems and EGTs	10.1%	22,502 facilities	Annual number of facilities that change ownership.
Closure of lined tanks that cannot be repaired according to a code of practice	Conventional UST systems and EGTs	<0.1%	84 systems	Annual number of lined UST systems that cannot be repaired
Requirements for determining compatibility	Conventional UST systems and EGTs	100.0%	611,449	All conventional UST systems and EGTs
EPAct-related Provisions				
Operator training	UST Facilities in Indian country	100.0%	958 facilities	All facilities in Indian country. Universe affected phases in over three years.
Secondary containment - new and replaced tanks	UST systems in Indian country	36.2%	950 systems[b]	Approximately 72.4 percent of systems in Indian country are single-walled. Analysis assumes midpoint of time horizon until all units are replaced (year 10, 50 percent of universe affected).

Exhibit 2-4

Potential Number And Type Of Units Affected By Each Regulation

Regulatory Change	Universe	Proportion of Total Universe Affected Annually	Number of Potentially Affected Systems (Annual) [a]	Assumptions
Threshold for pipe replacement rather than repair	UST systems in Indian country	6.0%	158 systems[b]	Piping replaced every five years, where 60.3% are single-walled. Analysis assumes midpoint of time horizon until all units are replaced (year 10, 50 percent of universe affected).
Under-dispenser containment for all new dispensers	UST systems in Indian country	48.5%	1,273 systems[b]	Approximately 97 percent of systems require under-dispenser containment. Analysis assumes midpoint of time horizon until all units are replaced (year 10, 50 percent of universe affected).

[a] Figures in this column are calculated assuming that the average number of UST systems per facility is approximately 2.74, per "Summary of Key Data from State Public Record Postings," E^2, Incorporated, Task Order No. 1010 – Subtask A1-06C Technical Directive No. 36, Table 1.

[b] The affected universes presented for these items reflect 50 percent of ultimately affected systems or facilities. Because these requirements take effect over time and future costs are discounted, we present the universe affected at year 10 as a central estimate. In addition, we adjust unit costs to reflect the fact that the total cost of these requirements grows as the number of affected systems or facilities increases.

2.5 Facilities and Systems Affected by Proposed Rule

Many states currently have baseline regulations consistent with one or more requirements in the proposed regulations. As a result, only a portion of the universe of potentially affected facilities will be required to change practices to comply with each regulatory change. Whereas **Exhibit 2-4** displays the number of units that may potentially be subject to each requirement, **Exhibit 2-5** identifies, based on EPA's review of baseline state regulations, the number of units that will be subject to these requirements as a result of the proposed regulations. For nearly all requirements, some portion of the potentially affected universe is already in compliance with the proposed regulatory changes.

Alternative Option 2 will affect the smallest number of systems. Among the specific changes proposed, walkthrough inspections and spill prevention equipment tightness testing affect the largest number of UST systems in all scenarios.[18] In contrast, several regulatory changes (e.g., closure of irreparable lined tanks and pipe replacement requirements) are likely to affect only a small number of systems.

The distribution of incremental impacts of the rule also depends on the distribution of baseline technologies across states with different baseline regulations. Facilities and systems in states with fewer current regulations may bear a greater proportion of costs and benefits than facilities and systems in states with extensive baseline regulations. A key limitation of available baseline data is that baseline technology data is not available at the state level. For example, it is possible that facilities and systems with specific release detection technologies (e.g., automatic tank gauges, (ATGs)) may not be distributed evenly across all states. However, estimates of the

[18] Walkthrough inspections are estimated at a facility level; the number of UST systems estimated as affected by these regulations is 440,817.

percentage of systems using ATGs are available only at the national level. As a result, the regulatory scenarios in Chapters 3 (Compliance Costs) and Chapter 4 (Benefits and Cost Savings) reflect regulatory changes required by an "average" facility in a state under the proposed rule, assuming that all systems reflect the national profile of existing technologies. Analyses of economic impacts and small businesses in Chapter 5 (Distributional Analyses) assess the possible distribution of compliance impacts related to this uncertainty.

Exhibit 2-5

Estimated Systems Not Currently Regulated By States

Description	Universe of Potentially Affected Systems	Systems Affected by Preferred Option	Systems Affected by Alternative Option 1	Systems Affected by Option Alternative Option 2
Release Prevention				
Walkthrough inspections	223,157 (facilities)	160,882 (facilities)	160,882 (facilities)	141,505 (facilities)
Overfill prevention equipment tests [a]	611,449	378,672	421,137	378,672
Spill prevention equipment tests [a]	550,304	460,696	550,304	460,696
Interstitial integrity tests	106,747	76,157	93,538	N/A
Spill prevention equipment test after repair	38,216	37,847	37,847	37,847
Overfill prevention equipment test after repair	30,572	29,844	29,844	29,844
Interstitial integrity test after repair	20,443	14,585	14,585	14,585
Eliminate flow restrictors in vent lines for all new tanks and when overfill devices are replaced [b]	39,744	32,460	32,460	N/A
Release Detection				
Operability tests – ATG	205,814	201,874	201,874	201,874
Operability tests – interstitial monitoring	114,781	112,584	112,584	112,584
Operability tests – line leak detection	168,440	165,216	165,216	165,216
Operability tests – mechanical LLDs	335,628	335,628	335,628	335,628
Operability tests – groundwater and vapor monitoring	31,612	31,612	31,612	31,612
Eliminate groundwater and vapor monitoring as release detection methods [c]	31,612	31,612	31,612	31,612
Add SIR/CITLD to regulations with performance criteria	2,972	2, 882	2, 882	2, 882
Change release detection leak rate probabilities – ATG	205,814	N/A	201,874	N/A
Change release detection leak rate probabilities – LLD	168,440	N/A	165,216	N/A
Change release detection leak rate probabilities – SIR	11,887	N/A	11,659	N/A
Change release detection leak rate probabilities – CITLD	154,360	N/A	151,406	N/A
Response to interstitial monitoring alarms	14,814	10,569	10,569	10,569
Remove deferral for emergency generator tanks	18,343	11,704	11,704	N/A
Other				
Remove deferral for airport hydrant fuel distribution systems	162 [d]	97	97	N/A
Remove deferral for UST systems with field-constructed tanks	239	102	102	N/A
Require notification of ownership change	22,502 (facilities)	3,265 (facilities)	3,265 (facilities)	3,265 (facilities)
Closure of lined tanks that cannot be repaired according to a code of practice	84	59	59	59
Requirements for determining compatibility	611,449	611,449	611,449	611,449
EPAct-related Provisions				
Operator training	958 (facilities)	958 (facilities)	958 (facilities)	958 (facilities)
Secondary containment - new and replaced tanks [b]	950	950	950	950
Threshold for pipe replacement rather than repair [e]	158	0	0	0

Exhibit 2-5

Estimated Systems Not Currently Regulated By States

Description	Universe of Potentially Affected Systems	Systems Affected by Preferred Option	Systems Affected by Alternative Option 1	Systems Affected by Option Alternative Option 2
Under-dispenser containment for all new dispensers [b]	1,273	1,273	1,273	1,273

[a] The universe of affected systems for these requirements varies because some states have current requirements that differ in frequency and ensure baseline compliance in some regulatory scenarios but not others.

[b] The affected universes presented for these items reflect 50 percent of ultimately affected systems or facilities. Because these requirements take effect over time and future costs are discounted, we present the universe affected at year 10 as a central estimate. In addition, we adjust unit costs to reflect the fact that the total cost of these requirements grows as the number of affected systems or facilities increases.

[c] Universe affected phases in over five years.

[d] The universe of potentially affected units is 162 systems, or 1,296 tanks (at eight tanks per system).

[e] EPA's screening analysis shows that a requirement to replace piping if more than 50 percent of it requires repairs would likely generate no net costs, as owners or operators would ordinarily pursue replacement under those circumstances. See Appendix C for details.

Chapter 3. Assessment of Compliance Costs

3.1 Introduction

This chapter describes EPA's analysis of the social costs associated with the proposed rule. OMB guidance suggests that an analysis that relies on measures of opportunity cost and willingness to pay provides a holistic basis for assessing the total cost of any proposed rule. Specifically, a social cost analysis should focus on measuring changes in consumer and producer surplus by considering the market responses to compliance costs (e.g., changes in demand and supply). Along with the administrative costs incurred by the government, changes in producer and consumer surplus reflect the true cost to society of adopting a set of proposed measures.

For this regulatory impact analysis, EPA uses a combination of direct compliance costs and state oversight costs to approximate social costs. In this context, compliance costs represent a reliable indicator of social costs for the following reasons:

- The regulatory requirements generally focus on additional testing and inspection of existing equipment, and do not reflect large-scale investments in equipment or significant changes to operations at the facility level. In addition, the facilities affected by the rule are distributed with relative geographic uniformity for consumers and producers.

- Given the small per-facility costs of the rule (less than $900 for the average facility, as documented in this chapter), closures or changes in market structure represent an unlikely response to the rule. Therefore, it is unlikely that significant changes to production or consumer behavior will affect social costs.

- The short- and long-run impacts of the rule are not likely to differ significantly. Testing and inspection requirements under the rule may offer some opportunities for owners and operators to reduce costs by learning over time, but they are not likely to reduce costs enough to facilitate large-scale equipment upgrades.

For these reasons, compliance costs are likely to be a reasonable approximation for social costs over both the short- and long-run. This chapter presents EPA's compliance cost methodology and results, and summarizes the calculation of government oversight costs. The chapter also provides a discussion of key uncertainties and several brief sensitivity analyses. An analysis of the potential economic impacts of the proposed rule is presented in Chapter 5, and a sensitivity analysis that evaluates the effects of alternative interest rates is presented in Chapter 7.

3.2 Compliance Cost Methodology

In this chapter, EPA presents its methodology for estimating incremental compliance costs of the proposed rule beyond the current baseline costs of existing federal and state

regulation of underground storage tanks. EPA's analysis focuses on the specific incremental costs that occur as a consequence of the proposed rule.[1] Throughout this chapter, the analysis distinguishes between three types of costs:

- System-level: Costs that occur at the individual UST tank level, including ancillary equipment.
- Facility-level: Costs that occur at the level of a facility that owns several USTs; typically 2.74 times the system-level cost to reflect UST ownership by the average facility.
- Unit costs: System-level costs related to a particular proposed requirement. For example, the requirement to test spill prevention equipment after repairs has a unit cost of approximately $130.

Calculation of total incremental compliance costs for UST facilities reflects two key components: identification of specific measures necessary for compliance at individual facilities, and calculation of the costs associated with each of these measures. To estimate these costs, EPA developed a compliance cost model that identifies incremental equipment and labor requirements for an individual system. Based on the baseline equipment, existing state regulations, and anticipated responses to the proposed regulation, the model then generates system-specific estimates of compliance costs. Compliance costs include the labor and capital costs associated with new equipment and installation, inspection, testing, and recordkeeping. The model also includes other compliance costs, such as those associated with more frequent detection of equipment failure and repair of equipment. Some component costs are specific to individual UST system configurations – for example, airport hydrant fuel distribution systems or UST systems with field-constructed tanks – while others are consistent across all system types.

We calculate the compliance costs of the proposed rule by measuring three factors: the regulations already in place in each state (i.e., baseline regulations); the proportion of facilities or UST systems with specific technologies (i.e., the portion of systems that require specific types of upgrades or tests); and the unit cost to comply with each proposed element of the proposed regulation. Chapter 2 of this regulatory impact analysis discusses the baseline state regulations and the proportion of facilities affected by this rule (see **Exhibit 2-5**).

An important limitation of our analysis is that we do not have data on the distribution of UST technologies. Consider the following from **Exhibit 2-5**: we estimate that overfill prevention tests will be a new requirement for 378,672 systems, and spill prevention equipment tests will be a new requirement for 460,696 systems. These requirements could together affect as few as 460,696 systems if all systems that are affected by overfill prevention testing are a subset of the systems that are affected by spill prevention testing. In the absence of additional information, it

[1] For this proposed rule, EPA does not specifically attempt to measure baseline regulatory costs. However, costs identified in the 1988 EPA regulation that set original technical standards under 40 CFR Part 280 provide an indication of baseline costs. The 1988 RIA calculated per-tank costs of $28,770, equivalent to $44,450 in 2009 dollars. See August 24, 1988 RIA entitled Regulatory Impact Analysis of Technical Standards for Underground Storage Tanks, Volume 1, page ES-7, Exhibit ES-1).

is equally plausible that these two requirements affect the entire universe of USTs if they overlap as little as possible.

EPA has not identified any information that could allow us to reliably narrow the universe of affected USTs to a number smaller than the entire universe. Further, EPA's review of state data suggests that facilities in all states will be subject to some cost under the proposed rule.[2] Consequently, when considering the total cost of the proposed rule on a facility or UST system basis, we divide the total cost by the number of facilities or systems in the entire universe.[3]

3.2.1 Categories of Compliance Costs Analyzed

This analysis includes the following categories of compliance costs: operations and maintenance costs; capital costs; and implicit capital costs, or "time value of money costs" associated with earlier detection of equipment failure. Because the proposed rule focuses on operational improvements, operations and maintenance costs constitute the majority of the compliance costs identified in this analysis. These costs are relatively frequent, recurring costs that mainly involve a service activity. Operations and maintenance activities include the labor and materials costs associated with maintenance of equipment, routine testing, and inspection (whether performed by the owner, operator, or a contractor). This analysis assumes that UST facility owners and operators pay in full for these costs when they occur (that is, they do not obtain financing and pay over time).[4]

Because the proposed rule does not focus on broad equipment requirements, capital costs represent a small portion of the total compliance costs for this proposed rule. Capital costs address the purchase and installation of new equipment, such as installing a new double-walled UST or under-dispenser containment. Total capital costs typically include installation labor and initial service required to ensure the new equipment is fully functioning. EPA assumes that UST owners and operators finance these compliance costs over the life of the equipment; all capital costs are calculated over a regulatory time horizon of 20 years.[5] The following examples characterize the three types of capital cost calculations that are relevant to this regulatory analysis:

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[2] The discounted cost per UST system ranges from less than $100 in one state to over $700, with costs in 54 states and territories falling between $200 and $450.

[3] We address uncertainty in the distribution of technology and costs with a set of sensitivity analyses in section 3.5 of this chapter, and we consider the economic impacts of different distributions of costs in Chapter 5.

[4] Certain one-time costs that occur only once over the regulatory time horizon (e.g., one-time spending on initial operator training for personnel at existing facilities) are also annualized over 20 years.

[5] EPA assumes that owners and operators amortize all capital costs over a 20-year expected regulatory horizon to be consistent with the 20-year expected lifetime of an UST system. For equipment with a lifetime shorter than 20 years, EPA assumes that a proportion of the universe is affected per year; for example, EPA assumes that piping is replaced every five years, such that one-fifth of the universe must replace it every year. The central analysis uses a seven percent discount rate, consistent with Office of Management and Budget Circular No. A-94, Revised, October 29, 1992. Other discount rates are considered in Chapter 7.

Existing equipment replacements: An UST system owner or operator must upgrade an existing system with new equipment to comply with a requirement under the proposed rule (e.g., facilities with EGTs may be required to install release detection equipment if the deferral is removed). The incremental compliance cost is the total cost of the new equipment and installation (including removal of existing equipment).[6] Any additional (incremental) operation and maintenance costs are also included.

New equipment requirements: An operator is installing new or replacement equipment as an ordinary business expense. Under baseline regulations, *Equipment A* is compliant. However, new regulations require a higher level of compliance for new tank systems that can be satisfied at lowest cost by *Equipment B*. The incremental compliance cost to the owner of the equipment is the additional cost (if any) of purchasing and installing and operating *Equipment B* instead of *Equipment A*. The costs of this requirement reflect the timing of the normal replacement cycle for all equipment in the universe. For example, owners and operators installing new UST systems will be required to use technologies other than flow restrictors to ensure release prevention.

Time value of money (TVM) costs: Under baseline regulations, the average UST system requires inspection every three years. EPA estimates that the baseline three-year inspection, on average, identifies a hypothetical repair or replacement cost of $100 associated with certain equipment. Under the proposed rule, a new annual test would discover the repair sooner and require repair or replacement one-to-two years earlier. While the repair expense is the same, the proposed rule generates a time value of money cost by requiring an expenditure sooner.[7]

EPA estimates that the proposed regulations will impose capital costs on the following components due to earlier detection of problems as a result of the new testing requirements:

- Overfill prevention equipment;
- Spill prevention equipment;
- Interstitial areas; and

[6] This approach may overstate costs, as it does not account for the age of existing equipment. Owners and operators typically plan for new capital expenditures over the lifetime of existing equipment, recording depreciation as operations consume its usefulness over time. If an owner or operator is close to replacing certain equipment and is required to replace that equipment when the proposed rule becomes effective, he or she incurs a lower incremental cost than an owner or operator who only recently installed that equipment. By not attempting to adjust for this factor, EPA assumes that owners and operators replace brand new equipment, a conservatism that results in a higher cost. Using this approach, these annualized one-time costs comprise approximately one percent of annual costs under Preferred Option and Alternative 2. Under Alternative 1, the requirement of three-year spill prevention equipment replacement increases these costs to 38 percent of total costs.

[7] There is significant uncertainty regarding whether total expenditures would increase or decrease over time. More frequent inspections may lead to more frequent repairs and replacements but may also reduce the severity and cost of issues.

- ATGs, interstitial monitors, vapor monitors, groundwater monitors, and line leak detectors.

The proposed rule requires testing, in addition to inspections, for several UST system components. EPA assumes that testing adds value to baseline release prevention strategies in two ways: first, testing detects issues with an UST system that may not be detectable in inspections. In addition, in some cases, testing will occur more frequently than baseline inspections and therefore may identify issues that occur between inspections. This analysis therefore considers two types of increased capital costs. First, EPA assumes that additional testing required under the proposed rule will identify malfunctions that prior inspections would have overlooked, and will therefore mandate additional compliance costs related to repair and replacement of equipment. Second, some baseline compliance costs will occur earlier than they would in the baseline, creating time value of money costs as owners and operators forgo the use of funds for other investments. The time value of money cost of incurring a repair sooner is estimated at seven percent, consistent with OMB's discount rate. See Appendix D for the detailed cost methodology.

3.2.2 Estimation of System-Level Compliance Costs for UST Systems

Estimates of system-level compliance costs for each part of the proposed rule are based on publicly available data on equipment, installation, and testing costs, information collected from professionals in industries that provide relevant equipment and services, and EPA's professional judgment.[8] Costs are estimated to occur according to the rule implementation schedule identified in **Exhibit 1-2**; we use an annual discount rate of seven percent to adjust costs with compliance windows of more than one year.

Labor costs used in this analysis reflect labor-hour estimates from EPA Information Collection Request 1360.08 for specific inspection and recordkeeping tasks. The cost of labor is based on Bureau of Labor Statistics (BLS) labor rates for skill categories appropriate to the retail sector and technical requirements of the proposed rule.[9] In particular, EPA selected labor rates that correspond to categories of labor employed in the retail motor fuels sector (NAICS 447).

The analysis adjusts these rates using a 12 percent overhead factor and a fringe benefits factor of 28.3 percent, which is specific to service-providing industries.[10] For requirements that are likely

[8] E^2, Incorporated, memoranda and analyses submitted under Contract EP-W-05-018, "U.S. Environmental Protection Agency. Underground Storage Tanks/Leaking Underground Storage Tanks Analytical and Technical Support." Where gaps existed in the analyses, EPA used the best professional judgment of its UST system technical experts. All supporting materials not included in the appendices can be found in the docket for the proposed rule.

[9] Labor rates reflect the May 2008 Occupational Employment and Wage publication by the Bureau of Labor Statistics. See Appendix D for the particular Standard Occupational Classification codes used. EPA does not use the costs in its Information Collection Request 1360.08 because those labor rates reflect all industries and do not represent typical costs to the majority of UST owners and operators.

[10] The overhead factor of 12 percent comes from Office of Management and Budget Circular No. A-76, p. D-7. Although this rate reflects government overhead rates, we believe it is also representative of the low-overhead structure of the retail motor fuels sector. The fringe benefits factor is from Bureau of Labor Services, Employer Costs for Employee Compensation, September 2009. See Table 10: All workers, service-providing industries.

to be satisfied by third-parties, such as testing, labor costs are included in the costs of those services.

In addition, specific requirements under the proposed regulation are addressed as follows:

- For proposed regulatory changes that take effect over time as equipment ages, the analysis assumes a constant rate of equipment replacement, and calculates a constant annual payment for the net present value of 20 years of replacements. Appendix D discusses the specific assumptions made in the analysis.

- To identify the total system-level compliance cost of removing deferrals from airport hydrant fuel distribution systems (AHFDSs) and field-constructed tanks (FCTs), the analysis calculates both the direct costs of removing the deferral of these systems from the regulations under 40 CFR Part 280, and the additional costs of complying with other new regulatory options that apply to all systems (and become relevant when deferrals are removed). Under the proposed regulations, owners and operators of these systems must perform annual bulk line testing at prescribed rates or use an automatic tank gauge at prescribed leak rates. Appendix A discusses specific assumptions related to these tank populations.

- To estimate the total system-level compliance cost of removing the deferral from emergency generator tanks, the analysis calculates the cost of complying with specific proposed changes that apply to the broader universe of conventional UST systems and become relevant when the deferral is removed. Removal of the deferral under the proposed rule means that EGTs must comply with release detection requirements at 40 CFR Part 280, Subpart D.

Exhibit 3-1 presents the unit-level costs for the individual requirements in the proposed rule.[11]

[11] See Appendix D for a detailed discussion of these costs.

Exhibit 3-1

Unit Costs For The Requirements In The Proposed Rule[i]

	ONE-TIME [a] ($)	O&M ($)	REPAIR/REPLACEMENT COST [b] ($)
Release Prevention			
Walkthrough inspections	$0.00	$25.36	$0.13
Overfill prevention equipment tests	$0.00	$214.69	$11.00
Spill prevention equipment tests	$0.00	$125.68	$3.34
Interstitial integrity tests	$0.00	$310.25	$126.10
Spill prevention equipment test after repair	$0.00	$125.68	$0.00
Overfill prevention equipment test after repair	$0.00	$214.68	$0.00
Interstitial integrity test after repair	$0.00	$157.78	$0.00
Eliminate flow restrictors in vent lines for all new tanks and when overfill devices are replaced	$394.20	$0.00	$0.00
Release Detection			
Operability tests – ATG	$0.00	$56.17	$1.12
Operability tests – interstitial monitoring	$0.00	$9.93	$1.16
Operability tests – electronic LLDs	$0.00	$56.17	$2.15
Operability tests – mechanical LLDs	$0.00	$0.00	$0.77
Eliminate groundwater and vapor monitoring as release detection methods	$68.89 [c]		
Add SIR/CITLD to regulations with performance criteria	$10.00	$0.00	$0.00
Change release detection leak rate probabilities – ATG	$2,431.37	-$8.00 [f]	$0.00
Change release detection leak rate probabilities – LLD	$412.39	-$12.00 [f]	$0.00
Change release detection leak rate probabilities – SIR	$15.00	-$2.40 [f]	$0.00
Change release detection leak rate probabilities – CITLD	$80.00	-$1.60 [f]	$0.00
Response to interstitial monitoring alarms	$0.00	$78.19	$0.00
Remove deferral for emergency generator tanks [h]	$298.56	$172.74	
Other			
Remove deferral for airport hydrant fuel distribution systems	$11,281.20	$229,837.14	$0.00
Remove deferral for UST systems with field-constructed tanks	$12.83	$55,474.81	$0.00
Require notification of ownership change	$0.00	$12.83	$0.00
Closure of lined tanks that cannot be repaired according to a code of practice	$35,499 [d]	$0.00	$0.00
Requirements for determining compatibility	$0.00	$1.89 [g]	$0.00
EPAct-related Provisions			
Operator training	$265.89	$130.80	$0.00
Secondary containment - new and replaced tanks	$7,890.18	$0.00	$0.00
Threshold for pipe replacement rather than repair [e]	$0.00	$0.00	$0.00
Under-dispenser containment for all new dispensers	$1,795.11	$0.00	$0.00

[a] One-time costs presented here are not shown in annual terms. For the purposes of estimating total annual costs for the proposed rule, these one-time expenditures are annualized over 20 years at a seven percent interest rate.

[b] Time value of money costs due to earlier repair and replacement of equipment reflect costs of repair or replacement sooner than would have occurred in the baseline. For most requirements, these are costs that would occur and be identified by annual tests, i.e., they reflect one year's worth of accumulated issues that require equipment repairs or replacements. Three requirements represent exceptions. TVM costs for overfill prevention and interstitial integrity testing, which occur every three years under the Preferred Option, represent the repairs and replacements over three years. In addition, TVM costs for

Exhibit 3-1

Unit Costs For The Requirements In The Proposed Rule[i]

	ONE-TIME [a] ($)	O&M ($)	REPAIR/REPLACEMENT COST [b] ($)
walkthrough inspections represent the repairs and replacements identified on a monthly basis to match the requirement under the Preferred Option. See Appendix D for additional details.			
[c] The cost presented here is the average unit cost for the phasing out of groundwater and vapor monitoring and the phasing in of alternative compliance methods. It includes elements of annualized one-time costs and O&M costs.			
[d] We assume that this cost occurs in full for the systems that require closure of lined tanks in a given year.			
[e] We assume all facilities exceeding the 50 percent threshold for piping replacement would opt to replace piping in the baseline; costs are therefore zero. See Appendix C for detailed calculations.			
[f] Operations and maintenance costs associated with the adjustment of release detection leak rate probabilities is negative because operators avoid costly testing related to false alarms.			
[g] This includes an annualized cost of $0.01 related to the cost of storing records for the life of the UST system.			
[h] Because different subsets of EGTs are subject to different requirements, we present average unit costs that divide the total cost to the affected universe by the total number of affected units. O&M costs include any TVM costs associated with operability tests. See Appendix D for additional details.			
[i] Cost estimates were derived using a seven percent discount rate.			

3.3 Calculation of Incremental Compliance Costs

This analysis estimates the compliance cost of the proposed rule by calculating the incremental cost of each regulatory change on the population of tank systems in every U.S. state and territory. This procedure relies on national estimates of the universe of systems employing specific baseline technologies, as well as EPA's assessment of the baseline regulatory requirements in each state and territory.[12] The analysis categorizes compliance costs into one-time or operations and maintenance costs and amortizes one-time compliance costs over the 20-year regulatory time horizon.[13] As a final step, it discounts annual compliance costs associated with several of the proposed changes to delayed compliance horizons specified in the proposed rule (e.g., overfill operability testing must be performed within three years of the date the proposed rule becomes effective).

To calculate compliance costs, EPA employs a number of assumptions, some of which likely overstate compliance costs:

- **Time value of money costs**. This analysis does not assume that the rate at which problems occur in UST systems will decline as a result of the proposed rule. The number and severity of problems will likely fall due to more frequent testing and inspections, but the rate of decline is uncertain and the analysis does not attempt to adjust for these changes. This likely causes the analysis to overestimate the costs of the proposed rule.

[12] For details regarding these assumptions, see Appendix B.

[13] See footnote 5 for an explanation of the use of a 20-year time horizon.

- **Size of universe**. EPA's analysis assumes that the number of UST systems in the universe remains constant over time, with new systems replacing closures. EPA's end-of-year reporting data reveal that the universe of conventional UST systems has declined at a rate over two percent per year since 1999.[14] Assuming this pattern continues, future annual compliance costs due to the proposed rule are likely to be lower than estimated in this analysis. However, in absence of other data we assume that new installations and upgrades will offset all closures, and that annual compliance costs will remain constant. Impacts of assuming an alternative baseline universe of UST systems that declines over time are discussed in Sections 3.3.1 and 3.4.1.

- **Full compliance.** EPA assumes that all owners and operators subject to each requirement will come into compliance. This ensures a high estimate of costs, as each system subject to the rule implements the required measures and consequently incurs the related costs.

- **Timeliness of repairs.** EPA assumes that all issues identified through testing of equipment will be properly addressed through immediate repair or replacement of equipment. This may overstate costs if owners or operators fail to address identified issues in a timely fashion.

- **Date on which costs are incurred.** EPA assumes that all costs are incurred at the beginning of the year in which each requirement of the proposed rule becomes effective. This may overstate costs that occur at the end of the time frame.

These combined assumptions help ensure that the total costs estimated in each scenario below are not likely to be understated, even in cases where some uncertainty is associated with unit cost estimates for equipment or testing. Two key areas of uncertainty that affect the distribution of costs are noted below.

- **Geographic distribution of technologies:** EPA lacks information on how UST systems with specific equipment (e.g., ATG) are distributed nationally. If most are located within states with existing applicable requirements, then costs could be lower (conversely, if most are located in states with no existing applicable requirements, then costs could be higher). In the absence of this data, EPA assumes a uniform distribution of technologies across all states. EPA assesses the extent to which this assumption creates cost uncertainty at the end of this chapter.

- **Distribution of costs across systems:** EPA does not have information on how costs are likely to be distributed among the systems that are subject to new requirements. For example, a correlation among systems that require overfill operability testing, spill prevention equipment tightness testing, and interstitial integrity testing after repair would concentrate costs on these systems in ways that

[14] See U.S. Environmental Protection Agency, Office of Underground Storage Tanks, Semi-Annual Report of UST Performance Measures for Fiscal Years 1999 and 2009. In addition, industry data indicates that in recent years, the net decline in the population of facilities with UST systems has been roughly 1.4 percent per year.

EPA's primary assessment of costs does not capture. While this does not affect total cost estimates, EPA assesses the distributional consequences of an outcome where costs are highly-concentrated in Chapter 5.

3.3.1. Calculation of Incremental Compliance Costs Using an Alternative Baseline

EPA's primary analysis assumes that the universe of UST systems stays constant over time. That is, the analysis assumes that when an UST system enters the universe, another exits, and vice versa. However, data show that the universe of UST systems has been declining over the past two decades (albeit at a slowing rate). Therefore, EPA also assesses compliance costs associated with the proposed rule based on an alternative baseline that projects a declining universe.

To calculate the rate of universe decline, EPA mapped historical data on the universe of UST systems from 1991 through 2010 to an exponential one-phase decay function, which appears to most accurately represent the observed behavior of the UST system universe over time.[15] Steep declines in the universe of UST systems in past years reflect increases in tank size as well as industry consolidation. However, these declines may be reaching functional limits, both because the number of fuel outlets needed to serve the population is considerable, and because tank sizes may be reaching a practical limit in their ability to be transported and installed.[16,17]

The function used to project future UST universe sizes indicates that over a 20-year time period, the annual number of affected UST systems gradually declines to 586,021 UST systems by year 20 under this alternative baseline.[18] The number of UST systems affected under this alternative baseline is approximately 97 percent of the size of the original baseline, which assumes a constant universe size of 611,449 UST systems over this period. As a result, compliance costs associated with the proposed rule are only marginally smaller under this alternative baseline. See Appendix J for additional details.

[15] To estimate future UST universe sizes, we used a single exponential decay function, which assumes that a quantity declines at a rate proportional to its value. This is an appropriate function given the singular and slowing rate of decline observed in the universe of UST systems over time. The equation for such an exponential singular decay function is $Y = (Yo - P) * e^{(-k*X)} + P$, where P represents the "plateau," or limit of the function and k represents the function's half-life. (See Appendix J for additional details.)

[16] See Wayne Geyer, "Where Has Our Petroleum Storage Capacity Gone?" Steel Tank Institute, https://www.steeltank.com/LinkClick.aspx?fileticket=h8g9YO5y%2BfI%3D&tabid=108&mid=502. This source indicates simultaneous trends in increasing average tank sizes as well as decreasing UST system totals.

[17] While this alternative baseline assumes a steady decline in the number of UST systems, it is possible that the number of UST systems may actually increase in the future to trend with population growth and economic expansion as more people living in more areas may necessitate more retail motor fuel outlets.

[18] EPA assumes that owners and operators amortize all capital costs over a 20-year expected regulatory horizon to be consistent with the 20-year expected lifetime of an UST system.

3.4 Results of Assessment of Compliance Costs

Exhibit 3-2 presents a summary of the estimated incremental compliance costs associated with the proposed rule by type of UST system affected. In all options, it is clear that the category of conventional UST systems will bear the largest proportion of compliance costs under the proposed rule. While compliance costs associated with removal of deferrals from EGTs are constant across regulatory scenarios, other costs vary substantially among the regulatory options. The model parameters used to produce the results discussed in this chapter are presented in Appendix E and were selected to reflect the preferred and alternative options described in Chapter 1**.**

Exhibit 3-2

Total Annual Compliance Costs Of The Proposed Rule For UST Systems Affected[c]

Option	Preferred Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Conventional UST systems [a]	$180	$360	$120
Emergency Generator Tanks (EGTs) [b]	$2.2	$2.2	$2.1
Airport Hydrant Fuel Distribution Systems (AHFDSs)	$18	$120	$0.0
UST systems with Field-Constructed Tanks (FCTs)	$4.6	$33	$0.0
Total	**$200**	**$520**	**$120**

[a] Conventional UST systems include all systems that are not AHFDSs, FCTs, or EGTs.
[b] Costs for EGTs are lower in Alternative 2 because operability testing is performed every 3 years versus every year under other options.
[c] Cost estimates were derived using a seven percent discount rate.

Exhibit 3-3 presents a disaggregation of compliance costs under each regulatory option. The following areas contribute significantly to the differences in compliance costs among the alternatives.

- **Release prevention**: The greatest difference in compliance costs between Alternative 1 and the Preferred Option is related to release prevention; specifically, due to the combination of walkthrough inspections, overfill prevention equipment tests, spill prevention equipment tests, and interstitial integrity tests, and testing after repairs. These requirements account for 55 percent and 73 percent of total compliance costs, respectively. This variation is largely dependent on the testing or inspection frequency required under each alternative.

- **Removal of deferrals for AHFDSs and UST systems with FCTs**: Removal of deferrals for AHFDSs and FCTs is accompanied by tightness testing of equipment that varies in frequency depending on the alternative. This tightness test drives most of the variation in compliance costs. Under the Preferred Option, total costs for these systems are $23 million, or approximately 11 percent of total compliance costs; under Alternative 1, total costs are $153 million or

approximately 29 percent of total compliance costs.[19] Alternative 2 maintains the deferrals and therefore has no incremental compliance cost.

- **Operability tests for release detection methods**: The Preferred Option and Alternative 1 each require annual testing of the operability of release detection systems, while Alternative 2 requires these tests every three years. Operability testing costs approximately $21 million under both the Preferred Option and Alternative 1, though they constitute 11 percent of total compliance costs for the Preferred Option and only four percent of total compliance costs for Alternative 1. Three-year testing under Alternative 2 (which includes operability tests for groundwater and vapor monitoring since they would remain as release detection methods) costs approximately $8 million, or about seven percent of total compliance costs for that option.

In total, these categories represent approximately 90 percent of the total compliance costs for each option. In addition, the adjustment of release detection leak rate probabilities under Alternative 1 constitutes most of the remaining 10 percent of costs for that option.

EPA determines average compliance costs per system by dividing the total cost of the proposed rule by the total 611,449 systems in the regulated universe of conventional UST systems and EGTs. EPA's analysis shows that the compliance cost for this proposed rule is $300 per system, or approximately $890 per typical facility among motor fuel retailers, the sector with the highest average number of UST systems per facility.[20]

Exhibit 3-4 presents the same total costs as **Exhibit 3-3** but shows the number of systems affected and the cost of the requirement per affected system. The costs in this exhibit reflect annualized one-time costs, discounting, and adjustments for the adoption of certain requirements over time (e.g., elimination of flow restrictors for new and replaced tanks), and therefore differ from the unit costs presented in **Exhibit 3-1**. It is important to note that the unit costs in **Exhibit 3-4** cannot be summed to obtain a cost per system, as nearly all systems are already in compliance with some requirements of the proposed rule.

[19] In addition, Alternative 1 calls for tightness testing at a lower leak rate. See Appendix A for details.

[20] The $300 estimate excludes costs associated with removal of deferrals for AHFDSs and UST systems with FCTs, assumes 2.97 systems per retail motor fuel facility, and includes the cost of $23 per facility for them to review the regulation. This approach does not address variability of baseline compliance across systems; to assess uncertainty associated with this approach, EPA presents a sensitivity analysis in Chapter 5.

Exhibit 3-3

Annual Compliance Costs Due To The Proposed Rule For UST Systems Affected
All values in $ thousands[i]

Description	Preferred Option			Alternative 1			Alternative 2		
	Capital Cost (Annualized)	O&M	Total Cost	Capital Cost (Annualized)	O&M	Total Cost	Capital Cost (Annualized)	O&M	Total Cost
Release Prevention									
Walkthrough inspections	$0.0	$46,000.0	$46,000.0	$0.0	$46,000.0	$46,000.0	$0.0	$14,000.0	$14,000.0
Periodic testing of: - Overfill prevention equipment - Spill prevention equipment [a] - Interstitial integrity	$0.0	$87,000.0	$87,000.0	$0.0	$230,000.0	$230,000.0	$0.0	$78,000.0	$78,000.0
Testing after repairs to spill and overfill prevention equipment, and interstices [b]	$0.0	$13,000.0	$13,000.0	$0.0	$8,700.0	$8,700.0	$0.0	$13,000.0	$13,000.0
Elimination of flow restrictors in vent lines for all new tanks and when overfill devices are replaced	$1,200.0	$0.0	$1,200.0	$1,200.0	$0.0	$1,200.0	N/A	N/A	N/A
Subtotal – Release Prevention [g]	**$1,200.0**	**$146,000.0**	**$147,200.0**	**$1,200.0**	**$284,700.0**	**$285,900.0**	**$0.0**	**$105,000.0**	**$105,000.0**
Release Detection									
Operability tests for release detection methods	$0.0	$21,000.0	$21,000.0	$0.0	$21,000.0	$21,000.0	$0.0	$7,900.0	$7,900.0
Eliminate groundwater and vapor monitoring as release detection methods			$2,000.0			$2,300.0	N/A	N/A	N/A
Add SIR/CITLD to regulations with performance criteria	$2.7	$0.0	$2.7	$2.7	$0.0	$2.7	$2.7	$0.0	$2.7
Remove deferral for emergency generator tanks [c]	$310.0	$1,900.0	$2,200.0	$310.0	$1,900.0	$2,200.0	$310.0	$1,800.0	$2,100.0
Change release detection leak rate probabilities [d]	N/A	N/A	N/A	$53,000.0	-$3,800.0	$50,000.0	N/A	N/A	N/A
Response to interstitial monitoring alarms	$0.0	$830.0	$830.0	$0.0	$830.0	$830.0	$0.0	$830.0	$830.0
Subtotal – Release Detection [g]	**$312.7**	**$23,730.0**	**$26,032.7**	**$53,312.7**	**$19,930.0**	**$76,332.7**	**$312.7**	**$10,530.0**	**$10,832.7**
Other									
Remove deferral for airport hydrant fuel distribution systems [e]	$85.0	$18,000.0	$18,000.0	$85.0	$120,000.0	$120,000.0	N/A	N/A	N/A

Exhibit 3-3

Annual Compliance Costs Due To The Proposed Rule For UST Systems Affected
All values in $ thousands[i]

Description	Preferred Option			Alternative 1			Alternative 2		
	Capital Cost (Annualized)	**O&M**	**Total Cost**	**Capital Cost (Annualized)**	**O&M**	**Total Cost**	**Capital Cost (Annualized)**	**O&M**	**Total Cost**
Remove deferral for UST systems with field-constructed tanks	$0.0	$4,600.0	$4,600.0	$0.0	$33,000.0	$33,000.0	N/A	N/A	N/A
Require notification of ownership change	$0.0	$42.0	$42.0	$0.0	$42.0	$42.0	$0.0	$42.0	$42.0
Closure of lined tanks that cannot be repaired according to a code of practice [f]	$0.0	$2,100.0	$2,100.0	$0.0	$2,100.0	$2,100.0	$0.0	$2,100.0	$2,100.0
Requirements for determining compatibility	$11.0	$1,200.0	$1,200.0	$11.0	$1,200.0	$1,200.0	$11.0	$1,200.0	$1,200.0
Subtotal – Other [g]	**$96.0**	**$25,942.0**	**$25,942.0**	**$96.0**	**$156,342.0**	**$156,342.0**	**$11.0**	**$3,342.0**	**$3,342.0**
EPAct-related Provisions									
Operator training	$23.0	$120.0	$140.0	$23.0	$120.0	$140.0	$23.0	$120.0	$140.0
Secondary containment	$920.0	$0.0	$920.0	$920.0	$0.0	$920.0	$920.0	$0.0	$920.0
Subtotal – EPAct-related Provisions [g]	**$943.0**	**$120.0**	**$1,060.0**	**$943.0**	**$120.0**	**$1,060.0**	**$943.0**	**$120.0**	**$1,060.0**
Subtotal [g]	**$2,600.0**	**$200,000.0**	**$200,000.0**	**$56,000.0**	**$460,000.0**	**$510,000.0**	**$1,300.0**	**$120,000.0**	**$120,000.0**
Additions for new units (beyond those included above) [h]	$4.6	$0.0	$4.6	$750.0	$0.0	$750.0	$4.6	$0.0	$4.6
Total [g]	**$2,600.0**	**$200,000.0**	**$200,000.0**	**$57,000.0**	**$460,000.0**	**$520,000.0**	**$1,300.0**	**$120,000.0**	**$120,000.0**

Exhibit 3-3

Annual Compliance Costs Due To The Proposed Rule For UST Systems Affected
All values in $ thousands[i]

Description	Preferred Option			Alternative 1			Alternative 2		
	Capital Cost (Annualized)	O&M	Total Cost	Capital Cost (Annualized)	O&M	Total Cost	Capital Cost (Annualized)	O&M	Total Cost

[a] Alternative 1 calls for spill prevention equipment replacement every three years. For analytical convenience, we annualize the cost of replacement over three years and incorporate it as an O&M cost.

[b] Costs fall under Alternative 1 compared with the Preferred Option because replacement of spill prevention equipment every 36 months will eliminate the need for repairs to such equipment.

[c] Costs related to removal of deferrals for the regulation of emergency generator tanks include the cost of removal of deferrals, installation and maintenance of ATG on approximately seven percent of systems, installation and maintenance of SIR on 60 percent of systems, and performing operability testing on all EGT systems. See Appendix D for details. O&M costs for emergency generator tanks are lower in Alternative 2 because operability testing is performed every 3 years versus every year under other options.

[d] Operations and maintenance costs associated with the adjustment of release detection leak rate probabilities is negative because operators avoid costly testing related to false alarms. These avoided costs are the only items included in the O&M for this requirement.

[e] Airport hydrant fuel distribution systems include a capital cost because tanks associated with airport hydrant fuel distribution systems without existing ATGs are assumed to install ATGs to comply with the requirement. UST systems with field-constructed tanks without existing ATGs are assumed to conduct annual precision tightness tests to comply with the requirement. See Appendix A for details.

[f] Although the closure of lined tanks represents a capital cost, we consider it an operations and maintenance cost as a modeling convenience. See Appendix D for details.

[g] Total may not add correctly due to rounding.

[h] As a simplifying assumption, EPA assumes that UST systems enter and exit the universe at a constant annual rate, such that the total number of UST systems in the universe does not change. We assume that operations and maintenance costs associated with these systems offset each other, as the number of entries equals the number of exits; however, new systems entering the universe will still incur incremental capital costs associated with certain requirements (e.g., a new emergency generator tank would need to install a release detection method). For modeling purposes, we account for these new units in the "Additions for new units." The costs shown reflect the capital costs associated with new units for all but the following requirements: elimination of flow restrictors for new tanks, requirement of secondary containment for new tanks, and requirement of under-dispenser containment for new dispenser systems.

[i] Cost estimates were derived using a seven percent discount rate.

Exhibit 3-4

Discounted And Annualized Cost Per System Affected By Requirement[g]

Description[a]	Preferred Option		Alternative 1		Alternative 2	
	Cost per System [f]	Systems Affected	Cost per System [f]	Systems Affected	Cost per System [f]	Systems Affected
Release Prevention						
Walkthrough inspections	$104	440,817	$104	440,817	$37	387,724
Periodic testing of: [b] - Overfill prevention equipment - Spill prevention equipment [c] - Interstitial integrity	$299	290,891	$681	335,750	$180	432,682
Testing after repairs to spill and overfill prevention equipment, and interstices [d]	$164	82,276	$106	82,276	$164	82,276
Eliminate flow restrictors in vent lines for all new tanks and when overfill devices are replaced	$37	32,460	$37	32,460	$0	32,460
Release Detection						
Operability tests for release detection methods [b]	$121	176,934	$121	176,934	$52	152,915
Eliminate groundwater and vapor monitoring as release detection methods	$63	31,612	$74	31,612	$0	31,612
Add SIR/CITLD to regulations with performance criteria	$1	2,882	$1	2,882	$1	2,882
Remove deferral for emergency generator tanks [e]	$188	11,704	$188	11,704	$181	11,704
Change release detection leak rate probabilities [b]	N/A	N/A	$251	197,532	N/A	N/A
Response to interstitial monitoring alarms	$78	10,569	$78	10,569	$78	10,569
Other						
Remove deferral from airport hydrant fuel distribution systems	$188,545	97	$1,193,506	97	N/A	N/A
Remove deferral from UST systems with field-constructed tanks	$45,344	102	$327,861	102	N/A	N/A
Require notification of ownership change	$5	8,946	$5	8,946	$5	8,946
Closure of lined tanks that cannot be repaired according to a code of practice	$35,499	59	$35,499	59	$35,499	59
Requirements for determining compatibility	$2	611,449	$2	611,449	$2	611,449
EPAct-related Provisions						
Operator training	$54	2,625	$54	2,625	$54	2,625
Secondary containment	$415	2,224	$415	2,224	$415	2,224

[a] Requirements that apply at the facility level are converted to a system basis using a conversion factor of 2.74 systems per facility.

[b] Because the number of systems affected varies depending on the individual testing requirements, we estimate the number of systems affected by all three requirements by dividing their total cost by the sum of their unit costs. For example, if the three requirements had total unit costs of $100 and created new costs of $100,000, we would estimate that they affect 1,000 systems.

[c] Alternative 1 calls for spill prevention equipment replacement every three years. For analytical convenience, we annualize the cost of replacement over three years and incorporate it as an O&M cost.

[d] Costs fall under Alternative 1 compared with the Preferred Option because replacement of spill prevention equipment every 36 months will eliminate the need for repairs to such equipment.

[e] Costs related to removal of deferrals for the regulation of emergency generator tanks include the cost of removal of deferrals, installation and maintenance of ATG on approximately seven percent of systems, installation and maintenance of SIR on 60 percent of systems, and performing operability testing on all EGT systems. See Appendix D for details. Costs for emergency generator tanks are lower in Alternative 2 because operability testing is performed every 3 years versus every year under other options.

[f] It is important to note that these unit costs cannot be summed to obtain a total cost per system because nearly all systems are already in compliance with some requirements of the proposed rule.

[g] Cost estimates were derived using a seven percent discount rate.

3.4.1 Assessment of Compliance Costs under the Alternative Baseline Scenario

Exhibit 3-5 presents total annual compliance costs of the proposed rule under the alternative baseline discussed in Section 3.3.1. Annual compliance costs are slightly less than those presented in **Exhibit 3-2**, reflecting the fact that the cumulative universe of affected systems in the alternative baseline is only marginally smaller than the universe in the original baseline.

Exhibit 3-5

Total Annual Compliance Costs Of The Proposed Rule Using an Alternative Baseline For UST Systems Affected[d]

Option	Preferred Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Conventional UST systems [a]	$170	$350	$110
Emergency Generator Tanks (EGTs) [b]	$2.2	$2.2	$2.1
Airport Hydrant Fuel Distribution Systems (AHFDSs)	$18	$120	$0.0
UST systems with Field-Constructed Tanks (FCTs)	$4.6	$33	$0.0
Total[c]	**$200**	**$500**	**$120**

[a] Conventional UST systems include all systems that are not AHFDSs, FCTs, or EGTs.
[b] Costs for EGTs are lower in Alternative 2 because operability testing is performed every 3 years versus every year under other options.
[c] Totals may not add exactly due to rounding.
[d] Cost estimates were derived using a seven percent discount rate.

3.5 Sensitivity Analyses

Certain aspects of EPA's compliance cost estimates are characterized by significant uncertainty and are sufficiently large that deviations from chosen assumptions may have a measurable impact on cost estimates. In this section, the analysis evaluates the sensitivity of certain results to variation in key parameters. These sensitivity analyses include evaluations of:

- Total compliance costs to the proposed rule under an alternative estimate of labor costs. Specifically, the analysis evaluates the effect of using higher labor rates, overhead costs, and fringe benefits factors, and lower average labor costs.

- Highest and lowest compliance cost scenarios for the distribution of technologies tested for overfill prevention equipment operability, tightness of spill prevention equipment, and interstitial integrity. If facilities using these technologies are disproportionately located in states that do not already have similar regulations in place, costs could be higher than estimates presented in the earlier parts of this chapter. Similarly, if affected facilities are located in states that already have similar regulations in place, costs could be substantially lower than estimated.

- High-end and low-end estimates of possible compliance costs for interstitial integrity testing. EPA's estimate of costs associated with interstitial integrity testing assumes a certain distribution of technologies, each of which carries a different testing cost. Variation in this distribution of technologies among

facilities can significantly affect the estimates of compliance costs associated with interstitial integrity testing.

3.5.1. Compliance Costs of the Proposed Rule Using Alternative Estimates of Labor Rates, Overhead Costs, and Fringe Benefits

For conventional UST facilities, EPA has selected labor, overhead, and fringe benefits rates that best reflect a "typical" UST facility. These labor rates are representative of skilled labor costs at motor fuel retailers, which own and operate roughly 80 percent of the universe of UST systems. The use of these rates has a material impact on the estimated compliance cost of the proposed rule because they drive the operations and maintenance costs associated with requirements for walkthrough inspections and operability tests.

To evaluate the impact of alternative labor rates on total compliance cost estimates, EPA considered two alternative scenarios. The first is consistent with the OUST Information Collection Request 1360.08 and reflects labor rates reflective of economy-wide average wages, benefits, and overhead. This represents a high-end estimate because it reflects industries with highly skilled labor requirements and benefits (e.g., law firms).[1] The second uses specific labor categories and costs representative of retail motor fuel establishments, but assumes that lower-level staff may complete walkthrough inspections.[2]

Exhibit 3-6 presents the results for the three labor category scenarios. While one-time costs are not affected by the change in labor rates, operations and maintenance costs in the high-cost scenario are roughly $100 million higher than EPA's primary estimate, totaling $300 million rather than $200 million (an increase of 50 percent). The majority of this increase is due to higher operations and maintenance costs related to walkthrough inspections and operability tests. In contrast, the low-end labor-rate cost estimate totals approximately $180 million, roughly $20 million (or 10 percent) lower than EPA's central estimate. In addition to lower benefits and labor rates, this estimate assumes that clerical-level personnel will perform walkthrough inspections. This is consistent with remarks by UST experts, who indicated these tasks were most likely to be completed by non-technical workers. For AHFDSs and systems with FCTs, EPA uses constant industry average labor rates across all scenarios.

[1] These labor categories were reported in OUST Information Collection Request 1360.08, dated October 24, 2007. We used revised labor rates from those categories to reflect 2009 conditions. However, documentation in this analysis did not provide a reason for the use of economy-wide average labor rates, and our assessment of the universe suggests that retail-based rates are more appropriate.

[2] Engineering experts consulted for this analysis suggest that walkthrough inspections are most likely to be performed by gas station clerks or service attendants, not technical personnel.

Exhibit 3-6

Compliance Cost Sensitivity Analysis: Alternative Labor Rates[i]

Description	Proposed Rule		
	Lower Estimate ($ thousands) [a]	**Primary Estimate used for Analysis ($ thousands)** [b]	**Upper Estimate ($ thousands)** [c]
Release Prevention			
Walkthrough inspections [d]	$23,000	$46,000	$120,000
Periodic testing of: - Overfill prevention equipment - Spill prevention equipment - Interstitial integrity	$87,000	$87,000	$87,000
Testing after repairs to spill and overfill prevention equipment, and interstices	$13,000	$13,000	$14,000
Elimination of flow restrictors in vent lines for all new tanks and when overfill devices are replaced	$1,200	$1,200	$1,200
Subtotal - Release Prevention	**$124,200**	**$147,200**	**$222,200**
Release Detection			
Operability tests for release detection methods	$20,000	$21,000	$42,000
Eliminate groundwater and vapor monitoring as release detection methods [e]	$2,100	$2,000	$270
Add SIR/CITLD to regulations with performance criteria	$3	$3	$3
Remove deferral for emergency generator tanks	$2,100	$2,200	$3,200
Change release detection leak rate probabilities	$0	$0	$0
Response to interstitial monitoring alarms	$830	$830	$830
Subtotal - Release Detection	**$25,033**	**$26,033**	**$46,303**
Other			
Remove deferral for airport hydrant fuel distribution systems [f]	$18,000	$18,000	$18,000
Remove deferral for UST systems with field-constructed tanks [f]	$4,600	$4,600	$4,600
Require notification of ownership change	$19	$42	$74
Closure of lined tanks that cannot be repaired according to a code of practice	$2,100	$2,100	$2,100
Requirements for determining compatibility	$910	$1,200	$2,500
Subtotal – Other	**$25,629**	**$25,942**	**$27,274**
EPAct-related Provisions			
Operator training	$130	$140	$230
Secondary containment	$920	$920	$920
Subtotal - EPAct-related Provisions	**$1,050**	**$1,060**	**$1,150**
Subtotal [g]	**$180,000**	**$200,000**	**$300,000**
Additions for new units (beyond those included above) [h]	$5	$5	$5
Total [g]	**$180,000**	**$200,000**	**$300,000**

Exhibit 3-6

Compliance Cost Sensitivity Analysis: Alternative Labor Rates[i]

Description	Proposed Rule		
	Lower Estimate ($ thousands) [a]	**Primary Estimate used for Analysis ($ thousands)** [b]	**Upper Estimate ($ thousands)** [c]

[a] Lower Estimate relies on BLS Industry-Specific Occupational Employment and Wages, NAICS 447000 - Gasoline Stations, May 2008 for: Managerial (41-1011 First-Line Supervisors/Managers of Retail Sales Workers): Technical (53-1021 First-Line Supervisors/Managers of Helpers, Laborers, and Material Movers, Hand); Clerical (53-6031 Service Station Attendants); and BLS National Occupational Employment and Wages, May 2008 for Technical for operability testing (49-2094 Electrical and Electronics Repairers, Commercial and Industrial Equipment) and Legal (23-1011 Lawyers). Benefits rate is 24.6 percent of wages, as reported in BLS Employer Costs for Employee Compensation, September 2008. Table 10: Trade, transportation, and utilities - retail trade. Overhead rate is 12 percent from OMB Circular A-76, p. D-7. Assumes that service station attendants perform walkthrough inspections, consistent with information from experts consulted for this analysis.

[b] Primary Estimate relies on BLS Industry-Specific Occupational Employment and Wages, NAICS 447000 - Gasoline Stations, May 2008 for: Managerial (11-0000 Management Occupations (Major Group)); Technical (53-1021 First-Line Supervisors/Managers of Helpers, Laborers, and Material Movers, Hand); and Clerical (43-9061 Office Clerks, General); and BLS National Occupational Employment and Wages, May 2008 for Technical for operability testing (49-2094 Electrical and Electronics Repairers, Commercial and Industrial Equipment) and Legal (23-1011 Lawyers). Benefits rate is 28.3 percent (BLS Employer Costs for Employee Compensation, September 2009. Table 10: All workers, service-providing industries). Overhead rate is 12 percent from OMB Circular A-76, p. D-7.

[c] Upper Estimate relies BLS Employer Costs For Employee Compensation, September 2008 for Managerial (Table 9, Management, Professional, and Related); Technical and Technical for operability testing (Table 10, Professional and Technical Services (Service Industries)); and Clerical (Table 11, Office and Administrative Support); and BLS National Occupational Employment and Wages, May 2008 for Legal (23-1011 Lawyers). Overhead rate used is 67 percent from OUST Information Collection Request 1360.08 from October 24, 2007.

[d] Walkthrough inspections under the Lower Estimate rely on clerical labor rates estimated using BLS Standard Occupational Code 53-6031, Service Station Attendants; under other scenarios, we use technical labor rates estimated using BLS Standard Occupational Code 53-1021, First-Line Supervisors/Managers of Helpers, Laborers, and Material Movers, Hand. UST experts consulted for this analysis suggest that walkthrough inspections are most likely to be performed by gas station clerks or service attendants, not technical personnel (e.g. 3rd-party contractors).

[e] Baseline activities for operators of tanks that use groundwater or vapor monitoring include activities such as recording of monthly measurements, which rely on technical labor. By eliminating groundwater and vapor monitoring as release detection methods under the proposed rule, these activities will no longer be required. As a result, increasing labor rates reduces the incremental costs of the proposed rule.

[f] The labor rate used for these types of system is the latest ICR labor rate, except for a component of the Operator Training requirement, which uses the United States Air Force labor rate for pay grade E-6 over 3.

[g] Totals may not add exactly due to rounding.

[h] As a simplifying assumption, EPA assumes that UST systems enter and exit the universe at a constant annual rate, such that the total number of UST systems in the universe does not change. We assume that operations and maintenance costs associated with these systems offset each other, as the number of entries equals the number of exits; however, new systems entering the universe will still incur incremental capital costs associated with certain requirements (e.g., a new emergency generator tank would need to install a release detection method). For modeling purposes, we account for these new units in the "Additions for new units." The costs shown reflect the capital costs associated with new units for all but the following requirements: elimination of flow restrictors for new tanks, requirement of secondary containment for new tanks, and requirement of under-dispenser containment for new dispenser systems.

[i] Cost estimates were derived using a seven percent discount rate.

3.5.2 Sensitivity Analysis of Distribution of Technologies Tested for Overfill Operability, Spill Prevention Equipment Tightness, and Interstitial Integrity

Because data on the distribution of UST technologies (including release detection and prevention technologies) is available only at a national level, EPA is not able to identify how facilities and systems with certain technologies are distributed across different states. As a result, the cost analysis assumes that technologies are distributed uniformly across all states and territories. For systems that require testing for overfill operability, spill prevention equipment tightness, and interstitial integrity, actual compliance costs may differ substantially from EPA's estimates if this assumption does not hold. For example, if facilities using these technologies are disproportionately located in states that do not already have similar testing requirements in place in the baseline, compliance costs could be higher than the estimates based on a uniform distribution presented in **Exhibit 3-2** and **Exhibit 3-3**. Similarly, if affected facilities are concentrated in states that already have similar regulations in place in the baseline, then actual compliance costs could be substantially lower than estimates based on a uniform distribution.

To investigate the impact of the assumption of uniform distribution of technologies, EPA performed a bounding analysis of the two extreme cases of distribution. **Exhibit 3-7** reports the possible range of values for scenarios where compliance cost is the lowest (i.e., facilities are located in states that already satisfy the proposed rule), the actual model scenario based on uniform distribution, and the scenario in which compliance costs are highest. Variation between the minimum and maximum cost scenarios totals approximately $21 million, or eleven percent of the total compliance costs estimated for the rule. EPA's primary estimate of these costs is near the mid-point of the range of estimates.

Exhibit 3-7

Discounted Highest And Lowest Compliance Cost Scenarios For Technologies Tested For Overfill Operability, Spill Prevention Equipment Tightness, And Interstitial Integrity[b]

Regulatory change	Lower ($ millions)	Primary ($ millions)	Upper ($ millions)
Overfill operability testing[a]	$23	$23	$23
Spill prevention equipment testing	$54	$55	$62
Interstitial integrity testing	$0	$9	$13
Total	**$77**	**$87**	**$98**

[a] Because the entire universe of systems will be required to test overfill operability, EPA does not expect any uncertainty related to the locations of affected systems.
[b] Cost estimates were derived using a seven percent discount rate.

3.5.3 Sensitivity Analysis of Compliance Costs for Interstitial Integrity Testing

EPA's estimates of compliance costs associated with interstitial integrity tests are weighted to exclude tanks and piping that are continuously monitored using vacuum, pressure, or liquid-filled methods.[3] In addition, tanks using continuous interstitial monitoring sensors are excluded. For the purpose of this analysis, EPA assumes that five percent of tanks and 90 percent of piping with interstices will require such testing.[4] Costs may vary to the extent that the actual number of facilities with these types of equipment differs from these estimates.

To establish a range of possible values, EPA investigated the scenarios outlined in **Exhibit 3-8**. For relatively large changes in EPA's choices of parameters for universe affected, total costs for this proposed change vary between $5 million and $12 million. This uncertainty of $7 million represents four percent of the total estimated compliance costs of the rule.

Exhibit 3-8

Sensitivity Analysis Of Interstitial Integrity Testing Universe

Estimate		Universe Affected	Discounted Cost ($ millions)
Lower	Tanks	5%	$5
	Piping	50%	
Primary	Tanks	5%	$9
	Piping	90%	
Upper	Tanks	50%	$12
	Piping	95%	

Note: Cost estimates were derived using a seven percent discount rate.

3.5.4 Summary of Sensitivity Findings

EPA's sensitivity findings suggest that possible variation in labor rates is likely to produce the most significant impact on the estimated cost of the proposed rule: plausible selections for labor rates may reduce preferred option costs by approximately $20 million (10 percent) or increase them by $100 million (50 percent). Separately, EPA has identified potential variation of approximately eleven percent related to the distribution of technologies involved in overfill operability testing, integrity testing of interstitial areas, and spill prevention equipment tightness testing, and approximately four percent related to assumptions regarding interstitial

[3] Secondary containment areas include tank and piping interstitial areas as well as containment sumps used as part of the piping secondary containment or interstitial monitoring. Under the proposed rule, EPA will allow the following exceptions to interstitial integrity tests: (1) Tanks: Owners and operators using continuous interstitial monitoring on their tanks will not be required to perform periodic interstitial integrity tests; (2) Piping: Owners and operators using vacuum monitoring, pressure monitoring, or liquid-filled interstitial space monitoring on their underground piping will not be required to perform periodic interstitial integrity tests; and (3) Containment Sumps – Owners and operators using containment sumps which have two walls and continuously monitor the interstitial space between the walls for releases are not required to perform interstitial integrity tests.

[4] An interstitial integrity test is performed in the space between tank walls, pipe walls, or in a secondary containment sump area and ensures the area being tested has integrity and will contain a leak.

integrity testing. We note that each of these sensitivity analyses reflects variation compared with the primary estimates of costs presented throughout this chapter.

These analyses only illustrate the uncertainty surrounding certain elements of the proposed rule. The estimates presented in the body of this chapter represent reasonable, conservative central tendencies for the costs of the proposed rule.

3.6 Administrative Compliance Costs

In addition to compliance costs related to the operation of UST systems, the proposed rule will also impose certain administrative costs on affected entities. We outline these costs below.

3.6.1 State Government Administrative Compliance Costs

The proposed rule imposes new Underground Storage Tank program administration requirements on state government agencies.[5] Specifically, state government agencies will incur costs associated with new notification requirements, and costs associated with obtaining and reading the regulations. This section reviews state government costs associated with these activities.

Costs associated with obtaining and reading the regulations assume that 10 people will each take six hours to read the regulation in each state (using the legal labor rate for states of $47 per hour from OUST's ICR 1360.08). In addition, based on the ICR, we assume that the reporting and recordkeeping burden for states to apply for State Program Approval (SPA) is approximately 28.5 hours (using the clerical labor rate for states of $26 per hour). The total compliance cost in nominal terms is therefore approximately $205,000; the annualized compliance cost assuming the 20-year regulatory time horizon is approximately $19,000.[6] States that already require ownership change notifications will incur compliance costs associated with these activities.

State agencies that do not currently have a requirement for notification of changes in UST ownership or for at least an annual UST registration must also process a certain number of notices due to annual turnover in facility ownership. State government compliance costs for this activity assume a typical nominal recordkeeping cost of $30 per facility, based on OUST's ICR 1360.08; compliance costs assume the use of existing recordkeeping systems. Eight states and territories do not currently have recordkeeping requirements consistent with the proposed

[5] In some cases, UST systems are directly owned or operated by local, state, and federal government entities. These costs are subsumed in the estimates of compliance costs presented earlier in this chapter.

[6] Consistent with other parts of this regulatory impact analysis, we amortize one-time or capital costs over the regulatory time horizon of 20 years. If these costs are phased in over a three-year period, annual costs decrease to approximately $18,000.

regulation.[7] These eight states and territories will incur approximately $100,000 per year, due to an annual turnover rate of approximately 10 percent in UST facility ownership.

Lastly, each state agency will incur costs to process the one-time notifications of existence for EGTs, AHFDSs, and FCTs. State government compliance costs for this activity assume a typical nominal recordkeeping cost of $30 per facility, based on OUST's ICR 1360.08; compliance costs assume the use of existing recordkeeping systems. Based on the estimated universe of EGTs, AHFDSs, and FCTs, the total state processing cost in nominal terms is approximately $560,000; the annualized processing cost assuming the 20-year regulatory time horizon is approximately $53,000.

Total state government administrative compliance costs sum to $170,000 per year. Note that under alternative baseline assumptions, these costs would decline by a very small percentage (roughly 2 percent) as the universe of affected systems declines. These costs are reflected in **Exhibit 3-10**.

3.6.2 Costs to Regulated Universe to Review Regulations

This analysis assumes that all facility operators in the universe will be required to read the proposed rule in order to comply with it. For conventional USTs and EGTs, we estimate that reading and understanding the proposed rule will require 4.75 hours of labor from a manager at each facility. This equates to a one-time cost of approximately $244 for each facility, or $54 million. This is equivalent to an annual cost of $5.1 million under each proposed option. For FCTs and AHFDSs, we assume these costs are subsumed in the management costs for these systems (see Appendix A for details).

3.7 Summary – Total Annual Compliance Costs

In total, EPA estimates that the Preferred Option for the proposed rule will produce incremental costs of approximately $210 million per year compared to the current regulatory baseline. **Exhibit 3-9** summarizes these costs per category. Regardless of the option, conventional UST systems will incur over 65 percent of these costs. Costs to AHFDSs and FCTs comprise approximately 11 percent and 29 percent of total costs under the Preferred Option and Alternative 1, respectively.

[7] These states are Arizona, Georgia, Idaho, North Carolina, North Dakota, Nevada, and South Carolina. The Virgin Islands will also incur these costs.

Exhibit 3-9

Total Annual Compliance Costs[e,f]

Category	Preferred Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Conventional UST systems[a]	$180	$360	$120
Emergency Generator Tanks (EGTs) [b]	$2.2	$2.2	$2.1
Airport Hydrant Fuels Distribution Systems (AHFDSs)	$18	$120	$0.0
UST systems with Field-Constructed Tanks (FCTs)	$4.6	$33	$0.0
Cost to Owners/Operators to Read Regulations	$5.1	$5.1	$5.1
State Government Administrative Costs [c]	$0.2	$0.2	$0.2
Total Annual Compliance Costs [d,f]	**$210**	**$520**	**$130**

[a] Conventional UST systems include all systems that are not AHFDSs, FCTs, or EGTs.
[b] Costs for EGTs are lower in Alternative 2 because operability testing is performed every 3 years versus every year under other options.
[c] The costs for UST systems directly owned or operated by local, state, and federal government entities are included in the estimates of compliance costs within the other categories. Costs shown here reflect the administrative costs for state governments to read the regulations, apply for state program approval, process notifications of ownership changes, and process one-time notifications of EGT, AHFDS, and FCT existence.
[d] Totals may not add up due to rounding.
[e] Cost estimates were derived using a seven percent discount rate.
[f] Compliance costs include direct compliance costs and state oversight costs. For this regulatory impact analysis, direct compliance costs and state oversight costs provide a reasonable proxy to assess the proposed rule's social costs. See Chapter 3.1 for further discussion.

Limitations of Compliance Cost Analysis

While EPA has taken steps to present a sound analysis of compliance costs, it recognizes that certain assumptions and limitations are inherent to this assessment.

Tank configuration: This analysis assumes that a particular configuration of equipment represents the average UST system. This assumption affects the compliance costs of the proposed rule because systems with different configurations (e.g., more sumps per tank) could have different costs. Mischaracterizing this configuration may under- or overstate total costs as well as system-level costs.

System-level compliance costs: As discussed in Section 3.3, system-level compliance costs are based on public information, input from UST industry professionals, and EPA professional judgment, all of which are assumed to provide the most accurate available data at the time of this proposal. EPA recognizes that these data sometimes reflect only a small number of sources, and are therefore characterized by uncertainty.

As a result of these uncertainties, the precise cost of the proposed rule may differ from the estimate generated by EPA's analysis. The above sensitivity analyses, though not strictly additive, suggest that the outside range of cost uncertainty is approximately 50 percent from EPA's central estimates. Moreover, because EPA's estimate is framed by a number of conservative assumptions (outlined in section 3.3), it is unlikely that this analysis understates the costs of the proposed rule significantly.

3.7.1 Summary – Total Annual Compliance Costs under the Alternative Baseline Scenario

Under the alternative baseline universe assumption described in Section 3.3.1, EPA estimates that the Preferred Option for the proposed rule will produce incremental costs of approximately $200 million per year compared to $210 million in annual costs in the primary analysis. **Exhibit 3-10** summarizes these costs per category. Regardless of the option, conventional UST systems will incur over 65 percent of these costs. Costs to AHFDSs and FCTs comprise approximately 11 percent and 30 percent of total costs under the Preferred Option and Alternative 1, respectively.

Exhibit 3-10

Total Annual Compliance Costs Using an Alternative Baseline[e,f]

Category	Preferred Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Conventional UST systems[a]	$170	$350	$110
Emergency Generator Tanks (EGTs) [b]	$2.2	$2.2	$2.1
Airport Hydrant Fuels Distribution Systems (AHFDSs)	$18	$120	$0.0
UST systems with Field-Constructed Tanks (FCTs)	$4.6	$33	$0.0
Cost to Owners/Operators to Read Regulations	$5.1	$5.1	$5.1
State Government Administrative Costs [c]	$0.2	$0.2	$0.2
Total Annual Compliance Costs [d]	**$200**	**$510**	**$120**

[a] Conventional UST systems include all systems that are not AHFDSs, FCTs, or EGTs.
[b] Costs for EGTs are lower in Alternative 2 because operability testing is performed every 3 years versus every year under other options.
[c] The costs for UST systems directly owned or operated by local, state, and federal government entities are included in the estimates of compliance costs within the other categories. Costs shown here reflect the administrative costs for state governments to read the regulations, apply for state program approval, process notifications of ownership changes, and process one-time notifications of EGT, AHFDS, and FCT existence.
[d] Totals may not add up due to rounding.
[e] Cost estimates were derived using a seven percent discount rate.
[f] Compliance costs include direct compliance costs and state oversight costs. For this regulatory impact analysis, direct compliance costs and state oversight costs provide a reasonable proxy to assess the proposed rule's social costs. See Chapter 3.1 for further discussion.

Chapter 4. Assessment of Benefits And Cost Savings

4.1 Introduction

The beneficial impacts of a regulatory change are typically measured in two ways: as "social benefits" that usually take the form of reduced environmental damage, reduced human health risk, and improvements in the value of environmental amenities. Benefits also include avoided costs associated with reduced need for cleanup and avoided costs of "averting behavior" (e.g., obtaining replacement water supplies). Ideally, social benefits reflect accurate measures of the total "willingness to pay" (WTP) of consumers to obtain improvements in environmental quality. In other cases, avoided costs (e.g., medical care) can be used to inform proxy estimates of WTP when direct estimates of WTP are unavailable. In the context of this rule, EPA examines social benefits and separately considers the avoided costs associated with reduced need for cleanup of releases because reliable WTP estimates for the value of an avoided cleanup are not available, and because avoided costs represent a real economic cost savings.

This chapter describes the approaches used to evaluate avoided remediation (cleanup) costs and other benefits. It first outlines several different methods attempted for measuring benefits and cost savings, and describes the final selected method (expert consultation) in detail. Next, it provides a description of monetized cost savings and other benefits, including avoided cleanup costs, avoided vapor damage cleanup estimates, avoided product loss, and the value of avoided cancer risk associated with anticipated reductions in releases and reductions in severity of releases. The chapter then presents a screening-level analysis of the quantity of groundwater potentially protected by the regulations. Finally, we provide a qualitative discussion of ecological and other human health benefits.

4.2 Investigation of Empirical Methods for Measuring Benefits and Cost Savings

The benefits and cost savings of the proposed rule result from the reduced incidence and size of releases that would occur due to the new requirements. EPA examined a number of ways to use quantitative, empirical data on release rates, inspection effectiveness, and program performance to estimate directly the changes in releases that could be expected under the proposed rule. This section describes the different data sources and methods considered, and the limitations of each.

4.2.1 Engineering Estimates and Literature

One approach to estimating the benefits of the proposed rule would be to develop an engineering model of the release rates associated with equipment and practices before and after the implementation of the rule requirements. However, this approach would address only a small number of the proposed rule components because most of the requirements are not focused on equipment modifications, but instead call for inspections, testing, and maintenance. These are requirements for changes in human behavior, and are not easily measured using equipment testing.

This suggests that EPA could best measure benefits empirically by examining studies of how changing frequencies in inspection and testing would lead to different leak rates. Therefore, EPA conducted a targeted literature review of engineering literature and studies of the effectiveness of testing and inspection programs. We were unable to identify any studies directly applicable to the proposed UST regulations, but we did identify EPA and published literature on the effects of better inspection and testing rates more generally. We summarize several key studies below.

- **California study of impact of secondary containment on UST system releases (2002):**[1] This study examined whether use of secondary containment throughout UST systems resulted in differences in release rates. The study's conclusions were hampered by a limited sample size, and authors note that releases from other parts of the systems may have affected results. The study did not find a significant relationship between secondary containment and release rates at sites, but did find that facility-level factors (e.g., improper installations) made it more likely than expected that all systems at a facility would either have or lack releases. While the study cannot be used to directly estimate the benefits associated with the proposed regulation, its conclusions suggest that regulations focusing on effective facility-level inspections may be well-targeted.

- **National Research Council study of effectiveness of state vehicle emissions inspection and maintenance programs (2001):**[2] This study reviewed four state programs and one city program aimed at reducing motor vehicle emissions by requiring inspections and maintenance. While the study did not address UST systems, the structure of vehicle inspection programs is similar to the proposed regulations in that both require owners/operators to undertake routine inspections and undertake maintenance as needed. The study found that the programs had a measureable impact on ambient air quality, but did not identify whether the differences were statistically significant.[3] While the results do not provide a quantitative basis for estimating the impacts of the proposed rule, the study suggests that mandatory inspection programs can reduce emissions.

- **Environmental Results Program (ERP) data:**[4] Data from several environmental results programs (ERPs) show a statistically significant

[1] Thomas M. Young and Randy D. Golding, *Underground Storage Tank Field-Based Research Project Report*, submitted to the California State Water Resources Control Board under contract to the University of California, Davis, May 31, 2002

[2] Committee on Vehicle Emission Inspection and Maintenance Programs, *Evaluating Vehicle Emissions Inspection and Maintenance Programs*, National Academy Press, 2001.

[3] The study also concluded that the programs had more modest impacts than those predicted by air quality modeling, but this finding is of limited relevance to the current regulation, since no ambient conditions modeling has been conducted.

[4] See: Vermont Department of Environmental Conservation, "Final Report – Environmental Results Project – Vermont: Underground Storage Tank Facilities," March 17, 2010; Rhode Island Department of Environmental Management, Underground Storage Tank Environmental Results Program, Final Report, Tables I-IV; U.S.

improvement in verified compliance as a result of a combination of self-certification, technical assistance, and inspections. While these programs do not isolate the impact of specific regulatory changes, the results are consistent with other findings that programs that rely in part on self-implemented inspections and reporting can reduce noncompliance.

In general, the literature does not address UST inspection programs directly, and does not provide quantitative results that can be used to estimate the impacts of the proposed rule. However, the literature does provide data that generally indicate that self-implementing inspection programs (with external validation) do have an impact on equipment maintenance, and generally lead to a reduction in environmental impacts. This suggests that some positive impact should be expected from the proposed rule.

4.2.2 Statistical Analysis of State Release Data

A different approach to a robust analysis of benefits would be to develop a database of State UST rules and reported release rates before and after the effective dates of rules similar to the proposed rule. With good quality data, one could combine these rules and reported release rates and isolate the marginal impacts of various components of the proposed rule. To collect detailed data at the facility level, however, would require visiting state UST programs individually and collecting detailed site inspection data from state case files and archives. Not only would such an effort be prohibitive in terms of available resources, but our current knowledge of the state programs suggests that variable inspection practices and changes in record-keeping practices over time may limit the ability of the exercise to provide robust results.

In the absence of site-specific data, however, we collected and examined data on state regulatory programs and reported releases from available aggregate sources. Specifically, we identified and evaluated data from the following sources:

- **Leak Autopsy Reports:** In 2004 and 2005, EPA released two draft "leak autopsy" studies ("the draft 23-state Autopsy Report" and a separate study examining the State of Florida). These studies examined the sources and extent of releases that occurred in systems that were compliant with the 1998 standards, and identifies the extent to which different baseline releases are associated with failures of equipment in different parts of the UST system (e.g., piping, overfill protection equipment).[5]

- **State Regulatory and Report Data**: State programs are required to report aggregated information to EPA on the number of active UST systems, the number of inspections, and the number of confirmed releases reported in each six-month

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Environmental Protection Agency, "Evaluation of Three Environmental Results Programs (ERPs)," August 31, 2009; and U.S. Environmental Protection Agency, "ERP States Produce Results," December 2007.

[5] U.S. Environmental Protection Agency, Office of Underground Storage Tanks, "Evaluation of Releases from New and Upgraded Underground Storage Tank Systems – Peer Review Draft," U.S. EPA, August 2004, and U.S. Environmental Protection Agency, Office of Underground Storage Tanks, "Petroleum Releases at Underground Storage Tank Facilities in Florida," draft, March 2005.

period.[6] In addition, EPA obtained information about state regulatory programs and the effective dates for state requirements that are similar to the requirements of the proposed rule.

Using the available data, EPA examined several different statistical approaches, focusing on regression analysis, to compile and examine a set of state-level data that included the number of UST systems in each state in a given year, the number of releases from UST systems in each year, the number of UST inspections conducted in each year, and the presence or absence of regulations designed to prevent releases.

Before conducting regression analysis on the data set of state USTs and releases, EPA first adjusted the data to account for a number of data quality concerns. A key data concern was the relationship between states with low-frequency inspections and states reporting small numbers of confirmed releases. To ensure that the reported UST releases accurately reflected most or all releases taking place, EPA developed an index that scored each state based on the frequency of inspections. States that reported inspection rates less frequent than every five years, and/or inconsistent inspection frequencies over time, were removed from the sample, based on the assumption that release data from those states may be less reliable due to less frequent third party verification (i.e., state inspection) of system operations. In other words, we assume that owners/operators may be less inclined to report releases or properly maintain their equipment if they are in a state where inspections occur infrequently or inconsistently.

In conducting the analysis, however, EPA identified several fundamental problems with available data that limit the value of a regression analysis approach. These include significant data availability and reliability issues related to the limited number of observations and programmatic changes among states that prevent the isolation of regulation-related impacts. Specifically:

- Consistent, accurate release data are not available. It is likely that measurement error exists in the recording of confirmed releases across states (the dependent variable) and that it is related in some systematic way to the regulatory structure of the state or other explanatory variables (as opposed to random reporting error) in the analysis. In addition, state inspections vary in timing and focus across states; this, in turn, affects the consistency of third-party verified compliance and release information. While EPA attempted to account for this by selecting only states with a high frequency of inspections for inclusion in the analysis, the interaction between inspection frequency and degree and effectiveness of regulation creates sample selection problems (i.e., states with higher release rates due to limited regulation may also be states that do not conduct frequent inspections and therefore have less reliable data).[7] Therefore, normal regression

[6] Data can be accessed at http://www.epa.gov/oust/cat/camarchv.htm.

[7] As noted above, the only reliable approach to identify the relationship between inspection frequency, compliance, and number of releases would require a large-scale data collection effort. In absence of this, we use inspection frequency as an indicator of reliable data.

properties do not hold, and results may be biased in ways that do not allow for a reliable interpretation.[8]

- Many regulations consistent with the proposed rule are currently in place in only a small number of states. EPA addressed limited variation in the presence of regulations by dropping several regulatory variables from the analysis, but the resulting lack of variation and the small number of observations make it likely that regulatory indicators will proxy for other relevant characteristics of that state.
- Study design is limited by available data. Ideally, an analysis of the effectiveness of UST leak prevention regulations would employ observations from a large number of states over a time period that includes years before and after regulations were in place. Such "panel" data would allow for identification of impacts temporally and spatially. Panel data would also allow for fixed-effects estimation, which controls for any unobserved characteristics of states that might affect release rates (such as soil pH or climate), independent of any effect of regulation. Available data superficially appear to be panel data, since they provide information on the number or rate of releases from different states in multiple time periods, along with information on the presence or absence of UST regulations by state. However, for many regulations it is unclear both when the regulation was first promulgated and when the effects of the regulation would be expected to be fully realized (e.g., through inspections).

As discussed in more detail in Appendix F, quantitative analysis of annual UST releases by state did not reveal a consistent measure of the potential impact of release prevention regulations. The data limitations noted above prevented the use of the preferred method of fixed effects estimation using panel data. In the absence of fixed-effects estimation, the analysis cannot reliably draw conclusions about the impacts of regulations on releases, independent of any unmeasured characteristics of states that could be affecting the number of releases in each state. In other words, in addition to data quality issues discussed above, the small number of states with specific UST release prevention regulations prevents identification of robust relationships between individual regulations and the number of releases per year.

However, through cross-sectional analysis, EPA was able to estimate that release rates in California and Florida – two states with mature UST regulation regimes – were about 55-65 percent less than one would expect based on release rates at other states during the time period examined. This difference could serve as an upper bound for the potential of leak prevention regulations to reduce the rate of UST releases.[9]

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[8] For example, several regressions found an apparent *positive*, statistically significant relationship between secondary containment requirements and the number of releases per year. However, empirical data from Florida indicate that secondary containment contributes to release reductions of as much as 50 percent.

[9] Exhibit 6 in Appendix F shows the degree to which the actual number of releases in Florida and California in 2009, 2005, and from 2002 to 2006 is less than the number of releases that would be expected based on the release rates observed at other states. In 2005 and 2009, the years in which the dummy variable for California was statistically significant from zero, California had between 56 and 63 percent fewer releases than would be expected based on the regression analysis. In 2002-2006, when the period in which the dummy variable for Florida was statistically significant from zero, Florida had between 60 and 65 percent fewer releases than would be expected. EPA strongly cautions against generalizing these results beyond the states included in the analysis. However, these

4.3 Final Methodology for Assessment of Positive Impacts: Expert Consultation

To estimate the individual effects of each proposed regulatory change, and in light of the absence of applicable engineering models and limited empirical state data, we resorted to a consultation with five experts with experience in regulation of USTs and implementation of state inspection programs. The remainder of this chapter describes in detail the final methodology used to identify reductions in releases associated with the proposed rule, and the calculation of cost savings associated with those avoided releases.

To ensure that the assessment of regulatory effects relied on broad expertise in regulatory implementation, EPA developed a pool of technical experts with national reputations for leadership in implementation of underground storage tank regulatory programs, or with extensive expertise in assessing spill causation at UST sites. From this pool, several experts were interviewed and five experts were identified. Each of the identified experts has over 20 years of experience in the regulation, assessment, and/or remediation of underground storage tanks, including direction of state programs and implementation of regulations similar to some aspects of the proposed regulation.

EPA provided an identical set of written questions separately to each expert and conducted individual follow-up telephone interviews to clarify and verify responses. Appendix G provides a detailed explanation of the process EPA followed in identifying experts, more detailed information about the qualifications of the experts, and an explanation of the factors EPA considered when including and excluding expert feedback. Appendix H provides the questions distributed to experts and their responses.

One of the five experts did not provide input consistent with EPA's analytical methods, and as a result his quantitative estimates were not usable. Specifically, his baseline estimate of releases was not consistent with EPA's, and he was not able to provide information on how to extrapolate to EPA's universe. In addition, his responses included apparent internal inconsistencies that could not be reconciled without collecting more information about baseline releases.[10] We therefore believe the opinions of the remaining four experts provide the best available data on the expected impact of the proposed rule.

Avoided Costs as a Measure of Beneficial Impacts

Avoided remediation costs provide the basis for a substantial portion of the beneficial impacts associated with the proposed rule. Avoided remediation costs represent cost savings that accrue to owners, operators and public entities charged with remediating releases at regulated facilities.[11] While avoided remediation costs are not a direct measure of total willingness to pay

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numbers do suggest an upper bound of potential avoided leaks associated with the operation of the mature, relatively stringent programs in both California and Florida.

[10] The expert also provided clear opinions about the optimal regulatory structure and suggested that his answers were not reliable unless the regulatory language was amended to include specific technical requirements. This created additional uncertainty in the interpretation of his results.

[11] Chapter 5 provides a more detailed discussion on the potential positive effect of the proposed rule on state financial assurance funds.

for environmental improvements, and are therefore not equivalent to social benefits, they represent real economic cost savings due to reduced demand for baseline remediation.[12]

Calculation of Annual Positive Impacts

The analysis presents the positive effects of the proposed rule as a constant, recurring, annual value for analytical convenience. The timing of the positive impacts of the rule is uncertain for several reasons:

- As shown in **Exhibit 1-2** in Chapter 1, the proposed changes do not take effect simultaneously.
- Irrespective of when they take effect, the changes may require varying lengths of time to achieve full effect.
- EPA relies on its reported confirmed releases to calculate the reductions due to the proposed rule. Confirmed releases recorded in a particular evaluation year vary significantly in severity and length of time undetected, which introduces variability in the extent to which costs are avoided each year.
- The proposed rule includes activities such as: frequent inspections and equipment testing to prevent, identify and address releases; near-term shifts in technology; and long-term changes in technology. Each class of changes necessarily focuses on release avoidance and mitigation over different time horizons.

In the absence of detailed data characterizing releases by age and type, EPA assumes that implementation of the proposed regulations will have a uniform annual impact, with beneficial impacts realized on the last day of the year in which costs are incurred (i.e., a one-year delay). For equipment that is phased in over a period of time, we assume that positive impacts accrue at the same rate as installation and adjust those impacts so that they are constant over time.[13]

4.3.1 Avoided Remediation Costs

This section explains how EPA arrives at its estimates of avoided remediation costs.[14] EPA first explains how it calculates avoided remediation costs based on the source of a release. This is followed by a discussion of the methods used to calculate the number of releases avoided and the number of releases for which severity is mitigated. Finally, the two elements are combined to estimate the total avoided remediation cost due to the proposed rule.

[12] Economists commonly define social benefits as the sum of individuals' willingness to pay to obtain a good or service or avoid an unwanted outcome. Avoided remediation costs may not equal willingness to pay.

[13] See Appendix I for detailed explanation of this methodology.

[14] We refer to avoided cleanup costs and avoided remediation costs interchangeably throughout this document.

4.3.2 Calculating Avoided Remediation Costs

This analysis values avoided releases according to their cost of remediation. EPA developed average remediation costs for the four general release size categories reported in the draft 23-state Autopsy Report. The four categories generally conform with classification conventions used by state LUST offices, and the autopsy reports presented leak frequency data for different UST system components for each of the categories. The four categories include:

- Local site extent with soil contamination;
- Local site extent with water contamination;[15]
- Large site extent with soil contamination; and
- Large site extent with water contamination.[16]

EPA obtained remediation costs aligned with each of these size categories from a survey of state LUST offices and calculated average expected remediation costs for each of the release categories outlined in the draft 23-state Autopsy Report (**Exhibit 4-1**).[17] Remediation costs associated with groundwater remediation are generally higher than costs for soil remediation. Administrative, response, and oversight costs were provided by New Hampshire, and remediation costs reflect an average of the costs provided by New Hampshire and Utah.[18,19]

[15] Water contamination refers to both groundwater and surface water contamination, though groundwater contamination is more common than surface water contamination.

[16] While no specific definition exists for a large site, the LUST Autopsy survey instruments used by the states generally define large sites as those with contamination that extends beyond the extent of construction excavation. In addition, EPA classified sites with off-site contamination as large sites.

[17] U.S. Environmental Protection Agency Office of Underground Storage Tanks, "Evaluation of Releases from New and Upgraded Underground Storage Tank Systems," draft, August 2004.

[18] To develop an avoided cleanup cost estimate, EPA collected data from Montana, New Hampshire, New Mexico, South Carolina, Utah, and Virginia, all of which use state financial assurance funds to pay for LUST remediation. Each state UST program office received a questionnaire requesting data on typical cleanup costs broken out by the four general release types; New Hampshire, New Mexico, South Carolina, Utah and Virginia provided responses. New Hampshire provided the most comprehensive set of information., including cleanup costs by category (i.e., administrative, response, remediation, and oversight), while New Mexico and Utah could only provide estimates of remediation costs. Virginia and South Carolina were unable to provide the detail required for this analysis, as neither state was able to break out costs by the extent of release (i.e., large or small).

[19] New Mexico data are excluded from the calculation for two reasons. First, large-extent groundwater cleanup cost estimates from New Mexico are much higher than those for other states ($2.5 million compared with $0.6 million or less for other states) but the state did not provide data on the number or type of sites that resulted in this high estimate of costs. Second, New Mexico has a relatively small number of UST systems (3,958 UST systems as of September 30, 2009). As a result, we believe that New Mexico may be atypical and could skew results to overstate avoided costs. We therefore do not include its results among the average avoided costs of remediation.

Exhibit 4-1 [a]

Remediation Costs By Release Extent

Remediation Cost Category	Site Size And Contamination Type			
	Small extent, soil only	**Large extent, soil only**	**Small extent, Groundwater Contamination**	**Large extent, Groundwater Contamination**
Typical administrative cost (public notification, fines, fees, etc)[b]	$0	$0	$500	$3,700
Typical response cost (e.g., alerting and sending personnel, assessments and planning, immediate actions to stop the release)[b]	$10,000	$10,000	$10,000	$10,000
Typical remediation cost[c]	$14,800	$103,000	$98,500	$409,500
Typical oversight cost (e.g., monitoring)[b]	$500	$1,000	$1,500	$5,000
Total typical cost per LUST category	**$25,300**	**$114,000**	**$110,500**	**$428,200**

Notes:

[a] Costs shown are one-time costs associated with a site remediation and have been rounded to the nearest hundred dollars.

[b] The costs presented for administrative, response, and oversight costs are based on New Hampshire data only.

[c] The remediation costs shown represent the average costs from data provided by New Hampshire and Utah. Although New Mexico also reported costs, we excluded it for two reasons. First, groundwater cleanup cost estimates from New Mexico are much higher than those for other states ($2.5 million compared with $0.6 million or less for other states) but the state did not provide data on the number or type of sites that resulted in this high estimate of costs. Second, New Mexico has a relatively small number of UST systems (3,958 UST systems as of September 30, 2009). As a result, New Mexico's costs may be atypical and could skew results to overstate avoided costs.

Sources:

1. New Hampshire Department of Environmental Services, Underground Storage Tank Program, November 18, 2008.
2. Utah Department of Environmental Quality, Underground Storage Tank Program, November 18, 2008.

EPA then used the average cost data from states to develop weighted average costs associated with remediation of releases from different portions of the UST system, based on release frequency data for each source. **Exhibit 4-2** presents, for each of the release sources identified in the draft 23-state Autopsy Report, the probability of a release by LUST category.[20] Using the cost data from **Exhibit 4-1**, EPA estimates a weighted average avoided cost per release size by multiplying the cost per site by the probability of each release type. These are summed across the categories to obtain the weighted average cost by release source.[21, 22]

[20] Office of Underground Storage Tanks, "Evaluation of Releases from New and Upgraded Underground Storage Tank Systems – Peer Review Draft," U.S. EPA, August 2004. Note that these sources include California and Florida releases, and may therefore be skewed slightly if those more stringent and established programs have smaller releases. We are unable to adjust the data to correct for this, but its impact, if any, would likely be to reduce the average size and cost of releases slightly.

[21] For more information on this approach and the draft 23-state Autopsy report, see "Methodology to Estimate Avoided Costs Associated with a Typical UST Leak," IEc Memorandum to EPA, prepared by Aaron Kamholtz, Neal Etre, and Cynthia Manson, October 27, 2008.

[22] If we calculate a weighted-average cost per release where sources are weighted proportionally by their contribution to total releases, we obtain an overall average cost per release of approximately $143,000 (See memo in Appendix I for details). For reference, ASTSWMO estimates the average cost per site to be roughly $127,000 in 2009. See Association of State and Territorial Solid Waste Management Officials, State Fund Survey Results 2009.

Exhibit 4-2

Probability And Weighted Average Of Avoided Costs Per Release Source And Extent

Release Source (as identified in 23-state Autopsy Report)		Small extent, soil only	Large extent, soil only	Small extent, groundwater contamination	Large extent, groundwater contamination	Total/ Weighted Average
Piping	Probability	40.50%	22.00%	4.50%	33.00%	100.00%
	Cost	$10,200	$24,300	$5,100	$141,300	$181,000
Dispenser	Probability	71.60%	9.70%	5.40%	13.30%	100.00%
	Cost	$18,100	$10,700	$6,100	$57,100	$92,000
Tank	Probability	30.70%	17.70%	17.30%	34.30%	100.00%
	Cost	$7,800	$19,500	$19,700	$147,000	$194,000
STP Area	Probability	50.00%	31.00%	0.00%	19.00%	100.00%
	Cost	$12,600	$34,300	$0	$81,400	$128,200
Delivery Problems	Probability	59.20%	16.80%	1.80%	22.20%	100.00%
	Cost	$14,900	$18,500	$2,100	$95,200	$130,700

Note: Costs shown have been rounded to the nearest hundredth dollar.

Sources:

1. U.S. EPA, *Evaluation of Releases from New and Upgraded Underground Storage Tanks* (Draft). 2004. ("23-state Autopsy Report")
2. New Hampshire Department of Environmental Services, Underground Storage Tank Program, November 18, 2008.
3. Utah Department of Environmental Quality, Underground Storage Tank Program, November 18, 2008.

4.4 Establishing Avoided Releases

To estimate the number of baseline releases that would be either avoided completely or reduced in severity as a result of the proposed rule, experts responded to a common set of questions about potential impacts of the regulatory changes under consideration and participated in follow-on discussions on specific areas of uncertainty.

Each expert reviewed the proposed requirements and estimated how they would affect the following dimensions of releases: [23]

1. Changes in total frequency (number) of annual confirmed releases;

2. Changes in the number of remaining releases that reach groundwater;

3. Changes in the average quantity released among remaining releases; and,

4. Changes in the average duration of release among remaining releases.

Experts had the option of expressing reductions in release size in terms of duration or volume (quantity) of product, depending on how they typically collected and reviewed release data. In addition, experts were given the option of expressing these changes either: 1) as a total

[23] EPA did not provide experts with information about the universe of facilities or costs associated with remediation; experts did, however, have access to information about the number of confirmed releases and their distribution across different parts of the UST system (e.g., tanks, pipes, and STP areas). EPA uses confirmed releases as the baseline estimate of total releases because high quality data on total releases are not available, and release confirmation triggers the remediation costs that would be avoided.

national estimate that accounted for variation in existing regulation and technology among states and facilities, or 2) as a change applied to a specific subset of the tank universe (e.g., 10 percent change among tanks with a certain technology that are not currently regulated).

Experts also estimated the sensitivity of results to changes in the frequency of regulatory requirements (e.g., the impact of inspections occurring at different intervals, consistent with different regulatory options) and noted synergies or dependencies between requirements, such as:

- Dependency between equipment upgrades and walkthrough inspections: Experts consistently noted that simply replacing equipment with newer technologies (e.g., requiring that new systems have secondary containment) is insufficient for preventing all releases. Regular visual inspections are necessary to identify potential problems and ensure timely maintenance when a release has not yet occurred.

- Synergy between equipment maintenance and walkthrough inspections: Experts noted that the combination of operability testing and visual (walkthrough) inspections would result in more avoided releases by identifying equipment problems quickly and ensuring effective maintenance.

- Dependency between operator training and walkthrough inspections: Experts noted that training alone is not adequate to ensure effective site maintenance, and walkthrough inspection requirements are not effective without trained staff. As a result, all experts assumed that impacts related to walkthrough inspections reflected trained staff and did not separately identify release reductions associated with training.

Experts provided separate estimates of impacts for each regulatory requirement. EPA then used these requirement-specific estimates to calculate total avoided costs for the proposed rule.[24] It is important to note, however, that when considering inter-relationships among regulatory requirements, experts differed in how they isolated and/or "allocated" impacts across specific requirements because the allocation of impacts across different regulatory requirements could potentially be interpreted in several ways (e.g., one expert might decide that inspections drove all impacts, while another might decide that testing was the primary factor). EPA

[24] Experts were also asked to provide an estimate of the "total cumulative impact" for the proposed rule in aggregate as well. The analysis then compared the effects of simultaneously applying the requirement specific estimates with their total estimate of the overall effect of the proposed rule. This was performed to verify the experts' logic and identify areas of overlap or synergy among the regulatory requirements. However, subsequent to receiving responses from experts, EPA made slight modifications to the list of regulatory requirements (e.g., experts were asked to consider impacts of an annual overfill prevention equipment test, but EPA is now proposing 3-year tests). While EPA was able to adjust the requirement specific estimate of these slight revisions based on the sensitivity responses from the experts and follow-up questioning, the original "total cumulative impact" estimates provided by the experts are no longer representative of the current proposed rule as a whole. We note, though, that the average of cumulative estimates was generally consistent with (i.e., within 10 percent of) the equivalent requirement-specific impacts.

therefore avoids emphasis on the requirement-specific estimates provided by each expert, and considers their results in total.[25,26]

In general, EPA applies the most conservative estimates presented by the experts and adjusts for the number of affected units where appropriate. In cases where reductions involved a range of values, EPA typically selected the low end of the range. Where experts' comments reflect qualitative assumptions that substantially affect their quantitative estimates, the analysis acknowledges those factors as caveats to estimated rates of release avoidance.

To calculate the number of releases completely avoided as a result of potential regulatory changes, EPA combines the estimated reductions as identified by experts with a release distribution based on data from the draft 23-state Autopsy Report (see Appendix I for more detail). To estimate changes in release severity, the analysis uses the distribution of releases from the same report to quantify the number of groundwater releases avoided due to reduced release volume. **Exhibit 4-3** provides a summary of our findings with respect to avoided releases. Experts' responses suggest that the Preferred Option of the proposed rule will avoid approximately 20 percent to 60 percent of 7,168 annual releases, or roughly 1,400 to 4,300 releases in evaluation year 2009. In addition,as summarized in **Exhibit 4-4**, of the remaining releases, approximately 330 to 1,100 releases would be reduced in severity (i.e., these releases would remain soil contamination only).).[27]

Exhibit 4-3

Avoided Releases

Expert	Preferred Option	Alternative 1	Alternative 2
Expert 1	1,400	2,100	610
Expert 2	1,400	1,500	420
Expert 3	1,800	2,000	1,400
Expert 4	4,300	4,600	3,300
Range	**1,400 – 4,300**	**1,500 – 4,600**	**420 – 3,300**

Note: See Appendices H and I for inputs and methods for calculating these values. Estimates were validated with experts to ensure they accurately capture their opinions. Specifically, Expert 4 verified that he believed the rule would result in avoidance of over half of confirmed releases.

[25] Note that EPA carefully examined and reviewed each requirement-specific estimate from each expert, and verified the results and assumptions with each expert, particularly in cases where results reflect a wide range.

[26] Consistent with the approach adopted for the cost analysis, EPA asked experts to estimate reductions in releases and release severity assuming that owners/operators would comply fully with all new regulations under the proposed rule. To the extent that non-compliance occurs, both costs and cost savings estimated in this RIA may be overstated. It is also possible that some expert opinions on specific rule impacts may not completely capture full compliance (and may therefore understate the impacts of the proposed rule), because the experience of most experts is related to implementing state regulatory programs and one issue encountered has been non-compliance. However, experts asserted that their estimates approximate full compliance, and we do not therefore attempt to adjust for non-compliance in either cost or cost-savings calculations.

[27] EPA assumes that these groundwater releases will instead become soil releases. Hypothetically, if releases are proportionally split as 50 percent groundwater and 50 percent soil before the rule takes effect, they will be split 38 percent groundwater and 62 percent soil after the rule.

Exhibit 4-4

Avoided Groundwater Contamination Incidents

Expert	Preferred Option	Alternative 1	Alternative 2
Expert 1	1,100	1,200	380
Expert 2	470	470	210
Expert 3	330	320	260
Expert 4	560	510	530
Range	**330 – 1,100**	**320 – 1,200**	**210 - 530**

Note: See Appendices H and I for inputs and methods for calculating these values. Estimates were validated with experts to ensure they accurately capture their opinions. Specifically, Expert 1 verified that he believed the rule would result in a significant number of avoided groundwater releases.

4.4.1 Avoided Releases Using an Alternative Baseline

EPA's primary analysis assumes that the universe of confirmed releases from UST systems remains constant over the time frame of the analysis. However, both the universe of UST systems and the release rate (defined as the number of confirmed releases divided by the number of UST systems in a given year) have declined over the last two decades.[28] This is consistent with the regulatory context of the past 20 years, in which two key factors have been driving the number of releases. First, the universe of UST systems has been declining as older, smaller tanks have been replaced by newer, larger systems. Second, many of the confirmed releases reported in the 1990s and early 2000s were "legacy" releases associated with older systems that did not meet the technical standards under 40 CFR Part 280 (e.g., tanks that were installed prior to the promulgation of the UST regulation at 40 CFR Part 280). Many of these legacy releases are discovered when tanks are removed during property transactions and other development projects.

As the number of legacy releases has declined, the declining trend in total releases has "flattened" – trend data suggest that release rates have been approximately one confirmed release per hundred tanks in recent years. In addition, it is possible that confirmed releases may *increase* in future years, as UST systems continue to age, and as new fuel blends with potentially higher corrosivity are introduced into the industry. Given this uncertainty, EPA assumes in the primary analysis that release rates remain constant.

However, to address the uncertainty associated with the number of confirmed releases, EPA also assesses avoided costs under the proposed rule using an alternative baseline that projects a continued decline in the release rate consistent with the recent historical trend, and also captures the decline in the number of UST systems as estimated in Chapter 3, Section 3.3.1. This represents a conservative avoided cost scenario because it does not account for the possibility that aging systems or changes in fuel could result in increases in the number of

[28] See Appendix J for charts and data sources that demonstrate these two trends.

confirmed releases reported, or that the number of UST systems could increase (if, for example, an expanding economy or population growth demands more service locations).

To estimate the rate of universe decline, EPA mapped historical data on the number of UST systems from 1991 through 2010 to an exponential one-phase decay function, which appears to most accurately represent the observed behavior of the UST system universe over time.[29] EPA also mapped historical data on the release rate to a similar decay function. [30] These two functions were then used to project future UST universe sizes as well as future release rates. We used the results from these two projections to estimate future number of confirmed releases.[31]

The cumulative universe of releases over 20 years under this alternative baseline is approximately 60 percent of the number of cumulative releases over 20 years in the primary analysis. The alternative baseline contains proportionally fewer releases than UST systems because two separate declining trends, UST systems and release rate, are used to estimate the future decline in releases. This compounds the projected decline in releases.

Exhibits 4-5 and **4-6** provide a summary of our findings with respect to avoided releases and avoided groundwater contamination events, respectively, assuming the alternative baseline releases occur. The alternative baseline results in a reduction of roughly 40 percent of both avoided releases and avoided groundwater contamination relative to the original baseline. Correspondingly, in the alternative baseline scenario, approximately 810 to 2,600 releases are avoided under the Preferred Option, compared to 900 to 2,800 under Alternative 1 and 250 to 2,000 under Alternative 2. Under the alternative baseline, there are approximately 200 to 650 avoided groundwater contamination incidents under the Preferred Option, 190 to 700 under Alternative 1, and 130 to 320 under Alternative 2.

[29] See Section 3.3.1.

[30] To estimate future release rates, we used a single exponential decay function, which assumes that a quantity declines at a rate proportional to its value. This is an appropriate function given the singular and slowing rate of decline observed in the release rate over time. The equation for such an exponential singular decay function is $Y = (Yo - P) * e^{(-k*X)} + P$, where P represents the "plateau," or limit of the function and k represents the function's half-life. See Appendix J for additional details.

[31] We use release rates to project future number of releases (rather than use past trends in the number of confirmed releases) for two reasons: First, as the UST universe and release rate both appear to decline in a way approximating a single-decay exponential function, these projections can be used to estimate future number of releases without the added uncertainty of whether the release trend is truly a single-decay exponential function. In addition, using the release rate projections to estimate future releases yields a more conservative (lower) total number of releases than if we were to use the past trend in the number of releases, which leads to more conservative (lower) avoided remediation cost estimates in the alternative baseline.

Exhibit 4-5

Avoided Releases, Alternative Baseline

Expert	Preferred Option	Alternative 1	Alternative 2
Expert 1	810	1,200	370
Expert 2	860	900	250
Expert 3	1,100	1,200	810
Expert 4	2,600	2,800	2,000
Range	**810 – 2,600**	**900 – 2,800**	**250 – 2,000**

Note: See Appendices H and I for inputs and methods for calculating these values. Estimates were validated with experts to ensure they accurately capture their opinions. Specifically, Expert 4 verified that he believed the rule would result in avoidance of over half of confirmed releases.

Exhibit 4-6

Avoided Groundwater Contamination Incidents, Alternative Baseline

Expert	Preferred Option	Alternative 1	Alternative 2
Expert 1	650	700	230
Expert 2	280	280	130
Expert 3	200	190	150
Expert 4	330	310	320
Range	**200 – 650**	**190 – 700**	**130 - 320**

Note: See Appendices H and I for inputs and methods for calculating these values. Estimates were validated with experts to ensure they accurately capture their opinions. Specifically, Expert 1 verified that he believed the rule would result in a significant number of avoided groundwater releases.

4.5 Benefits from Avoided Releases and Reduced Release Severity

Two sources of avoided costs constitute the majority of quantifiable positive impacts from the proposed rule. First, some costs related to release remediation costs do not occur because a number of releases are altogether avoided. Second, some remaining releases are reduced in severity because of the proposed requirements (e.g., through earlier detection through via walkthrough inspections and improved operability of release detection equipment). To capture this dimension of avoided costs, the analysis relies on incremental avoided groundwater remediation costs—the cost to remediate a groundwater release less the cost to remediate a soil release—as groundwater releases are generally more costly to remediate than soil releases.

In addition to avoiding remediation costs, release prevention and mitigation results in a variety of other beneficial impacts, including:

- Avoided vapor intrusion damages;
- Avoided product loss;
- Human health benefits;

- Ecological benefits; and
- Protection of groundwater quality.

This section monetizes, quantifies, or otherwise describes these impacts.

4.5.1 Avoided Release Remediation

To determine the benefits of avoided releases, the analysis relies on the draft 23-state Autopsy Report's distribution of releases by source (i.e., the part of the UST system that produces the release), and applies the reduction associated with each regulation to the appropriate source to reduce the number of releases avoided by source.[32,33] Each avoided release is valued according to the weighted average of remediation costs shown in **Exhibit 4-2**.[34]

Exhibit 4-7 presents the total avoided remediation costs under each regulatory option. We estimate that discounted benefits from avoided remediation costs range between approximately $170 million and $570 under the Preferred Option, while avoided costs amount to between $190 million and $610 million under Alternative 1 and between $54 million and $440 million under Alternative 2.

Exhibit 4-7

Discounted Avoided Release Remediation Costs

Expert	Preferred Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Expert 1	$170	$250	$75
Expert 2	$180	$190	$54
Expert 3	$230	$250	$170
Expert 4	$570	$610	$440
Range	**$170 - $570**	**$190 - $610**	**$54 - $440**

Note: Cost estimates were derived using a seven percent discount rate.

4.5.2 Reduction in Release Severity

To assess the impact on remediation costs associated with reduced release severity, the analysis focuses on changes in the number of releases that would have involved groundwater in the baseline, but because of the proposed rule, involve only soil. While this metric does not capture all of the release mitigation effects of the proposed requirements, groundwater avoidance

[32] We exclude the 'Other' category of releases from the draft 23-state Autopsy Report because it does not map to the reductions designated by the experts. Because 'Other' accounts for only 1 percent of releases in the study, we distribute those releases proportionally across the remaining release sources.

[33] We use five system sources to identify release types: piping, dispenser, tank, sump turbine pump area, and delivery problems. We then assign each regulation's effect to source types based on the regulation (e.g. spill prevention equipment tests are assumed to affect releases from delivery problems).

[34] This approach assumes that avoided releases are well-represented by the distribution of release severity that is identified in the draft 23-state Autopsy Report.

is likely to be among the most significant effects of the rule. The difference in remediation costs between soil and groundwater releases is substantial: remediation cost for an average groundwater release is approximately $270,000, while an average soil release costs approximately $70,000 to remediate.[35] Remediation costs across release extent and medium contaminated range from $25,250 to $428,200 based on typical site remediation costs from New Hampshire and Utah.[36]

To estimate the number of releases that are reduced in severity, we use experts' estimates of reductions in groundwater involvement and distribute them across release source, medium contaminated, and release extent.[37] We distribute remaining releases according to the draft 23-state Autopsy Report results and calculate additional benefits from remediation due to reductions in groundwater contamination following the regulation. We calculate avoided costs from reduced release severity by subtracting the cost to remediate all remaining releases after the proposed rule is in effect from the cost to remediate all remaining releases in the baseline. In both cases, we remove from consideration the same number of fully-avoided releases and consider only the avoided costs from shifting releases from groundwater to soil.

A key limitation of this approach may lead to a conservative estimate of the effects of the proposed rule. The analysis assumes that the distribution of releases across size (i.e., extent) does not change as a consequence of changes in groundwater contamination. In reality, changes in the likelihood of groundwater contamination are probably (at least in part) a consequence of reductions in release volume and duration. The same reductions in release volume that lower the incidence of groundwater contamination would likely also reduce the number of large extent releases of all types and decrease the average size of smaller releases. That is, new requirements should both reduce the number of groundwater contamination events and large extent events of all types. Our model captures only changes in the rates of groundwater contamination, and does not consider cost savings associated with smaller soil-only sites. We therefore likely understate avoided remediation costs.[38]

Exhibit 4-8 displays EPA's findings regarding discounted avoided costs due to the mitigation of groundwater incidents. The analysis calculates avoided remediation costs by taking the difference between estimated remediation costs before and after the proposed changes are implemented. This difference accounts for both the reduction in groundwater release incidents as

[35] These costs reflect a simple average of the costs to remediate a large extent and local extent release of each medium.

[36] Release extent is classified in the draft 23-state Autopsy Report as either local or large. Releases that do not extend beyond the area excavated during remediation are considered local, while releases that extend beyond property lines are considered large. Extent does not explicitly involve a measure of release volume.

[37] See Appendix I for details on the calculation of avoided costs.

[38] A change in the distribution of releases could also potentially cause the "average size" and cost of soil-only releases to *increase* (because larger groundwater releases are eliminated but become "large" local soil-only releases). While this could result in higher average costs for local releases, (i.e., the cost savings for avoiding a groundwater release might be less than the difference between "average" groundwater and soil releases), the analysis also does not consider the cost savings associated with reducing the size of groundwater releases that still reach groundwater or the cost savings associated with reducing the size of soil releases.

well as the increase in soil contamination events.[39] EPA estimates that benefits from averted groundwater releases range from approximately $61 million to $270 million across regulatory options. Avoided costs from reduced groundwater contamination are additive to avoided costs from avoided releases.

Exhibit 4-8

Discounted Avoided Groundwater Remediation Costs

Expert	Preferred Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Expert 1	$260	$270	$93
Expert 2	$110	$110	$52
Expert 3	$78	$75	$61
Expert 4	$130	$120	$130
Range	**$78 - $260**	**$75 - $270**	**$61 - $130**

Note: Cost estimates were derived using a seven percent discount rate.

4.5.3 Total Avoided Remediation Costs from Avoided Releases and Reduced Release Severity

Exhibit 4-9 displays the sum of avoided remediation costs across both avoided releases and mitigated groundwater incidents for all four experts. Because experts with relatively lower estimates in one of these categories did not necessarily have similarly low estimates in the other, the range of total avoided costs is not the sum of the low and high ranges in **Exhibits 4-7** and **4-8**.

Exhibit 4-9

Total Discounted Avoided Remediation Costs

Expert	Preferred Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Expert 1	$430	$520	$170
Expert 2	$300	$300	$110
Expert 3	$310	$330	$230
Expert 4	$700	$740	$570
Range	**$300 - $700**	**$300 - $740**	**$110 - $570**

Note: Cost estimates were derived using a seven percent discount rate.

4.5.4 Benefits from Avoided Releases and Reduced Release Severity under the Alternative Baseline Scenario

Exhibits 4-10 and **4-11** present avoided remediation costs associated with the avoided releases and avoided groundwater incidents shown in **Exhibits 4-5** and **4-6**. In the alternative baseline scenario, avoided release remediation costs range from $100 million to $340 million

[39] This occurs because the analysis maintains the total number of releases constant: every groundwater release that is avoided still requires remediation as a soil release.

under the Preferred Option, between $110 million and $370 million under Alternative 1, and between $32 million and $260 million under Alternative 2. Averted groundwater remediation costs, meanwhile, range from $47 million to $160 million under the Preferred Option, $45 million to $160 million under Alternative 1, and $32 million to $77 million under Alternative 2. These alternative estimates represent conservative estimates of the potential value of avoided releases, because they do not consider possible factors that may lead to increases in the number of releases reported or the number of UST systems in the future.

Exhibit 4-10

Discounted Avoided Release Remediation Costs, Alternative Baseline

Expert	Preferred Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Expert 1	$100	$150	$45
Expert 2	$110	$110	$32
Expert 3	$140	$150	$100
Expert 4	$340	$370	$260
Range	**$100 - $340**	**$110 - $370**	**$32 - $260**

Note: Cost estimates were derived using a seven percent discount rate.

Exhibit 4-11

Discounted Avoided Groundwater Remediation Costs, Alternative Baseline

Expert	Preferred Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Expert 1	$160	$160	$56
Expert 2	$68	$68	$32
Expert 3	$47	$45	$37
Expert 4	$79	$73	$77
Range	**$47 - $160**	**$45 - $160**	**$32 - $77**

Note: Cost estimates were derived using a seven percent discount rate.

Exhibit 4-12 displays the sum of avoided remediation costs across both avoided releases and mitigated groundwater incidents under the alternative baseline scenario. Because experts with relatively lower estimates in one of these categories did not necessarily have similarly low estimates in the other, the range of avoided costs presented is not the sum of lower and higher bounds in **Exhibits 4-10** and **4-11**. As the cumulative release universe in the alternative baseline scenario is roughly 60 percent of cumulative releases in the original baseline, total avoided costs in the alternative baseline are approximately 40 percent lower than they are in the primary analysis.

Exhibit 4-12

Total Discounted Avoided Remediation Costs, Alternative Baseline

Expert	Preferred Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Expert 1	$260	$310	$100
Expert 2	$180	$180	$64
Expert 3	$190	$200	$140
Expert 4	$420	$440	$340
Range	**$180 - $420**	**$180 - $440**	**$64 - $340**

Note: Cost estimates were derived using a seven percent discount rate.

4.5.5 Avoided Costs by Proposed Requirement

Exhibit 4-13 presents overall avoided costs by proposed requirement and regulatory option. The exhibit shows ranges of the avoided costs for each proposed requirement based on experts' responses to the effects of the individual requirements in the proposed rule. Beneficial impacts are concentrated similarly to costs: the majority of avoided costs are captured by walkthrough inspections, overfill prevention equipment tests, spill prevention equipment tests, interstitial integrity tests, and operability tests.[40] Estimates in **Exhibit 4-13** assume that cost savings associated with each regulatory requirement occur one year after the implementation and reflect discounting.

Under the Preferred Option, total avoided costs are approximately $300 million to $700 million per year. Avoided costs increase to $300 million to $740 million under Alternative 1, largely due to more frequent overfill prevention equipment tests and interstitial integrity tests. Avoided costs under Alternative 2 are $110 million to $570 million per year, where less frequent walkthrough inspections and no requirement for interstitial integrity tests reduce beneficial impacts by approximately 19 percent to 65 percent compared to the Preferred Option.

We note that the model used by EPA to estimate avoided remediation costs is not designed to measure avoided costs from large-scale releases such as those typically associated with FCTs and AHFDSs. We, therefore, do not offer an estimate of avoided costs for

[40] Some proposed requirements, particularly those that target narrow subpopulations of the UST system universe, may generate higher avoided costs than this analysis suggests. Three sources of uncertainty drive these smaller universe results. First, EPA's model is calibrated to estimate avoided costs for broad-based national changes at average facilities; extrapolation of these results to small populations may not reflect specific subpopulations (e.g., UST systems in Indian country). Second, several experts stated that their estimates of impacts for requirements affecting narrow subsets of UST populations are more uncertain than broader estimates. Finally, experts emphasized that equipment replacement, inspection, training, and testing are all essential to ensure release reductions, and they used judgment to emphasize the different roles of these different activities. Therefore, the assignment of specific impacts to each of the proposed requirements is potentially less accurate than the aggregate estimates of avoided impacts.

requirements that apply to these systems. However, we include a qualitative discussion of these acute events later in this chapter.

Exhibit 4-13

Total Discounted Avoided Cost By Proposed Requirement[a, h]

Description [b, c]	Preferred Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Release Prevention			
Walkthrough inspections	$94.0 - $570	$93.0 - $550	$44.0 - $480
Periodic testing of: - Overfill prevention equipment - Spill prevention equipment - Interstitial integrity	$70.0 - $140	$91.0 - $170	$35.0 - $70.0
Testing after repairs to spill and overfill prevention equipment, and interstices	$1.50 - $13.0	$1.50- $12.0	$1.50 - $13.0
Elimination of flow restrictors in vent lines for all new tanks and when overfill devices are replaced	$0.170 - $12.0	$0.150 - $12.0	$0
Subtotal - Release Prevention[d]	**$260 - $660**	**$270 - $670**	**$92.0 - $550**
Release Detection			
Operability tests for release detection methods	$25.0 - $43.0	$25.0 - $43.0	$8.60 - $17.0
Eliminate groundwater and vapor monitoring as release detection methods	Not estimated. See note e.		
Add SIR/CITLD to regulations with performance criteria	$0.140 - $1.80	$0.140 - $1.80	$0.140 - $1.90
Remove deferral for emergency generator tanks	$0.530 - $6.20	$0.530 - $6.20	$0.530 - $6.30
Change release detection leak rate probabilities	$0	$0 - $21.0	$0
Response to interstitial monitoring alarms	$0 - $0.850	$0 - $0.820	$0 - $0.890
Subtotal - Release Detection[d]	**$32.0 - $49.0**	**$32.0 - $70.0**	**$10.0 - $24.0**
Other			
Remove deferral for airport hydrant fuel distribution systems	Not estimated. See note f.		
Remove deferral for UST systems with field-constructed tanks	Not estimated. See note f.		
Require notification of ownership change	$0	$0	$0
Closure of lined tanks that cannot be repaired according to a code of practice	$0.001 - $0.240	$0.001 - $0.240	$0.001 - $0.250
Requirements for determining compatibility	Not estimated. See note g.		
Subtotal – Other[d]	**$0.001 - $0.240**	**$0.001 - $0.240**	**$0.001 - $0.250**
EPAct-related Provisions			
Operator training	$0.015 - $1.20	$0.015 - $1.10	$0.018 - $1.30
Secondary containment	$0.370 - $1.10	$0.360 - $1.10	$0.470 - $1.10
Subtotal - EPAct-related Provisions[d]	**$1.00 - $2.00**	**$1.00 - $1.90**	**$1.10 - $2.10**
Total[d]	**$300 - $700**	**$300 - $740**	**$110 - $570**

[a] For each proposed requirement, this exhibit presents a range of discounted avoided costs. This range represents the lowest avoided cost estimate for the proposed requirement among the four experts and the highest avoided cost estimate for the proposed requirement among the four experts.

[b] For some requirements, such as removing the deferral for emergency generator tanks, avoided costs under Alternative 2 are higher than under the Preferred Option or Alternative 1. This occurs because: 1) these requirements create groundwater contamination reductions; and 2) fewer releases are altogether avoided under Alternative 2. This combination of factors implies that groundwater reductions have a greater effect under Alternative 2, as they affect a larger number of releases. This effect is very small compared to the magnitude of changes in other requirements.

Exhibit 4-13

Total Discounted Avoided Cost By Proposed Requirement[a, h]

Description [b, c]	Preferred Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)

[c] Some proposed requirements, particularly those that target narrow subpopulations of the UST system universe, may generate higher avoided costs than this analysis suggests. Three sources of uncertainty drive these smaller universe results: First, EPA's model is calibrated to estimate avoided costs for broad-based national changes at average facilities; extrapolation of these results to small populations may not reflect specific subpopulations (e.g., UST systems in Indian country). Second, several experts stated that their estimates of impacts for requirements affecting narrow subsets of UST populations are more uncertain than broader estimates. Finally, experts emphasized that equipment replacement, inspection, training, and testing are all essential to ensure release reductions, and they used judgment to emphasize the different roles of these different activities. Therefore, the assignment of specific impacts to each of the proposed requirements is potentially less accurate than the aggregate estimates of avoided impacts.

[d] Subtotals and totals presented in this table do not represent the sums of the ranges across the proposed requirements because experts with relatively lower estimates for one proposed requirement did not necessarily have similarly low estimates for other requirements. Instead, the subtotals and totals shown represent the lowest and highest estimates among the four experts for each subtotal group and for the total across all proposed requirements.

[e] Experts were not asked to estimate avoided costs resulting from the elimination of groundwater and vapor monitoring. EPA decided to include this requirement after consulting with its experts.

[f] Reductions in frequency and release severity (as measured by changes in groundwater contamination) do not adequately capture the positive impacts of preventing releases from very large systems such as AHFDSs and UST systems with FCTs. Releases from these types of systems constitute a small portion of total releases, but may be large in volume and can result in significant groundwater impacts. Especially in the case of AHFDSs, even minor problems can create large releases due to the significant pressure under which contents are stored. The model used by EPA to estimate avoided remediation costs is not designed to measure avoided costs from very large releases such as those typically associated with AHFDSs and FCTs, and we therefore do not offer an estimate of avoided costs for requirements that apply to these systems.

[g] Experts were not asked to estimate avoided costs resulting from requirements for determining compatibility. EPA decided to include this requirement after consulting with its experts.

[h] Cost estimates were derived using a seven percent discount rate.

As noted in **Exhibit 4-1**, EPA excluded the highest state-level remediation cost values from its calculation of average cost of release remediation. While this step contributes toward a more conservative estimate of avoided costs, the possibility remains that the average remediation costs used in **Exhibit 4-13** overestimate the positive impacts of the proposed rule if state data provided are not representative of national average remediation costs. In **Exhibit 4-14**, we therefore estimate the positive effects of the proposed rule using only the lowest remediation costs available.[41] As shown in **Exhibit 4-14,** EPA's estimate of the avoided costs of the proposed rule using the lowest state cost estimates is $190 million to $460 million per year under the Preferred Option. This estimate increases to a range of $190 million to $480 million per year under Alternative 1 and decreases to a range of $66 million to $370 million per year under Alternative 2. While this is not a true "lower bound" estimate, these estimates reflect costs that lead to lower than average costs when compared to figures reported by ASTSWMO.[42]

[41] These were provided by the State of New Hampshire's UST program.

[42] If we calculate a weighted-average cost per release where sources are weighted proportionally by their contribution to total releases using the lowest remediation cost data available (i.e., from New Hampshire), we obtain an overall average cost per release of approximately $96,000 (See memo in Appendix I for details). For reference, ASTSWMO estimates the average cost per site to be roughly $127,000 in 2009. See Association of State and Territorial Solid Waste Management Officials, State Fund Survey Results 2009.

Exhibit 4-14

Sensitivity Analysis: Total Discounted Avoided Cost By Proposed Requirement Based On New Hampshire Remediation Costs[a, h]

Description [b, c]	Preferred Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Release Prevention			
Walkthrough inspections	$55.0 - $370	$54.0 - $360	$25.0 - $310
Periodic testing of: - Overfill prevention equipment - Spill prevention equipment - Interstitial integrity	$46.0 - $96.0	$61.0 - $110	$24.0 - $47.0
Testing after repairs to spill and overfill prevention equipment, and interstices	$1.00 - $8.00	$1.00 - $8.00	$1.00 - $8.20
Elimination of flow restrictors in vent lines for all new tanks and when overfill devices are replaced	$0.120 - $8.10	$0.100 - $8.10	$0
Subtotal - Release Prevention[d]	**$170 - $430**	**$170 - $440**	**$57.0 - $350**
Release Detection			
Operability tests for release detection methods	$15.0 - $27.0	$15.0 - $27.0	$5.00 - $10.0
Eliminate groundwater and vapor monitoring as release detection methods	Not estimated. See note e.		
Add SIR/CITLD to regulations with performance criteria	$0.090 - $1.10	$0.090 - $1.10	$0.090 - $1.20
Remove deferral for emergency generator tanks	$0.340 - $3.80	$0.340 - $3.80	$0.340 - $3.90
Change release detection leak rate probabilities	$0	$0 - $13.0	$0
Response to interstitial monitoring alarms	$0 - $0.520	$0 - $0.500	$0 - $0.540
Subtotal - Release Detection[d]	**$20.0 - $31.0**	**$20.0 - $44.0**	**$6.00 - $15.0**
Other			
Remove deferral for airport hydrant fuel distribution systems	Not estimated. See note f.		
Remove deferral for UST systems with field-constructed tanks	Not estimated. See note f.		
Require notification of ownership change	$0	$0	$0
Closure of lined tanks that cannot be repaired according to a code of practice	$0.001 - $0.150	$0.001 - $0.150	$0.001 - $0.150
Requirements for determining compatibility	Not estimated. See note g.		
Subtotal – Other[d]	**$0.001 - $0.150**	**$0.001 - $0.150**	**$0.001 - $0.150**
EPAct-related Provisions			
Operator training	$0.009 - $0.750	$0.009 - $0.700	$0.011 - $0.810
Secondary containment	$0.240 - $0.760	$0.230 - $0.760	$0.300 - $0.770
Subtotal - EPAct-related Provisions[d]	**$0.670 - $1.30**	**$0.640 - $1.20**	**$0.760 - $1.40**
Total[d]	**$190 - $460**	**$190 - $480**	**$66.0 - $370**

Exhibit 4-14

Sensitivity Analysis: Total Discounted Avoided Cost By Proposed Requirement Based On New Hampshire Remediation Costs[a, h]

Description [b, c]	Preferred Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)

[a] For each proposed requirement, this exhibit presents a range of discounted avoided costs. This range represents the lowest avoided cost estimate for the proposed requirement among the four experts and the highest avoided cost estimate for the proposed requirement among the four experts.

[b] For some requirements, such as removing the deferral for emergency generator tanks, avoided costs under Alternative 2 are higher than under the Preferred Option or Alternative 1. This occurs because: 1) these requirements create groundwater contamination reductions; and 2) fewer releases are altogether avoided under Alternative 2. This combination of factors implies that groundwater reductions have a greater effect under Alternative 2, as they affect a larger number of releases. This effect is very small compared to the magnitude of changes in other requirements.

[c] Some proposed requirements, particularly those that target narrow subpopulations of the UST system universe, may generate higher avoided costs than this analysis suggests. Three sources of uncertainty drive these smaller universe results: First, EPA's model is calibrated to estimate avoided costs for broad-based national changes at average facilities; extrapolation of these results to small populations may not reflect specific subpopulations (e.g., UST systems in Indian country). Second, several experts stated that their estimates of impacts for requirements affecting narrow subsets of UST populations are more uncertain than broader estimates. Finally, experts emphasized that equipment replacement, inspection, training, and testing are all essential to ensure release reductions, and they used judgment to emphasize the different roles of these different activities. Therefore, the assignment of specific impacts to each of the proposed requirements is potentially less accurate than the aggregate estimates of avoided impacts.

[d] Subtotals and totals presented in this table do not represent the sums of the ranges across the proposed requirements because experts with relatively lower estimates for one proposed requirement did not necessarily have similarly low estimates for other requirements. Instead, the subtotals and totals shown represent the lowest and highest estimates among the four experts for each subtotal group and for the total across all proposed requirements.

[e] Experts were not asked to estimate avoided costs resulting from the elimination of groundwater and vapor monitoring. EPA decided to include this requirement after consulting with its experts.

[f] Reductions in frequency and release severity (as measured by changes in groundwater contamination) do not adequately capture the positive impacts of preventing releases from very large systems such as AHFDSs and UST systems with FCTs. Releases from these types of systems constitute a small portion of total releases, but may be large in volume and can result in significant groundwater impacts. Especially in the case of AHFDSs, even minor problems can create large releases due to the significant pressure under which contents are stored. The model used by EPA to estimate avoided remediation costs is not designed to measure avoided costs from very large releases such as those typically associated with AHFDSs and FCTs, and we therefore do not offer an estimate of avoided costs for requirements that apply to these systems.

[g] Experts were not asked to estimate avoided costs resulting from requirements for determining compatibility. EPA decided to include this requirement after consulting with its experts.

[h] Cost estimates were derived using a seven percent discount rate.

For reference, we also estimate avoided costs using ASTSWMO's reported average cleanup cost of $127,216 for 2009. If we value the releases and groundwater incidents avoided under each option using this estimate, we obtain total avoided costs of approximately $250 million to $610 million under the Preferred Option, $250 million to $640 million under Alternative 1, and $87 million to $490 million under Alternative 2. Note that these values fall between our primary estimates and sensitivity analyses.[43]

[43] Under the alternative baseline, total avoided costs based on New Hampshire remediation costs range from $110 million to $280 million in the Preferred Option. This represents an extreme lower bound analysis of avoided remediation costs.

4.6 Avoided Vapor Intrusion Damages

Vapor intrusion generally occurs when petroleum or highly-dissolved concentrations come into direct contact with building sumps and foundations, elevator shafts, and preferential pathways (e.g. improperly sealed utility lines). Intrusion can also occur when these substances come close to building foundations.[44] The cost to remediate vapor intrusion is typically incremental to the cost to remediate a LUST site. Based on information provided by four states, EPA estimates that from one to 10 percent of all releases cause vapor intrusion issues. Each of these instances requires additional remedial actions valued between $27,000 and $52,000 beyond ordinary release remediation costs.[45] As reported in **Exhibit 4-15**, given 1,680 to 5,370 avoided releases and mitigated groundwater incidents, we estimate between 17 and 540 avoided vapor intrusion incidents under the Preferred Option. This reduction would avoid between $0.4 million and $26 million per year in avoided remediation costs related to vapor intrusion. While the lower end of this range does not vary significantly among the options, EPA estimates savings of up to $28 million under Alternative 1 and $19 million under Alternative 2.

Exhibit 4-15

Avoided Vapor Intrusion Costs

Scenario	Preferred Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Total avoided releases and avoided groundwater incidents	1,680 - 5,370	1,820 - 5,780	630 - 3,860
Low *1% of releases involve vapor intrusion* *$27,000 per release to remediate*	$0.4 - $1.4	$0.5 - $1.5	$0.2 - $1.0
High *10% of releases involve vapor intrusion* *$52,000 per release to remediate*	$8.2 - $26.0	$8.9 - $28.0	$3.1 - $19.0

Under the alternative baseline, avoided vapor intrusion costs fall due to the smaller universe of releases. In the Preferred Option, avoided costs are $0.3 million to $16.0 million. Under Alternative 1, avoided costs range from $0.3 million to $17 million; under Alternative 2, they range between $0.1 million and $11.0 million. See **Exhibit 4-20** for a full accounting of avoided costs in the alternative baseline.

4.7 Product Loss

Releases into the environment cause operators to lose otherwise marketable fuel products. **Exhibit 4-16** presents costs avoided due to product loss. The analysis calculates the product loss

[44] Davis, Robin V. February 9, 2010. "Petroleum Hydrocarbon Vapor Intrusion Investigations: Current General Practice," Leaking Underground Storage Tanks, Utah Dept. of Environmental Quality, http://www.epa.gov/oust/pviwebinar_approach.pdf.

[45] New Hampshire, Utah, South Carolina, Virginia, and New Mexico were contacted for LUST remediation costs, but only New Hampshire was able to provide a cost for cleanup actions related to vapor intrusion. Other state programs contributed data to the frequency of incidents, but not to costs.

associated with avoided releases by multiplying the average volume associated with each release source by the number of releases of that type before and after the proposed rule is in effect. Based on the estimates of avoided releases presented by the experts, the draft 23-state Autopsy Report's distribution of releases, and average release volumes reported in the Florida study, EPA estimates that approximately 0.64 million gallons to 2.3 million gallons per year of diesel and gasoline releases are avoided as a consequence of the Preferred Option. At an average price of $3.27 per gallon, owners and operators avoid losing approximately $2.0 million to $7.2 million in product due to releases.[46] These values increase to a range of 0.84 million gallons to 2.5 million gallons and $2.6 million to $7.6 million under Alternative 1 and decrease to a range of 0.13 million gallons to 1.7 million gallons and $0.4 million to $5.3 million under Alternative 2. Limited data on release size do not support an analysis of avoided product loss associated with releases that are reduced in severity.

Exhibit 4-16

Value of Avoided Product Loss

Expert	Preferred Option		Alternative 1		Alternative 2	
	Thousand gallons	**$ millions**	**Thousand gallons**	**$ millions**	**Thousand gallons**	**$ millions**
Expert 1	640	$2.0	950	$2.9	200	$0.6
Expert 2	800	$2.5	840	$2.6	130	$0.4
Expert 3	810	$2.5	860	$2.6	570	$1.7
Expert 4	2,300	$7.2	2,500	$7.6	1,700	$5.3
Range	**640 – 2,300**	**$2.0 - $7.2**	**840 - 2,500**	**$2.6 - $7.6**	**130 – 1,700**	**$0.4 - $5.3**

Releases are valued using an average price of motor fuel for 2008. Prices per gallon for all grades of retail motor gasoline and No. 2 diesel fuel (all concentrations of sulfur) were $3.32 and $3.15, respectively, as reported by the Bureau of Transportation in Table 3-8: Sales Price of Transportation Fuel to End-Users in National Transportation Statistics 2010 (at http://www.bts.gov/publications/national_transportation_statistics/pdf/entire.pdf). We weight these prices according to prime supplier sales volumes in 2009 published by the Energy Information Administration, which summed to 362,798.5 thousands of gallons per day for gasoline and 132,489.3 thousands of gallons per day for all grades of diesel fuel (at http://www.eia.gov/dnav/pet/pet_cons_prim_dcu_nus_a.htm).

Under the alternative baseline, avoided costs due to product loss are lower than in the original baseline as there are relatively fewer releases. In the Preferred Option, avoided costs due to product loss are $1.2 million to $4.3 million. Under Alternative 1, avoided costs range from $1.6 million to $4.6 million; under Alternative 2, they range between $0.2 million and $3.2 million. See **Exhibit 4-20** for a full accounting of avoided costs in the alternative baseline scenario.

[46] Releases are valued using an average price of motor fuel for 2008. Prices per gallon for all grades of retail motor gasoline and No. 2 diesel fuel (all concentrations of sulfur) were $3.32 and $3.15, respectively, as reported by the Bureau of Transportation in Table 3-8: Sales Price of Transportation Fuel to End-Users in National Transportation Statistics 2010 (at http://www.bts.gov/publications/national_transportation_statistics/pdf/entire.pdf). We weight these prices according to prime supplier sales volumes in 2009 published by the Energy Information Administration, which summed to 362,798.5 thousands of gallons per day for gasoline and 132,489.3 thousands of gallons per day for all grades of diesel fuel (at http://www.eia.gov/dnav/pet/pet_cons_prim_dcu_nus_a.htm)

4.8 Human Health Benefits

Exposure to petroleum through ingestion, dermal contact, and inhalation can cause a range of health effects, including cancer and non-cancer impacts associated with benzene, and non-cancer impacts (e.g., neurological impacts) associated with other petroleum constituents such as toluene.[47] Reductions in the number and severity of releases will reduce these exposures and associated morbidity and mortality impacts. This benefits assessment examines the impacts of the regulations under consideration on population cancer risks associated with benzene exposures through groundwater. Other health impacts, including benzene-related risks through inhalation of vapor and nonbenzene health effects, are not able to be reliably quantified with available data, but represent additional potential benefits of the rule.

4.8.1 Avoided Benzene Cancer Risk

To address human health benefits associated with avoided exposure to benzene through groundwater, EPA performed a screening analysis using data on:

- Expected number of cancer cases per underground storage tank release;
- Estimated number of releases prevented through implementation of the regulatory revisions; and,
- Estimated WTP to avoid a fatal cancer, expressed as the value of a statistical life (VSL).

The EPA risk assessment provides population risk estimates on a per-release basis, expressed as the expected number of cancer cases per release. That analysis estimated population risk for releases of varying volumes and plume ages.[48] To estimate the benefits of avoided cancer cases, EPA uses the estimated number of releases avoided and releases reduced in severity and applies the 2009 EPA estimated value of a statistical life (VSL) of $8.9 million as the value associated with avoiding one terminal cancer.[49,50]

Exhibit 4-17 presents EPA's findings for four avoided release scenarios. The analysis shows that, even under unlikely assumptions of 100-year plumes and 5,000 gallon releases, total upper bound human health benefits due to avoided cancer cases are limited to approximately

[47] For example, see "Benzene toxicity and risk assessment, 1972-1992: implications for future regulation," D J Paustenbach, R D Bass, and P Price, Environ Health Perspect. 1993 December; 101(Suppl 6):177–200.

[48] "Risk Analysis to Support Potential Revisions to Underground Storage Tank (UST) Regulations," prepared by RTI International, December 22, 2010.

[49] "Summary of the updated Regulatory Impact Analysis (RIA) for the Reconsideration of the 2008 Ozone National Ambient Air Quality Standard (NAAQS)," U.S. EPA, http://www.epa.gov/ttn/ecas/regdata/RIAs/s1-supplemental_analysis_full.pdf

[50] This screening analysis also does not address the issue of latency, or discounting the VSL to reflect health effects that occur many years after exposure.

$850,000 per year under the Preferred Option. This value changes little when considering Alternatives 1 or 2. EPA's central estimate of the benefits associated with avoided cancer incidence uses avoided costs from scenarios in which plume ages are one and five years and average release volume is 50 gallons, consistent with release data from available studies.[51] These assumptions suggest human health benefits of approximately $1,400 to $4,500 per year associated with avoided benzene-related cancer risk.

These modest findings reflect a number of assumptions that may provide an incomplete picture of the risks associated with leaks from underground storage tanks. First, they reflect the frequency of confirmed releases, and (except in the 100-year spill time frame) the assumption that the existing UST cleanup program eliminates all exposure immediately upon release discovery. In addition, the risk assessment did not consider larger-scale releases over 5,000 gallons in any scenario, though a number of these are reported annually. Finally, exposure scenarios generally reflect behavioral assumptions that exposed individuals will limit their own exposure in certain cases (e.g., when petroleum contamination exceeds a "taste/odor threshold" and water is no longer palatable). Any or all of these assumptions may not hold in all cases, and other risks and health benefits are not reflected at all in this screening level risk assessment (see below). However, it is also not unreasonable to assume that health impacts under this proposed rule would be limited, given the baseline existence of technical and cleanup requirements designed to minimize human exposure.

[51] U.S. Environmental Protection Agency, Office of Underground Storage Tanks, "Petroleum Releases at Underground Storage Tank Facilities in Florida," draft, March 2005. Note that this estimate differs from the calculated avoided product loss based on average release volumes in the Florida autopsy data. We use a more conservative estimate of release volumes (consistent with median release volumes from Florida's autopsy study) to reflect uncertainty regarding exposure and to offset the risk analysis assumption that releases occur over a very short time frame.

Exhibit 4-17

Discounted Benefits From Benzene Cancer Avoidance[d]

Release time to discovery and volume [a,b,c]	Preferred Option ($ thousands)	Alternative 1 ($ thousands)	Alternative 2 ($ thousands)
Total releases	1,680 - 5,370	1,820 - 5,780	630 - 3,860
1 year until discovery, 10 gals. release *Prob(Cancer Case) = 0.000000012*	$0.15 - $0.49	$0.17 - $0.53	$0.06 - $0.35
1 year until discovery, 50 gals. released *Prob(Cancer Case) = 0.000000032*	$0.43 - $1.4	$0.47 - $1.5	$0.16 - $0.99
5 years until discovery, 50 gals. released *Prob(Cancer Case) = 0.00000017*	$2.4 - $7.6	$2.6 - $8.2	$0.89 - $5.5
100 year until discovery, 5,000 gals. release *Prob(Cancer Case) = 0.000019*	$270 - $850	$290 - $910	$100 - $610
Primary estimate (average of 50 gal. release over 1 and 5 years)	$1.4 - $4.5	$1.5 - $4.8	$0.53 - $3.2

[a] The pathway assessed to evaluate avoided cancer risk is benzene exposure through contaminated groundwater.
[b] Calculations based on a value of statistical life of $8.9 million, as presented in U.S. EPA, "Summary of the updated Regulatory Impact Analysis (RIA) for the Reconsideration of the 2008 Ozone National Ambient Air Quality Standard (NAAQS)."
[c] Probability of cancer cases per release based on RTI International, "Risk Analysis to Support Potential Revisions to Underground Storage Tank (UST) Regulations," December 22, 2010.
[d] Estimates were derived using a seven percent discount rate.

Under the alternative baseline, the total upper bound human health benefits due to avoided cancer cases are limited to approximately $510,000 per year under the Preferred Option. The central estimate of the benefits associated with avoided cancer incidence suggests human health benefits of approximately $840 to $2,700 per year associated with avoided benzene-related cancer risk. See **Exhibit 4-20** for a full accounting of avoided costs in the alternative baseline scenario.

4.8.2 Other Human Health Benefits

The foregoing benefits from avoided benzene cancer avoidance represent only one portion of the health risk associated with releases from leaking UST systems. The risk assessment examined only benzene risks through groundwater ingestion and shower inhalation and focused on average population risks. Such risks are limited in part because the analysis concluded that many sites do not have residents using groundwater near the area affected by a plume. Nevertheless, the risk assessment concluded that some larger releases may have significant human health risks associated with them.

Inhalation risks associated with direct exposure to vapor and other petroleum-related chemicals were not evaluated.[52] While EPA does not expect most instances of these risks to be

[52] Neither cancer nor non-cancer risks of these types were evaluated.

large, significant risks remain for a subset of releases. To the extent that the proposed rule would prevent or mitigate the most significant releases, this analysis may understate the avoided human health impacts associated with the rule.

More broadly, the complex nature of petroleum mixtures and the limited toxicological data available both for petroleum mixtures and for individual component compounds of petroleum limits EPA's ability to comprehensively document the health effects associated with the most significant releases. However, the toxicological testing that has been conducted on some common components of total petroleum hydrocarbons (TPH) suggests that exposures to TPH through inhalation or ingestion could result in the following effects:

- Neurological effects, such as central nervous system depression, have been associated with acute and chronic exposures to toluene and xylenes; n-hexane exposure has been associated with effects on peripheral neuropathy;
- Hematological effects associated with oral and inhalation exposure to benzene and with oral and inhalation exposure to naphthalene;
- Renal and hepatic effects associated with BTEX compounds and other aromatic hydrocarbon compounds;
- Developmental effects associated with intermediate exposures to ethylbenzene and xylenes; and
- Carcinogenic effects of oral exposures to certain polycyclic aromatic hydrocarbons (PAHs) including benzo(a)pyrene, benz(a)anthracene, and dibenz(a,h)anthracene.[53]

Reduced exposure to TPH as a result of the proposed rule could therefore have nonquantified benefits related to reducing the risks of one or more of the above health effects.

4.9 Avoided Acute Exposure Events and Large-Scale Releases

Most health effects associated with leaking underground storage tanks reflect long-term exposures, but some releases from UST systems relate to acute events such as fire or explosion. These releases can involve acute exposures, large volumes of free product, extensive ecological damage, and injuries and death, depending on the circumstances of the event. Because these events are difficult to predict and infrequent, it is not possible to quantify or monetize the impact associated with avoiding them, but the response, remediation, and medical costs associated with a single acute incident could be significant. The proposed regulations are designed to ensure effective maintenance of UST systems, and one benefit will be to reduce the chances of an acute event that could result in a large-scale release and its associated damages (e.g., a well-maintained UST system is less likely to be in a condition where it may explode).

[53] United States Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, "Toxicological Profile for Polycyclic Aromatic Hydrocarbons," August 1995.

Acute events are especially important in the case of UST systems such as airport hydrant fuel distribution systems and UST systems with field-constructed tanks, which can hold large volumes of fuel. Releases from these systems can be large in volume and can result in significant groundwater and other environmental and health impacts. For instance, an estimated 300,000 to 500,000 gallons of fuel was released from a 2.1 million gallon underground field-constructed tank at a fuel depot in Portsmouth, VA that was in operation from the 1950s to mid-1980s. Free product was found within 20 feet of a nearby creek in 1987. To date, approximately 143,000 gallons of product have been recovered.[54]

Another example of the potential magnitude of the releases from these systems is Pease Air Force Base, where jet fuel was delivered to the runway apron via an underground fueling system.[55] Historical leakage from the system contaminated soil and groundwater, forming groundwater plumes at many sites along the system.[56] A site release study identified 60 to 70 release points with varying degrees of severity along the refueling system line with free product found under the apron at closure.[57] While there are no historical records available indicating the amount of leaked fuel or leak origins, the presence of residual soil and groundwater contamination poses a significant threat to human health and the environment.

While the analytical procedure used by EPA to estimate benefits was unable to capture the positive impacts of preventing releases from these types of systems, we note that preventing or mitigating these releases may generate substantial reductions in remediation costs.

4.10 Ecological Benefits

A document prepared for EPA outlines the types of ecological damages that can result from land-based pollution releases:[58]

> Measurable damage to ecological resources from land releases generally occurs when groundwater or overland flow of water carry contaminants to a nearby surface water body. Flood events and other acute incidents can cause releases of waste that have an immediate and significant effect on

[54] Phone conversation and email from Lynne Smith, Geologist, VA DEQ and Russ Ellison, VA DEQ.

[55] New Hampshire Department of Environmental Services, Air Resources Division. 2007. Permit Application Review Summary, Former Pease AFB Remediation Project, FY04-0453. 10 March 2010 < http://www2.des.state.nh.us/OneStopPub/Air/3301590780FY04-0453TypeSummary.pdf>.

[56] New Hampshire Department of Environmental Services, Air Resources Division. 2009. Permit Application Review Summary, Former Pease AFB Remediation Project, 09-0113. 10 March 2010, see: http://www2.des.state.nh.us/OneStopPub/Air/330159094909-0113TypeSummary.pdf.

[57] Hilton, Scott. Site Summaries Pease Air Force Base Newington/Portsmouth. 2008. NH Department of Environmental Services. 10 March 2010 see: http://des.nh.gov/organization/divisions/waste/hwrb/fss/superfund/summaries/pease.htm.

[58] "Approaches to Assessing the Benefits, Costs, and Impacts of the RCRA Subtitle C Program," prepared by Industrial Economics, Inc. for U.S. EPA Office of Solid Waste, October 2000, p. 3-17, accessed at http://www.epa.gov/oswer/docs/rcradocs/rcra.pdf.

ecological resources (e.g., a surface impoundment dike fails and releases contaminants into a river, killing fish and other biota). More common are gradual increases in contaminant levels due to long-term releases to groundwater. These may have a broad array of impacts on both resources used by humans (such as fish populations) and on "non-use value" such as the value of preserving habitat and species diversity. In addition, biota can be affected by uptake of contaminants from soil, particularly in wetlands or areas where the water table is high.

Because of their locations, releases from underground storage tanks would likely be classified as land releases. Thus, any releases avoided due to the proposed rule may result in ecological benefits. A complete assessment of ecological benefits, however, requires significant location-specific data, and it is often difficult to identify sufficient data to support valuation of both use and non-use values of preserving habitat and species diversity.

The ecological benefits that accrue from the proposed rule are likely to occur as a consequence of averted groundwater contamination. The resource economics literature contains numerous examples of studies that value these services, as demonstrated by the public's WTP for groundwater protection programs (e.g., see Poe et al. 2001).[59] However, these values are largely context-specific in terms of location, scale, and the specific threat to groundwater considered and do not provide broadly-applicable information on the value of groundwater.

Some attempts have been made to develop standardized values for groundwater, often for purposes of Natural Resource Damage Assessment (NRDA).[60] For instance, the State of New Jersey currently employs a replacement cost approach to determine interim economic losses associated with injuries to groundwater.[61] Even so, replacement cost methods do not constitute a proper WTP valuation. The replacement cost of natural resources and their services capture WTP only when they meet three criteria: 1) replacement provides equivalent quality and quantity of services; 2) the public is actually willing to pay for the replacement; and 3) replacement is the most cost-effective means of restoring the lost services.[62] Even if these conditions are true, this approach may overestimate groundwater values in urban areas, as land is typically more expensive, and underestimate groundwater values in areas where land is less expensive.

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[59] Poe, Gregory L., K.J. Boyle, and J.C. Bergstrom. "A Preliminary Meta Analysis of Contingent Values for Ground Water Revisited." Chapter 8 in The Economic Value of Water Quality. Bergstrom, J.C., K.J. Boyle and G.L. Poe (eds.), Cheltenham, United Kingdom: Edward Elgar Publishing Limited. 2001.

[60] Natural Resource Damage Assessment (NRDA) is the process of estimating the monetary cost of restoring natural resources injured by discharges of oil or releases of hazardous substances. Monetary costs, or damages, are estimated by identifying the services provided by the injured natural resources, determining the baseline level of the services provided by the resources, and quantifying the reduction in services that result from the natural resource injury. U.S. EPA. Natural Resource Damage Assessment. www.epa.gov/ superfund/ programs/nrd/nrda2.htm.

[61] New Jersey's approach follows three steps. First, the approach determines the total present value of potential yield from the contaminated area over the relevant period of impairment, typically based on a site-specific or regional recharge rate for the area in question. Second, again considering regional recharge rates, it estimates the amount of land required to protect an equivalent present value total volume of groundwater. Finally, the approach identifies and appraises candidate parcels. The cost of acquiring such a parcel for purposes of protecting a volume of groundwater equivalent to what was lost represents the measure of damages.

[62] Freeman, A.M. III.. *The Measurement of Environmental and Resource Values: Theory and Methods.* Resources for the Future: Washington, DC. 2003. p. 460.

Because an assessment of the value of groundwater protected by the proposed rule is affected by spatial heterogeneity, it requires information about the public's WTP for protection in all states and territories. These data are not available, and EPA is therefore unable to place a value on the groundwater protected. Instead, we provide an estimate below of the total quantity of groundwater that may be protected by the rule. We note, though, that a portion of the value of restoring groundwater is captured as part of the cost to remediate each release discussed earlier in this chapter. However, while the cost of restoring groundwater to a higher quality after contamination is captured as part of the cost to remediate each release, it cannot be assumed that remediation captures WTP. In many cases, performing remediation to "safe" levels does not fully eliminate contamination, and therefore does not restore the resource to its original value. Therefore, while a significant portion of the value of the quantity of groundwater protected may be captured by the avoided remediation costs, it may not reflect the full WTP of groundwater protection.

Exhibit 4-18 summarizes a screening assessment of the volume of groundwater contamination potentially avoided because of reductions in releases and groundwater contamination incidents. The analysis relies on the EPA risk assessment, which describes typical volumes of groundwater affected by releases of different sizes over various discovery time frames.[63] EPA's analysis estimates that 40 billion gallons to 130 billion gallons of groundwater per year are protected under conservative assumptions of 10 gallon release volumes that migrate for only one year before discovery. Under the upper bound conditions of 5,000 gallon release volumes and 100 year lifetimes, up to 5.7 trillion gallons of groundwater per year would be potentially protected by the regulatory changes.[64] We also calculate the impact of 50 gallon releases over one- and five-year time frames. These releases appear most consistent with empirical data in the draft 23-state Autopsy Report. Assuming that 50 gallon releases and one- to five-year time frames represent the average parameters of avoided releases, we estimate that approximately 110 to 350 billion gallons of groundwater would be protected annually from LUST-related releases due to the potential regulatory changes.[65]

[63] "Risk Analysis to Support Potential Revisions to Underground Storage Tank (UST) Regulations," prepared by RTI International, December 22, 2010.

[64] The risk assessment on which this analysis is based did not estimate groundwater contamination volumes outside of a one-mile radius about the point of release. The assessment notes that groundwater may be contaminated outside that radius, but it does not estimate this quantity. Generally, only releases greater than 1,000 gallons are affected by this phenomenon, i.e., groundwater contamination is likely underestimated for the 5,000 gallon, 100-year release scenario.

[65] The release volume data used in the groundwater protection assessment differs from the data used to calculate product loss and may lead to apparent inconsistencies. For instance, under the Preferred Option, prevention of 1.2 million gallons of product loss over 2,200 releases implies an average of over 500 gallons per release; however, in the groundwater protection analysis, EPA relies on estimates of groundwater contaminated based on releases of 50 gallons for the following two reasons: (1) the volumes of product loss based on Florida data are based on actual data, while the risk analysis relies on a simulation; and (2) the simulation assumes that product is released over a relatively short period of time (approximately one month), which likely overstates the effect of groundwater contamination for any given volume. Given these circumstances, EPA selected an average release volume to characterize groundwater contamination that is significantly lower than the volume implied by the analysis of product loss, but which reduces the risk of overstating positive impacts from groundwater protection.

Exhibit 4-18

Volume Of Groundwater Protected

Release time to discovery and volume * (average groundwater volume contaminated)	**Preferred Option (billion gal. per year)**	**Alternative 1 (billion gal. per year)**	**Alternative 2 (billion gal. per year)**
Total releases	1,680 - 5,370	1,820 - 5,780	630 - 3,860
1 year until discovery, 10 gal. release (*24,068,183 gal. GW contaminated)*	40 - 130	44 - 140	15 - 93
1 year until discovery, 50 gal. release (*48,785,436 gal. GW contaminated)*	82 - 260	89 - 280	31 - 190
5 years until discovery, 50 gal. release *(80,192,581 gal. GW contaminated)*	130 - 430	150 - 460	51 - 310
100 year until discovery, 5,000 gal. release (*1,056,971,192 gal. GW contaminated)*	1,800 - 5,700	1,900 - 6,100	670 – 4,100
Primary estimate (average of 50 gal. release over 1 and 5 years)	**110 - 350**	**120 - 370**	**41 - 250**

*Average groundwater volume contaminated per release based on RTI International, "Risk Analysis to Support Potential Revisions to Underground Storage Tank (UST) Regulations," December 22, 2010.

Under the alternative baseline, assuming that 50 gallon releases and one- to five-year time frames represent the average parameters of avoided releases, approximately 65 to 210 billion gallons of groundwater would be protected annually in the Preferred Option. See **Exhibit 4-20** for a full accounting of avoided costs in the alternative baseline.

4.11 Conclusion

Exhibit 4-19 summarizes the monetized avoided costs and benefits due to the proposed rule. In total, EPA estimates approximately $300 million to $740 million in costs will be avoided as a consequence of the Preferred Option. In addition, the proposed rule will generate modest benefits due to avoided cancer risks. Although their value cannot be reliably monetized, roughly 110 billion to 350 billion gallons of groundwater per year will avoid contamination due to new requirements. Finally, the proposed rule will generate ecological benefits and reductions in nonbenzene morbidity and mortality risks that we could not quantify in our analysis.

Exhibit 4-19

Summary Of Positive Impacts[d]

Type of Impact	Preferred Option	Alternative 1	Alternative 2
Monetized Benefits ($ millions, present value 2008$)			
Avoided cancer risks[a]	$0.001 - $0.005	$0.002 - $0.005	$0.001 - $0.003
Monetized Avoided Costs ($ millions, present value 2008$)			
Releases and groundwater incidents	$300 - $700	$300 - $740	$110 - $570
Vapor intrusion	$0.4 - $26	$0.5 - $28	$0.2 - $19
Product loss	$2.0 - $7.2	$2.6 - $7.6	$0.4 - $5.3
Total[b]	$300 - $740	$310 - $770	$110 - $590
Nonmonetized Impacts[c]			
Groundwater protected (billion gallons)	110 - 350	120 - 370	41 - 250
Acute events and large-scale releases (e.g., releases from AHFDSs and FCTs)	Not estimated	Not estimated	Not estimated
Ecological benefits	Not estimated	Not estimated	Not estimated
Nonbenzene human health risks	Not estimated	Not estimated	Not estimated

[a] The pathway assessed to evaluate avoided cancer risk is benzene exposure through contaminated groundwater.
[b] Avoided cancer risks and avoided costs are separate and additive (i.e., these estimates do not overlap). Avoided cancer risks are the benefits associated with reducing cancer cases prior to discovery of the release. Avoided remediation costs from releases and groundwater incidents are the costs related to site remediation. Avoided vapor intrusion costs include additional avoided costs associated with the remediation of vapor intrusion cases; the RIA does not address human health risk associated with vapor intrusion. Avoided product loss costs are also separate and additive.
[c] Due to data and resource constraints, EPA was unable to monetize some of the positive impacts of the proposed rule. Chapter 4 provides a qualitative discussion of these benefits.
[d] Totals may not add up due to rounding. Cost estimates were derived using a seven percent discount rate.

4.11.1 Summary of Positive Impacts under the Alternative Baseline Scenario

Exhibit 4-20 summarizes the monetized avoided costs and benefits due to the proposed rule under the alternative baseline. In total, EPA estimates approximately $180 million to $440 million in costs will be avoided as a consequence of the Preferred Option under the alternative baseline. The proposed rule will also generate modest benefits due to avoided cancer risks. Approximately 65 billion to 210 billion gallons of groundwater per year will avoid contamination due to the proposed requirements in the Preferred Option. Overall, positive impacts under the alternative baseline are roughly 60 percent of positive impacts when the original baseline is assumed.

Exhibit 4-20

Summary Of Positive Impacts Using Alternative Baseline[d]

Type of Impact	Preferred Option	Alternative 1	Alternative 2
Monetized Benefits ($ millions, present value 2008$)			
Avoided cancer risks[a]	$0.001 - $0.003	$0.001 - $0.003	$0.0003 - $0.002
Monetized Avoided Costs ($ millions, present value 2008$)			
Releases and groundwater incidents	$180 - $420	$180 - $440	$64 - $340
Vapor intrusion, average	$0.3 - $16	$0.3 - $17	$0.1 - $11
Product loss	$1.2 - $4.3	$1.6 - $4.6	$0.2 - $3.2
Total[b]	$180 - $440	$180 - $460	$64 - $360
Nonmonetized Impacts[c]			
Groundwater protected (billion gallons)	65 - 210	71 - 220	25 - 150
Acute events and large-scale releases (e.g., releases from AHFDSs and FCTs)	Not estimated	Not estimated	Not estimated
Ecological benefits	Not estimated	Not estimated	Not estimated
Nonbenzene human health risks	Not estimated	Not estimated	Not estimated

[a] The pathway assessed to evaluate avoided cancer risk is benzene exposure through contaminated groundwater.

[b] Avoided cancer risks and avoided costs are separate and additive (i.e., these estimates do not overlap). Avoided cancer risks are the benefits associated with reducing cancer cases prior to discovery of the release. Avoided remediation costs from releases and groundwater incidents are the costs related to site remediation. Avoided vapor intrusion costs include additional avoided costs associated with the remediation of vapor intrusion cases; the RIA does not address human health risk associated with vapor intrusion. Avoided product loss costs are also separate and additive.

[c] Due to data and resource constraints, EPA was unable to monetize some of the positive impacts of the proposed rule. Chapter 4 provides a qualitative discussion of these benefits.

[d] Totals may not add up due to rounding. Cost estimates were derived using a seven percent discount rate.

Chapter 5. Distributional Impacts and Considerations

5.1 Introduction

This chapter considers specific impacts that may be created by the distribution of the costs and benefits of the proposed rule. EPA has undertaken several analyses to examine how the pattern of costs and benefits may affect specific populations and sectors of the economy. Specifically, the chapter considers:

- Economic impacts associated with the costs of the proposed rule: These could include changes in facility operation and closure of facilities due to cost increases under the regulation. In addition, the proposed rule may create negative and positive employment impacts, including both reductions in employment to reduce costs and increases in employment to ensure implementation of rule provisions. Finally, the proposed rule may affect public spending related to cleanup of contaminated sites.

- Energy impacts associated with the proposed rule: EPA considers the potential for this proposed rule to affect the supply, distribution, or use of energy, including changes in the price of fuel.

- Impacts on small business and governments: EPA's regulatory flexibility analysis considers the potential for rule-related costs to have a significant impact on a substantial number of small entities (SISNOSE).

- Impacts on minority and low-income populations: EPA considers the potential for the proposed rule to have disproportionate impacts on minority or low-income populations.

- Children's health impacts: EPA considers the potential for the proposed rule to have a significant or disproportionate impact on the health of children.

Note that the analyses in this chapter employ data and results from EPA's primary analysis assuming a constant number of tanks and releases over 20 years. This chapter does not consider impacts under the alternative baseline scenarios. In general, impacts under alternative baseline assumptions would be slightly smaller, reflecting the smaller universe of affected facilities over time.

5.2 Economic Impacts

In the context of regulatory analysis, an economic impact is an effect on the economic wellbeing, or welfare, of any stakeholder due to compliance with the proposed rule. Direct economic impacts can be borne by producers (i.e., those who produce, distribute, or sell products

associated with the proposed rule), by consumers (i.e., those who purchase products associated with the proposed rule), or both.

The economic impacts of the proposed rule result from increases in compliance costs due to new regulation. In the short run, producers (i.e., owners or operators of facilities with UST systems) can respond to cost increases in one of two ways: by passing through some or all costs to customers (consumers) through increases in price, or by absorbing costs and reducing profitability. If producers cannot pass on to consumers any of their increased compliance costs, the proposed rule will chiefly affect producers in the short run, and economic impacts may include reduced profits, changes in operation, and in extreme cases, facility closure. If producers are able to increase prices on products to recover some or all compliance costs, the proposed rule will affect consumers by raising prices. The extent to which producers can pass through costs depends on the structure of the markets in which they operate.

As we discuss in subsequent sections, we do not believe that many firms will be able to pass increases in prices on to consumers through higher fuel prices. While local level motor fuel retail stations may face similar increases in costs of compliance, consumers' sensitivity to changes in gasoline prices provides a significant disincentive for station operators to increase fuel prices.[1] Instead, compliance costs are likely to be passed on through cross-marketed goods whose demand is less sensitive to changes in prices, such as items for sale at gas station convenience stores.

EPA's assessment of the economic impacts associated with this rule is presented as follows:

- **Distribution of affected facilities.** We first discuss the universe of affected facilities, with a focus on the retail motor fuels sector. This section also describes supply and demand dynamics within the retail motor fuels market and the likely economic responses to increased compliance costs.

- **Screening level economic impact analysis of average costs on facilities.** EPA presents a screening assessment of the impacts of average estimated facility-level costs on the facilities affected by the rule.

- **Sensitivity analysis of economic impacts.** To address uncertainty related to the distribution of costs among UST facilities, we present a "worst case" sensitivity analysis that identifies the maximum number of facilities that could face significant economic impacts due to regulatory costs. This section also briefly discusses implications for facility closures and changes in employment.

[1] A high degree of consumer sensitivity to changes in gasoline prices does not imply that prices are equal across gasoline stations in the same area. Factors that affect retail motor fuel prices at the station-level include traffic flows, population density, and intensity of local retail competition on the demand side, while supply can be affected by land cost, station setup, labor costs, and taxes. See p. 15 – 16, Fischer, Jeffrey. "The Economics of Price Zones and Territorial Restrictions in Gasoline Marketing," 2004, Federal Trade Commission, accessed at http://www.ftc.gov/be/workpapers/wp271.pdf

- **Impacts on public funding for cleanups.** The proposed rule is estimated to result in significant cost savings associated with avoided cleanup requirements as releases decline. A significant portion of cleanup costs are currently borne by the public sector, using taxes and fees to fund state cleanup efforts. EPA examines the potential reduction in public sector liabilities associated with the broader reduction in releases.

5.2.1 Distribution of UST Systems by Industry Sector

As shown in **Exhibit 2-3** in Chapter 2, the majority of UST systems are located at motor fuel retailers (i.e., gas stations). EPA estimates that, of the 611,449 UST systems active in 2009, 481,108 (roughly 80 percent) were located at approximately 162,000 motor fuel locations in the United States.[2] The remaining 130,341 (roughly 20 percent) of facilities are spread across several industries, including the commercial sector (wholesale, retail, accommodation, and food services), manufacturing, transportation, communications and utilities, and hospitals.[3] Notably, the sectors other than retail motor fuels are difficult to characterize with regard to UST systems; depending on their uses, UST systems may occur in varying numbers at facilities of varying size and purpose across all sectors. Only in the retail motor fuel sector do UST systems serve a similar, central function at virtually all facilities in the sector.

In addition to comprising 80 percent of all UST systems, establishments in the retail motor fuels sector also have the highest average number of UST systems per facility, with a facility average of 2.97 (roughly three systems per facility). In comparison, facilities in other sectors have, on average, between 1.47 and 2.30 systems.[4] Because many requirements in the proposed rule occur at the UST system level, establishments in the retail motor fuels sector have the highest average compliance costs per facility. In total, this sector is likely to bear roughly 70 percent of total costs associated with the proposed rule.[5]

Because the costs of the proposed rule will primarily affect the retail motor fuels sector, and because this sector is characterized by a large number of independently-owned facilities and companies, this economic impact analysis focuses on the retail motor fuels sector.

[2] EPA's count of UST systems includes states and territories, while the estimate of retail motor fuel locations includes only facilities in the continental U.S., Hawaii, and Alaska. Because only 7,619 UST systems (approximately 1.1 percent) are located in other U.S territories, we use 162,000 facilities as the total population.

[3] See Chapter 2.1 for more detail.

[4] See **Exhibit 2-3**. For example, we calculate 2.30 systems per commercial facility by dividing 52,271 systems by 22,730 facilities.

[5] Total costs under the Preferred Option are $210 million, with $180 million directly related to conventional USTs and EGTs. Motor fuel retailers will bear approximately 80 percent of these $180 million in costs, which represent roughly 70 percent of total costs under the Preferred Option.

5.2.2 Market Dynamics in the Retail Motor Fuels Sector

This section provides an overview of the U.S. wholesale and retail motor fuels markets, including market concentration, fuel distribution practices, and the implications of market structure for pricing.

Supply-side Characteristics: Ability of Producers to Pass Through Costs

The North American Industrial Classification System (NAICS) code for retail motor fuel sales (i.e., gasoline stations) is 447, and specifically applies to retailers of automotive fuel and automotive oils. Establishments classified under NAICS code 447 include facilities with and without convenience stores, and all have specialized equipment for the storing and dispensing of automotive fuels.[6]

According to the 2002 Economic Census, average revenues for establishments in NAICS sector 447 were approximately $2.1 million. On average, each establishment employed approximately eight employees.[7]

Market Concentration

Market concentration is an indicator of the ability of firms to raise prices in response to changes in the costs of doing business: in markets with fewer, larger companies (i.e., highly concentrated markets), large firms typically have greater ability to pass through price increases to consumers. One indicator of market concentration is the proportion of total sales made by individual firms within a particular market. In markets where concentration is high, few firms earn a relatively large proportion of the total revenues in a market and are sometimes able to pass price increases through to consumers because of limited competition from smaller firms.

The retail motor fuels sector is representative of the broader retail sector in market concentration. Specifically, one-third of all sales made by NAICS sector 447 are made by establishments owned by the fifty largest firms in the sector, compared with 32 percent of sales to the largest 50 firms in the broader retail sector.[8] This level of market concentration does not suggest that retailers will easily pass through price increases.[9]

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[6] 2002 Economic Census, Retail Trade, Industry series. Gasoline Stations: 2002. Issued November 14, 2004. Accessed online at: http://www.census.gov/epcd/www/concentration.html

[7] While EPA relies on 2002 Economic Census figures for values per facility, this analysis relies on more recent and focused National Petroleum News Survey values for a count of the number of facilities.

[8] 2002 Economic Census, *Retail Trade*, Industry series. Gasoline Stations: 2002. Issued November 14, 2004. Accessed online at: http://www.census.gov/prod/ec02/ec0244i14.pdf

[9] A common measure of market concentration can be obtained through the Herfindahl-Hirschman Index ("HHI"), which is calculated by squaring the market share of each firm competing in the market and then summing the resulting numbers. For example, if only two firms operate in a market and each has 50 percent of sales, then the index would register $50^2 + 50^2 = 5{,}000$. The U.S. Department of Justice's merger guidelines categorize markets in which HHI is between 1,000 and 1,800 points as moderately concentrated, and those in which the HHI is in excess of 1,800 points as concentrated. Because the four largest firms in NAICS sector 447 generate only eight percent of

Geographical Concentration

Gasoline stations are generally distributed across the United States in proportion to population. The most populous states have more establishments and higher proportions of gasoline sales.[10] While no data are available regarding the distribution of facilities by size, the retail gasoline market is relatively homogeneous nationwide, and it is likely that facilities of different sizes are distributed according to population as well.

Ownership Structure

The 2009 Gas Price Kit published by the National Association of Convenience Stores classifies motor fuel retailers into three broad categories, depending on the manner in which they obtain their wholesale product:[11]

- **Refinery-Owned:** Fewer than two percent of facilities are retail operations directly owned by large oil producers. These stations receive wholesale product directly from the oil company's refinery, and their profit is part of the oil company's profit. At these facilities, the parent corporation manages all aspects of the customer experience and establishes a consistent brand identity.

- **Branded Independent Retailers:** Approximately 55 percent of facilities are branded independent retailers. These facilities are owned by independent operators and contract with a refinery to sell a particular brand of gasoline. This owner leverages the supplier's marketing and ensures constant supply in exchange for a surcharge per gallon paid to the supplier. Branded retailers' contracts with refiners typically contain clauses that specify the margins retailers can charge above wholesale prices.

- **Unbranded Independent Retailers:** Approximately 45 percent of facilities are unbranded independent retailers. These retailers purchase gasoline on the open market, without committing to a particular supplier.

Wholesale gasoline is a commodity, but varies in price regionally based on a combination of refinery locations, specific fuel mixes (e.g., to meet air quality standards), and the type of distributors in a region. Types of wholesalers include:[12]

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the sales in that market, the HHI will be well below 1,000 for this sector. We conclude that firms' relatively small market share translates into weak pricing power. For additional information, see: http://www.justice.gov/atr/public/testimony/hhi.htm

[10] U.S. Census Bureau, Industry Statistics Sampler: NAICS 447, Geographic Distribution—Gasoline Stations: 1997. Accessed online at: http://www.census.gov/epcd/ec97/industry/E447.HTM

[11] National Association of Convenience Stores, 2009 NACS Gas Price Kit, http://www.nacsonline.com/NACS/Resources/campaigns/GasPrices_2009/Pages/HowRetailersGetSellGas.aspx

[12] Kleit, Andrew N., 2003. "The Economics of Gasoline Retailing Petroleum Distribution and Retailing Issues in the U.S."

- **Refinery-owned wholesalers**: Refiners (typically large oil companies) distribute directly to their own retail outlets in all regions, and in some areas may also distribute directly to independent branded and unbranded retailers (competing with other suppliers in the unbranded market).

- **Area Franchisees**: Otherwise known as "jobbers," these firms obtain the right from oil companies to franchise a brand of motor fuel in a particular area. Jobbers are responsible for siting and building new facilities and marketing the brand, which further removes refiners from operating activities. The term is also used to describe wholesale distributors of motor fuels that offer multiple brands.

While some regions have significant competition among distributors, the market power of refiners and the contract structure of many retailers means that retailers in general have little control over the price of their fuel supply.[13] As a consequence, any cost increases must be absorbed by retailers or passed through to customers.

Demand-side Characteristics: Consumer Response to Price Increases

Consumer reactions to price changes are critical in determining whether a producer (i.e., retailer) can pass on costs. The degree to which consumers change the quantity they consume when the price of a good increases is known as the price elasticity of demand. Economists define demand as inelastic if the quantity demanded changes less than price (e.g., quantity demanded changes by one percent when prices rise (or fall) by 1.4 percent). Similarly, demand is said to be elastic if quantity demanded changes proportionally more for a relative change in price.

Motor fuel retailers rely on sales of gasoline for most revenues, though most also sell other automobile-related or convenience products. Research has documented that broad (national) market demand for gasoline is relatively price-inelastic in the short-run: consumers do not make immediate, significant changes in gasoline purchases if prices increase.[14] On its face, this dynamic would suggest that a retailer could pass through any cost increases to consumers. However, the structure of the market for gasoline prohibits significant price fluctuations at the facility level. While national demand is relatively consistent, consumers are highly sensitive to price differences within local markets.[15] Small increases in price at one location can produce relatively large changes in quantity demanded for a particular facility as consumers seek other local retailers with lower costs.

[13] Other suppliers, e.g. for convenience store items, may be easier with which to negotiate but may not be available to all motor fuel retailers.

[14] Dahl, Carol and Thomas Sterner, 1991. "Analyzing Gasoline Demand Elasticities: A Survey," *Energy Economics*, July: p. 203 – 210.

[15] As noted above, a high degree of consumer sensitivity to changes in gasoline prices does not imply that prices are equal across gasoline stations in the same area. See: Fischer, Jeffrey. "The Economics of Price Zones and Territorial Restrictions in Gasoline Marketing," 2004, Federal Trade Commission, accessed at http://www.ftc.gov/be/workpapers/wp271.pdf

A recent National Association of Convenience Stores (NACS) survey provides insights into the price pressures faced by local retailers:[16]

- 73 percent of respondents stated that price was the most important factor in their gasoline-purchasing choices.
- 32 percent stated that they would take the time to make a left turn on a busy street to save a penny per gallon of gasoline.
- 20 percent said they would drive ten minutes out of their way (a 20-minute round trip plus cost of fuel) to save two cents per gallon. This amounts to savings of less than one dollar in terms of fuel for nearly all passenger vehicles on the road today.

Local competition for price-sensitive customers discourages retailers from increasing gasoline prices, except in cases such as wholesale price increases or tax increases where changes are uniform across facilities.[17] Because compliance costs may vary by facility depending on existing technology and practice, it is not likely that retailers will opt to pass through compliance costs by raising gasoline prices. While retailers may be able to increase the prices of other products (e.g., motor oil or convenience store products), it is also likely that some retailers will be forced to absorb some or all of the costs associated with the regulation.

Retailers in relative isolation may be better positioned to pass on increases in cost to consumers. Research shows that store-level pricing is sensitive to the concentration of competition. In areas where motor fuel retailers are relatively sparse, facilities may be better able to pass cost increases on to consumers, for whom the opportunity cost of finding an alternative store is higher when they must travel farther.[18]

However, because consumers are especially price sensitive about gasoline and it is not clear what other options owners or operators have to increase prices, we assume that owners or operators will likely bear the economic impacts of the rule. We therefore examine producer impacts, including the possibility that some facilities may close due to cost increases.[19]

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[16] National Association of Convenience Stores, "Consumer Fuels Report," February 2008, as cited in "Testimony of Bill Douglass, Douglass Distributing Company, on behalf of The National Association of Convenience Stores before the House Judiciary Committee, Anti-Trust Task Force Hearing to Examine the Consumer Effects of Rising Gas Prices," May 7, 2008.

[17] This may vary, depending on the region. For example, in Vancouver, gasoline prices are uniform and rigid (due to tacit collusion among wholesalers), while prices in Ottawa are dispersed and volatile (due to the price-disrupting behavior of "maverick" firms). See Eckert, Andrew and Douglas S. West, "A tale of two cities: Price uniformity and price volatility in gasoline retailing, "2003, *The Annals of Regional* Science 38:25–46.

[18] See Hoch *et al.*, 1995. "Determinants of Store-level Price Elasticity," *Journal of Marketing Research*, Vol. 32 (1): p. 17 – 29.

[19] A more detailed analysis of consumer impacts is prohibitively difficult for two reasons. First, the precise set of goods and services whose prices may increase is difficult to characterize. Second, gasoline aside, the main draw to products sold at retail motor fuel facilities is convenience, i.e., ease of access. Most non-fuel products can be purchased for lower prices at grocery stores, for example. Consumers can therefore shop at other types of

5.2.3 Assessment of Market Exits and Employment Impacts

In a market setting where producers cannot reliably pass through costs, the most significant economic impacts are related to reduced facility profits. In some cases, managers can cut supply or employment costs (this could result in smaller worker paychecks). In cases where costs exceed facility profits, it is likely that in the long term a facility would exit the market. A critical factor, therefore, is an estimate of average firm or facility profits.

It is difficult to estimate the profitability of retail motor fuel stations because many are small and privately held and are not required to report profits publicly. However, some evidence suggests that profit margins are below five percent, and data suggest that average after-tax profit margins reported to the IRS for gas stations are roughly 1.5 percent.[20] Holding all other things equal, an annual cost greater than 1.5 percent of gross sales (i.e., a cost greater than $1,500 for a firm earning $100,000 a year) would exceed average reported profits and would therefore cause a motor fuel retailer to operate at a loss. If the facility cannot adjust its prices or lower costs, it will eventually exit the market.[21]

Consistent with the assessment of small business impacts in Section 5.4 of this chapter, EPA considers the impact of the proposed rule on small facilities in order to identify the most likely facilities to exit the market. Assuming that all motor retail facilities, regardless of income, have an "average" configuration of approximately three tanks, EPA calculates the average total cost per facility to be $892 under the Preferred Option (reflecting a cost of approximately $300 per UST system).[22,23]

Using data from the 2002 Economic Census and the regulatory flexibility screening analysis methodology, EPA concludes that a facility-level cost of $892 would exceed 1.5 percent

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facilities for the same goods, but typically opt to pay a premium for purchases at a convenient location. Note that, even though consumers will be able to purchase equivalent goods at different locations, there is a reduction in consumer surplus associated with the loss of convenience in the purchase.

[20] For corporations reporting net income, profit margins before non-cash items (depreciation and amortization) and income tax (or credits) were approximately 1.8 percent. Earnings before depreciation and amortization account for the fact that firms can postpone capital expenditures to save cash, and would likely do so while adapting to higher costs. If non-cash items and taxes are included, earnings drop to roughly one percent. Our approach averages of the two options, reflecting an assumption that firms will do something to adapt to higher costs while they sort out how to adjust prices, and that firms typically minimize profits reported to the IRS. See SOI TaxStats, Table 7: Corporation Returns with Net Income for 2007, accessed at http://www.irs.gov/taxstats/article/0,,id=170693,00.html. See also 2002 - 2010 RMA *Statement Studies*, Sector 447, for a range of profitability data from facilities of different sizes.

[21] Throughout this chapter, EPA refers interchangeably to reductions in net profit and the proportion of revenues that the costs of the proposed rule will create. In both cases, we refer to the impact of the cost of the proposed rule on the profitability of a facility.

[22] Specifically, we assume 2.97 UST systems per facility.

[23] Under Alternative 1 the average retail motor fuel facility cost would be $1,801, and under Alternative 2 it would be $613. In Indian country, where facilities are required to meet more requirements than elsewhere; average cost per facility is $2,364 under the Preferred Option, $3,333 under Alternative 1, and $1,999 under Alternative 2.

of total reported revenues (i.e., be equal to or greater than total profits) for 561 firms, representing less than one percent of the universe of motor fuel retail facilities.[24] In comparison, approximately 2,400 facilities per year closed over the period between 2005 and 2008.[25,26] In some cases, any exits related to regulatory costs may coincide with exits that would have occurred in the baseline. Furthermore, it is likely that many of the affected facilities will also have options to pass through at least a portion of costs, and many small facilities may have fewer than three UST systems. Therefore, EPA concludes that the market impacts associated with this proposed rule are likely to be diffuse and minimal, assuming a relatively uniform distribution of costs nationwide.

Sensitivity Analysis

EPA's finding of minimal market impacts rests on an assessment of "average" facilities with "average" rule-related costs. If the costs of the proposed rule are concentrated on certain facilities, it is possible that additional impacts (e.g., market exits) could occur. EPA therefore employs several sensitivity analyses to consider alternative, "worst case" distributions of regulatory costs across facilities.

To examine the extent to which the distribution of regulatory costs can be "concentrated" on specific facilities, EPA constructs a "worst case distribution" in which regulatory costs are concentrated on a subset of facilities.[27] To obtain this distribution, we artificially assign costs to create the largest cost for the largest number of facilities, by assuming that the same facilities in

[24] An analogous statement of this outcome is that all facilities with revenues below approximately $59,500 per year would incur new costs equal to or in excess of profits of 1.5 percent of total revenue. Note that U.S. Census data indicate that all firms in the motor fuel sector that earn less than $59,500 are single-location firms.

[25] NPN reported a station count of 161,768 in 2008, compared with 168,987 in 2005. These figures imply a decrease of approximately 2,400 stations, or 1.4 percent, per year. See *National Petroleum News*, "MarketFacts 2008," and NPN MarketPulse, "2005 U.S. motor fuel station count: 168,987," both accessed at http://www.npnweb.com/.

[26] There is a significant discrepancy between the number of establishments reported by the 2007 Economic Census by the U.S. Census Bureau and the 2008 station count published by National Petroleum News. The Census reported 118,756 stations operating in any capacity, while NPN counted 161,768 stations. EPA contacted the Census Bureau, which offered three possible reasons for this discrepancy. First, grocery stores with gas stations and wholesale truck stops with gas stations may be categorized under grocery stores or wholesale retail instead of gas stations. Second, the count reported by the Census excludes non-employer establishments (10,131), which are family-owned and only employ family members. Third, for those establishments that do not report back to the Census regularly, the Bureau is not likely to record changes in establishments that have happened at the location (personal communication with the Office of Underground Storage Tanks, November 3, 2010). NPN likely provides a more accurate reflection of the number of stations because it is an industry publication specific to the petroleum sector.

[27] Ideally, EPA would evaluate which facilities are likely to incur significant impacts by examining the specific changes each will be required to make to achieve compliance. These costs would be compared with the facility's revenue and profit margin to establish whether it can incur the additional costs and remain in business. To EPA's knowledge, no data of this resolution are available for the large population of facilities with UST systems.

the state make every regulatory change.[28] We further assume that the smallest facilities in the U.S. are the facilities that bear the highest cost.[29]

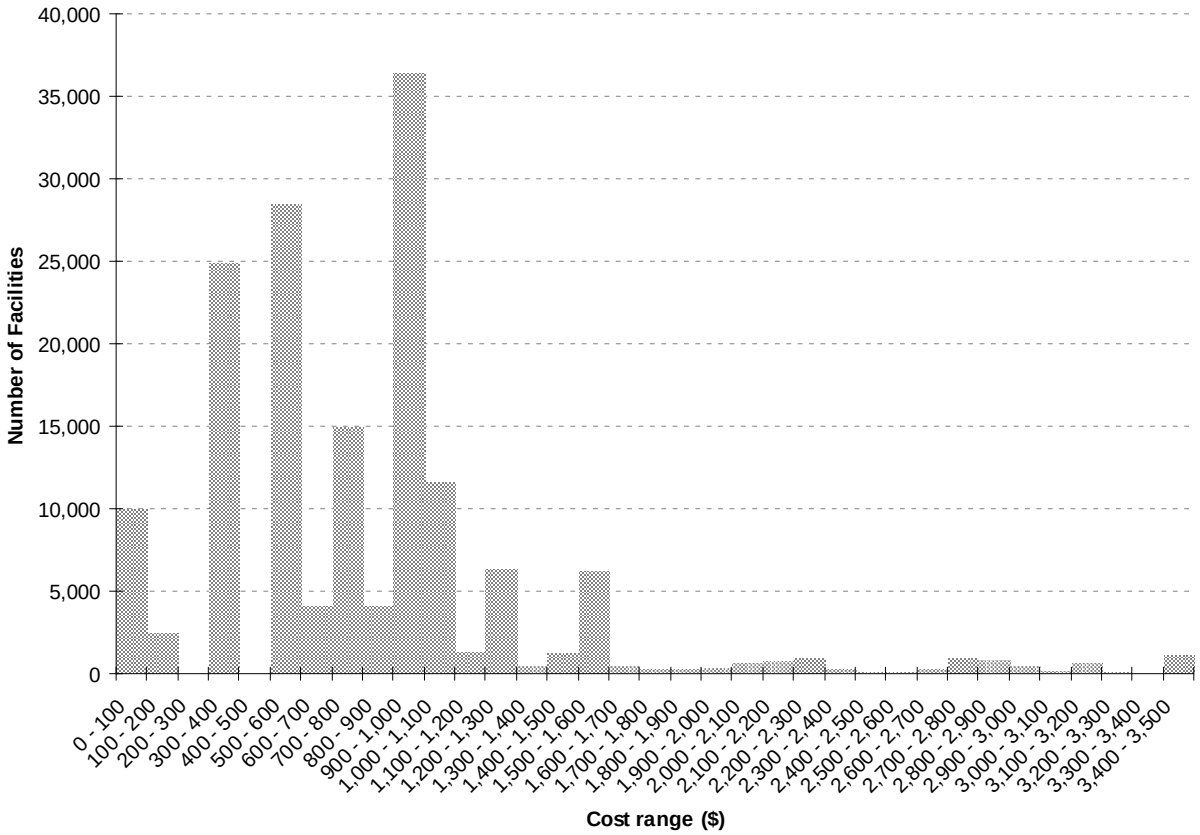
Exhibit 5-1 displays the universe of retail motor fuel UST facilities in the United States when costs are allocated to concentrate impacts. This creates an allocation of costs that varies broadly, from as little as $30 to just over $3,400 per facility.

[28] For example, consider a state with 1,000 UST facilities that will be subject to three hypothetical technical requirements: Requirement A will affect 500 facilities and cost $50 per facility; Requirement B will affect 250 facilities and cost $100 per facility; and Requirement C will affect 100 facilities and cost $200 per facility. The average cost for all of these facilities is $70 (((50*500) + (250*100) + (100*200))/1000). However, the highest cost possible in this state is $350 (costs of $50 from Requirement A, $100 from Requirement B, and $200 from Requirement C), and the largest number of facilities that could incur this cost is 100 (the smallest of the universes affected by Requirements A, B, or C). The next highest cost is $150 (costs of $100 from Requirement B and $50 from Requirement A), which affect 150 facilities, excluding those also affected by Requirement C. The last group would be affected only by Requirement C, with 250 facilities at a cost of $50 per facility. Such an allocation of costs creates an unlikely outcome with a high potential for market exits. Appendix K provides the detailed summary of this threshold calculation.

[29] EPA also examined a sensitivity analysis that would specifically consider the effects of "front-loading" capital cost requirements, but this scenario would have no effect on the results of the "worst case" sensitivity analysis. The “worst case” scenario examined here already assumes simultaneous implementation of all requirements under the proposed rule, including several that actually have delayed implementation schedule (e.g., interstitial integrity tests). In addition, the analysis includes annualized costs for capital requirements for Indian country systems (e.g., secondary containment). The “worst case” scenario does not address the replacement of closure of lined tanks that cannot be repaired according to a code of practice, and does not assume that full capital costs are incurred in a single year for affected tanks, but the facilities that would be affected by these changes are already among the highest cost facilities identified, and are already therefore included in the number of facilities potentially affected under this worst-case assumption.

Exhibit 5-1

Distribution Of Retail Motor Fuel UST Facility Costs
Using "Worst Case" Distribution



One possible concern is whether facilities that are likely to face high costs are geographically concentrated in certain states or regions. To assess this, we examined the distribution of the five percent of facilities incurring the highest costs if costs were concentrated (specifically, 8,135 facilities incurring costs greater than $1,800). The proportion of highest-cost facilities does not vary substantially by state. The highest concentration of high-cost facilities would be 6.4 percent (in Guam); 53 of the remaining 56 states and territories (accounting for 91 percent of retail motor fuel facilities) have roughly 5.0 percent to 6.5 percent of their facilities with this cost (OR, CA, and MS have fewer than four percent high-cost facilities). Differential economic impacts across states are not likely to occur as a result of disproportionate state-level impacts from this rule, even in a scenario of maximum concentration of costs across the fewest firms.

To assess economic impacts in this worst case scenario, EPA pairs the distributions of facility size and costs to identify situations in which estimated costs would exceed 1.5 percent of gross sales (the average reported retail motor fuel facility profit). Facilities with costs exceeding 1.5 percent of revenues may face a significant economic impact under worst case assumptions.

Market Exits

Even under the adverse scenario presented above, economic impacts to affected entities are relatively small. The least compliant facilities in the least regulated states would incur costs of $3,415 in the worst case.[30] This represents less than 1.5 percent of revenues for facilities earning more than $228,000 per year. To assess the worst-case potential impact, EPA assumed that the facilities with the highest costs (those in the right-hand tail of the distribution in **Exhibit 5-1**) are also the facilities with the lowest revenues and allocated costs to those facilities to maximize the number of potential exits. EPA estimates that 6,100 facilities earning less than $250,000 per year in the U.S. (in 2002 dollars) would be subject to costs exceeding 1.5 percent of revenues in the worst case scenario.[31] To the extent that those facilities could not increase prices to offset higher costs, it is likely that at least some of them would exit the market. If all of these facilities exited the market, the closures would constitute roughly four percent of existing facilities. Note that this scenario relies on a highly unlikely confluence of assumptions, including:

- **All facilities with income less than $250,000 have average configurations of three UST systems.** In fact, it is likely that small facilities have fewer than three tanks and would therefore not be subject to the facility-level costs estimated here It is likely that the smallest facilities also operate only a single UST system, which would reduce their compliance costs by approximately 67 percent.[32] Under such circumstances, most small operators would not be subject to a significant economic impact even in the worst-case scenario.

- **No facility has any option to increase prices on goods or services or to identify options for savings.** While gasoline prices are unlikely to rise in response to this proposed rule, consumers may be willing to pay marginal cost increases on other products and services. Moreover, in remote rural areas, retailers may be able to directly pass costs on to consumers.

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[30] Facility costs of roughly $3,400 or less are representative of approximately 99 percent of worst-case, high-end cost outcomes. Facilities in Indian country are the only exception, as they will also be required to comply with additional regulations for operator training and secondary containment. Because this group of facilities represents only roughly one percent of facilities with costs at or above $3,400, we do not present them as the main highest-cost scenario.

[31] The U.S. Census identified 5,142 facilities that earned less than $250,000 in 2002. For the purposes of its SBA analysis, EPA revised this estimate upward by 46 percent to reconcile disparities between Census gas stations counts from 2002 and NACS gas station counts from 2008. Of the estimated 7,520 facilities earning less than $250,000 per year in 2002, we arrayed the highest cost facilities with the highest revenue facilities, to ensure an estimate of as many exits as possible. See Appendix K for a detailed explanation of our methods.

[32] According to the 2009 NACS Convenience Store Industry Fact Book, the average motor fuel retailing facility has monthly throughput of approximately 118,500 gallons. As discussed in Chapter 2, we believe that the average motor fuel retailer operates approximately 3 UST systems. This equates to roughly 39,500 gallons of monthly throughput per system. In addition, based on information from a mid-size retail fuel marketer, EPA believes that a facility requires a minimum throughput of approximately 30,000 gallons per month to remain economically viable, which equates to upward of $50,000 in revenues per month given gasoline prices in excess of $2.00 since 2005. See http://www.eia.gov/dnav/pet/pet_pri_gnd_a_epmr_pte_dpgal_a.htm.

- **A profit margin of 1.5 percent is standard.** Companies have a clear incentive to minimize taxable profits when filing income taxes with the IRS. Because net income (profit) is taxable, corporations that are not publicly traded typically take legitimate steps (e.g., year-end investments in equipment, employee bonuses) to reduce both net income and tax burdens. As a result, a 1.5 percent after-tax profit estimate based on IRS data is likely to understate average profitability.

Finally, this analysis does not adjust the Census data on facility revenues for inflation, though costs are presented in 2008 dollars. Due to the variability of gasoline pricing, we adopt a conservative assumption that revenues have remained static in nominal terms since 2002.

While our sensitivity analysis suggests that just over 6,100 facilities may be at risk of significant economic impacts in a worst case scenario, it is unlikely that a significant number of actual market exits would result from the proposed regulation. A plausible exception to this finding exists in cases where a facility with high upgrade costs faces high levels of local competition. Even in these cases, closures would likely be consistent with the recent rate of industry consolidation of 1.4 percent per year.

Price Impacts

The high sensitivity of local demand to changes in retail motor fuel prices makes it unlikely that firms will react to the proposed rule by raising gasoline prices, However, the cost of other goods and services could potentially increase as firms seek to offset regulatory costs through sales of other products. Retailers will likely increase the prices of goods that are relatively price inelastic, such as tobacco products, auto service charges, or snack food and other convenience items.

Employment Impacts

The increased operating costs incurred by facilities to comply with this proposed rule may result in very slightly increased prices for their goods and services, as previously discussed. These potential price increases may result in reduced demand and thus reduced output of the facilities' goods and services. This could translate into lower demand for labor, a result commonly referred to as the demand effect. As discussed earlier, the price effect is expected to be small though, and given the relatively inelastic demand for gasoline, the demand effect is likely to be small as well. There is also the potential for the proposed rule to result in a small number of facilities exiting the market, which could result in a temporary negative employment effect as these workers look for other positions. However, as noted earlier and in the next section below, these exits may coincide with exits that would already occur in the baseline.[33] In addition, given the competitive nature of the retail motor fuel sector and the similar regulatory costs faced by each facility, many of these facilities may be able to pass through at least a portion

[33] See footnote 25.

of these costs (see Price Impacts section above).[34] As a result, the potential employment effect of market exits from the proposed rule is likely small.

Furthermore, some of the requirements of the proposed rule may have a positive impact on employment. For example, walkthrough inspections require labor as a primary input which may lead to small increases in employment at regulated facilities.[35] In addition, the increased demand for testing services and training under the proposed rule may also lead to increased demand for labor. Since the proposed rule could potentially affect the demand for labor both positively and negatively, the overall direction of net employment impacts is unclear, but is most likely very small relative to the size of the industry.

Long-run Economic Impacts

The proposed rule is unlikely to generate substantial additional impacts in the long run, but in a worst-case scenario it could accelerate ongoing consolidation trends in the retail motor fuel sector if market exits result. NPN reports that 168,987 motor fuel stations operated in the United States in 2005. By 2008, this number had fallen to 161,768, a decrease of 4.3 percent compared with 2005, or approximately 1.4 percent per year.[36] While broader market consolidation is related to ownership strategies among oil companies and general economic patterns, facilities facing significant periodic costs (e.g. UST system replacement) may be most likely to close. Similarly, facilities with higher operating costs as a result of the rule may opt to close. In such cases, exits caused by the rule are likely to affect the most marginal firms and would likely coincide to some extent with exits that would have occurred in the absence of the proposed rule. These closures will occur in the context of the national decline in the number of facilities, such that the rule is unlikely to cause a significant number of closures beyond those that will occur as part of the existing trend.

5.2.4 Assessment of Public Sector Cost Savings Related to Avoided Releases

A significant positive effect of the proposed rule derives from its impact on state funds created for the purpose of providing a financial responsibility mechanism to UST owners and operators. Among 56 state and territory governments, 43 have an existing fund created for the purpose of remediating releases; of these, 36 are active and continue to accept claims.[37] In many of these states, owners and operators are required to pay for a portion of remedial actions through

[34] Note that small marginal facilities are also likely to have fewer than three UST systems and thus face lower than average facility-level compliance costs.

[35] For example, EPA estimates that monthly walkthrough inspections of a facility will take nearly an hour to complete, on average. A compliant owner or operator in a state that does not currently have this requirement will need to allocate 12 man-hours of incremental effort per year to satisfy this portion of the proposed rule.

[36] See footnote 25.

[37] U.S. EPA, "Status of State Fund Programs," accessed September 9, 2010 at http://www.epa.gov/oust/states/fndstatus.htm

deductibles that generally range from zero to $100,000.[38] Given an average cost of remediation of $127,216 in 2009, however, state funds are frequently required to finance some portion of remediation costs.[39] These state funds are created by state legislation and must be submitted to EPA for approval before they can be used as financial responsibility mechanisms. In most cases, states generate money for their funds by levying tank registration and petroleum fees, which are then used to provide payments for remediation of releases beyond the deductibles paid by responsible parties. In states where funds rely on gas taxes and accept claims related to releases, these expenditures represent subsidies from the public to owners or operators responsible for releases.

The extent to which the proposed regulations reduce the occurrence of new releases produces two welcome effects:

- **Assignment of costs**. Fewer releases implies lower expenditures from state funds. This represents a reduction in this public subsidy and a reassignment of costs from the public remediation costs to private entity prevention costs. This improves market signaling and efficiency by requiring owners and operators to focus on release prevention.

- **Competitive effects**. High-performing owners or operators are less likely to incur significant regulatory costs than low-performing owners or operators. As a result, the regulatory costs and cost savings improve the alignment of incentives to focus on private-sector prevention costs and reduce public-sector remediation costs.

To illustrate the potential magnitude of the public expenditures that could be affected by the regulation (i.e., distributional effects), we examine states that have active state funds and categorize them into those that finance their funds via petroleum and tank fees ("Tier 1"), or via only a tank fee ("Tier 2").[40]

We assume that states that are required to comply with a larger number of the new requirements will experience a greater reduction of releases, all other things equal. To estimate the distribution of avoided releases, we calculate the average number of requirements with which

[38] Association of State and Territorial Solid Waste Management Officials, State Fund Survey Results 2009, Table 1: Design Characteristics of State Financial Assurance Funds, accessed at http://astswmo.org/files/publications/tanks/2009StateFundSurvey/2009-Table_1-Design-Characteristics-of-St-Financial-Assurance-Funds.pdf.

[39] Association of State and Territorial Solid Waste Management Officials, State Fund Survey Results 2009, Summary of State Fund Survey Results, accessed at: http://astswmo.org/files/publications/tanks/2009StateFundSurvey/2009-Summary.pdf. For example, representatives of the state of New Hampshire indicated that in most cases, the State Fund incurs remediation costs, except that the owner or operator typically bears the cost of immediately stopping the leak. In addition, New Hampshire indicated the owner or operator typically pays a $5,000 deductible towards the final remediation cost, and in New Mexico, the owner or operator typically pays a deductible between $0 and $10,000.

[40] States with active financial assurance funds can be found at http://www.epa.gov/OUST/states/fndstatus.htm

the systems in each state will need to comply. [41] We assign avoided releases based on both the number of systems in a state and the average number of requirements on each system, and we value releases based on the national profile of avoided releases and avoided groundwater incidents.[42] Using ASTSWMO data, we subtract from our estimate of the potential cost borne by the public the deductible that owners or operators would be expected to pay.[43] See Appendix N for a discussion of the methodology used.

Exhibit 5-2 presents the results of our screening-level assessment. Among the 36 states with active state funds that fall into Tier 1 or Tier 2, we find that the potential reduction in public expenditures could reach $191 million to $431 under the Preferred Option, with $150 million to $338 million in Tier 1 and $41 million to $94 million in Tier 2.[44] Reductions in public expenditures would equal approximately $198 million to $457 million under Alternative 1 and $80 million to $340 million under Alternative 2. These savings would be slightly lower in a scenario where deductibles are in the upper end of their ranges. We note that, to realize the savings in public expenditures, state government action would be required to lower petroleum fees. Alternatively, the extent that funds are not constrained in their use, a redistribution of funds (e.g., to backlog sites awaiting cleanup) could also represent a significant public benefit. The values presented in this table do not reflect discounting to account for regulatory compliance schedules.

Note that this screening-level analysis is intended only to identify the potential magnitude of impacts on state fund liabilities. A more detailed analysis of specific state program costs and the likely distribution of avoided releases would be necessary to precisely measure potential savings. Overall, the values in **Exhibit 5-2** suggest that requiring owners and operators to focus on prevention reduces costs to state financial assurance funds by over $150 million under the Preferred Option and Alternative 1 and upward of $50 million for Alternative 2.

[41] We use the number of times a system is affected rather than the actual number of systems affected because we lack the data to determine which units are affected by each requirement. For example, if two requirements each affect 1,000 and 500 units, respectively, they may ultimately affect between 1,000 and 1,500 units, depending upon whether any overlap exists among the two regulated universes.

[42] We calculate this as avoided costs due to avoided releases divided by number of releases avoided. The procedure is similar for avoided groundwater remediation costs.

[43] We rely on the ASTSWMO Fund Survey Results 2008 for the data that underlie our construction of tiers. These data are available at http://www.astswmo.org/publications_tanks.htm.

[44] Due to our calculation methods, two states with very high deductibles (Minnesota and Virginia) showed deductible amounts and avoided releases that exceed their estimated avoided release costs. We exclude them from our calculations, such that our estimates for likely underestimate the potential for redistributive effects.

Exhibit 5-2

Summary Of State Financial Assurance Fund Distributional Effects

Fund Revenue Mechanisms	Preferred Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Low deductible scenario (High distributional effects)			
Tier 1 (petroleum & tank fee)	$150 - $338	$154 - $355	$53 - $275
Tier 2 (tank fee only)	$41 - $94	$44 - $102	$27 - $65
Total	**$191 - $432**	**$198 - $457**	**$80 -$340**
High deductible scenario (Low distributional effects)			
Tier 1 (petroleum & tank fee)	$138 - $303	$142 - $318	$49 - $120
Tier 2 (tank fee only)	$39 - $87	$42 - $95	$14 - $71
Total	**$177 - $390**	**$184 - $413**	**$63 - $191**

5.2.5 Economic Impact Summary

This set of analyses shows that it is unlikely that the proposed rule will have substantial negative economic impacts on the regulated community, in part because the costs of the rule appear to be evenly distributed across a large population of facilities, and remain modest at the facility level. Even under a highly improbable worst case scenario in which the highest costs are incurred by the smallest facilities, roughly four percent of the universe of retail motor fuel facilities would potentially incur costs greater than publicly reported industry average profit margins. Market exits of roughly 2,400 facilities annually represent the current market trend. It is likely, therefore, that most or all market exits under this proposed rule would coincide with exits of specific out-of-date facilities that are on the brink of exiting, and would not create a significant additional contraction of the total market.

A more likely response by many affected firms will be to adapt by increasing prices on higher margin products and services. While overall employment impacts are unclear, it is possible that there may be an increase in labor demand due to the additional requirements placed on owners and operators, and additional demand for third-party testing services.

In addition, it appears that the proposed rule could have a positive impact on state governments that currently fund a portion of UST-related remediation costs through gasoline taxes and fees. A decrease in the number and severity of releases represents cost savings to states due to decreased demand on state financial assurance funds. Our initial screening assessment suggests that annual costs to states could be reduced by over $150 million. This represents a reduction in a public subsidy and an improvement in market signaling.

5.3 Energy Impact Analysis

Executive Order 13211, "Actions Concerning Regulations that Affect Energy Supply, Distribution, or Use" (May 18, 2001), addresses the need for regulators to consider the potential energy impacts of the proposed rule and resulting actions. Under Executive Order 13211, agencies are required to prepare a Statement of Energy Effects when a regulatory action may

have significant adverse effects on energy supply, distribution, or use, including impacts on price and foreign supplies. Additionally, the requirements obligate agencies to consider reasonable alternatives to regulatory actions with adverse effects and the impacts that such alternatives might have on energy supply, distribution, or use.

The proposed rule affects underground storage tanks used in the storage of motor fuel or emergency generator fuel. However, it is not likely that this proposed rule will have significant impacts on energy supply, distribution, or use. To assess the energy impacts of the proposed rule, EPA considers potential changes in energy supply and use associated with the total costs estimated in Chapter 3. The following summarizes EPA's assessment of the energy impacts that the proposed rule will have in energy supply, distribution, and use.

Energy Supply and Distribution

The proposed rule consists of additional regulatory requirements that apply to the owners and operators of underground storage tanks. To the extent that the proposed rule affects the motor fuel sector, it does so at the retail motor fuel sales level, rather than the level of refineries or distributors who supply the retail stations with motor fuel. Correspondingly, we do not expect the proposed rule to have any impacts on energy supply or distribution.

In terms of local motor fuel availability, we believe two outcomes are possible. If a motor fuel station is located in an area where competition from other stations exists, we do not believe fuel prices will be affected. Rather, owners and operators will seek to recover the costs of the proposed rule by increasing the prices of convenience items. If a station does not also operate a convenience store through which it can recover these costs, it may become subject to a significant economic impact and exit the market. In such a case, however, supply will not be disrupted, as other competitors fill the void left by the former market participant.

We do not expect market exits to occur in low-competition environments due to the market power of stations and the marginal nature of the increase in cost. If a motor fuel station is located in an area where competition is not intense (e.g., a rural setting), it may opt to directly pass on higher costs through increases in fuel or convenience goods prices. As we discuss below, even if the entire cost of the rule is priced through to consumers, the change in fuel prices is not likely to be measurable.

Energy Use

The additional regulatory requirements contained in the proposed rule may increase compliance costs for owners and operators of retail motor fuel stations. If the owners and operators of retail motor fuel stations affected by the proposed rule can successfully pass through their increased compliance costs, energy use may be affected through higher energy prices caused by the proposed rule. However, we do not expect a significant change in retail gasoline prices to result from this proposed rule for the follow reasons:

- Economic analyses of retail fuel prices have revealed that demand for gasoline is highly sensitive to price (elastic) within localized geographic areas.
- As a result, if one motor fuel retailer in an area passes through increases in compliance costs by increasing gasoline prices, while another does not, the one with higher prices is at a significant competitive disadvantage.
- Retail motor fuel stations often have associated stores and/or services, such as car washes, repair operations, and convenience outlets, on which they can more successfully pass through increases in compliance costs.

When considered in the context of total fuel consumption in the United States, the proposed rule would represent only a very small fraction of motor fuel prices even if it was fully passed through to consumers. According to the Bureau of Transportation Statistics, the United States consumed 170,765,000,000 gallons of motor fuel (including gasoline and diesel) in 2008 at an average price of $3.27.[45] This implies that U.S. consumers spent $558 billion in 2008 on motor fuel. The overall cost of the proposed rule is roughly $210 million, less than one-tenth of one percent of the amount spent by end-users on motor fuel in 2008. In comparison, an increase of $0.01 in the average price of motor fuel in 2008 would have increased the total cost to consumers by approximately $1.7 billion. Given these circumstances, the proposed rule should not have a measurable impact on retail prices.

5.4 Regulatory Flexibility Analysis

The Regulatory Flexibility Act (RFA) as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), 5 USC 601 et seq., generally requires EPA to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute. This analysis must be completed unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. If a regulation is found to have a significant impact on a

[45] The 2008 prices per gallon for all grades of retail motor gasoline and No. 2 diesel fuel (all concentrations of sulfur) were $3.32 and $3.15, respectively, as reported by the Bureau of Transportation Statistics in Table 3-8: Sales Price of Transportation Fuel to End-Users in National Transportation Statistics 2010 (at http://www.bts.gov/publications/national_transportation_statistics/pdf/entire.pdf). We weight these prices according to prime supplier sales volumes in 2009 published by the Energy Information Administration, which summed to 362,798.5 thousands of gallons per day for gasoline and 132,489.3 thousands of gallons per day for all grades of diesel fuel (at http://www.eia.gov/dnav/pet/pet_cons_prim_dcu_nus_a.htm).

substantial number of small entities, further analysis must be performed to determine what can be done to lessen the impact. Small entities include small businesses, small organizations, and small governmental jurisdictions. EPA developed a screening analysis and supplemental analysis consistent with the requirements under RFA; this section presents a summary of these findings, and Appendix L provides the detailed screening analysis.[46]

For purposes of assessing the impacts of this rule on small entities, a small entity is defined as: (1) a small business as defined by the Small Business Administration's (SBA) regulations at 13 CFR Part 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field. For the purposes of this analysis, EPA considered costs in excess of one percent and three percent of revenues as indications that the proposed rule may have a significant impact on a given small entity, and estimates of greater than 20 percent of total small firms or 1,000 total small firms affected as indications that a substantial number of small entities may be affected by the proposed rule.

5.4.1 Small Business Screening Analysis

We estimate that there are approximately 83,900 firms operating 162,000 facilities in the U.S. retail motor fuel sales sector.[47] This analysis assumes that all retail motor fuels firms operate underground storage tanks (UST systems) at all of their facilities. Based on the distribution of firms across revenue categories published by the 2002 Census, and SBA's revenue thresholds for NAICS 447110 and 447190, approximately 82,500 (98 percent) of these firms meet SBA's definition of a small entity.[48] Approximately 7,520 of these firms report revenues between $0 and $250,000 (the smallest revenue range published by the 2002 Census), with average sales of approximately $149,000.[49]

[46] This section focuses on the retail motor fuel sector. As discussed in Appendix L, EPA's screening assessment indicates that the proposed rule will not have a significant impact on a substantial number of small entities (SISNOSE) across all affected sectors. However, because 80 percent of all UST systems are in the retail motor fuel sector, we refined the screening assessment to further examine the potential impacts of the proposed rule on this sector.

[47] NAICS code 447 is comprised of 447110 (Gasoline stations with convenience stores) and 447190 (Other gasoline stations). To reconcile differing estimates of the number of retail fuel facilities (roughly 162,000 estimated by NPN, and 110,600 estimated by the Census), a 1.46 adjustment factor was applied to the Census data to inflate the number of retail motor fuel facilities to 162,000, distributed proportionately across revenue ranges. This approach preserves the distribution of firms by size according to Census data. As a result of this approach, we estimate that there are a total of approximately 83,900 firms and 481,000 tanks in the retail motor fuel sector.

[48] For 447110, the SBA revenue threshold is $27 million; for 447190, the SBA revenue threshold is $9 million. To ensure that we do not underestimate the number of small entities, we assume that all firms within a revenue bin that contains a specific SBA revenue threshold value are small. For example, if the SBA small business size threshold for a sector is $7 million, we assume that all firms in the revenue range of $5 to $10 million are small.

[49] Note that for simplicity we identify size categories in this document as described by the 2002 Census (e.g., revenues up to $250,000 in 2002 dollars), and identify compliance costs in 2008 dollars. However, in the actual screening analysis, compliance costs have been adjusted from 2008 dollars to 2002 dollars using the GDP implicit deflator. The estimated compliance cost is $300 per system in 2008 dollars, or $255 per tank in 2002

To determine whether firms reporting revenues within a given revenue range would incur costs exceeding one percent or three percent of total revenue, EPA compares the average total compliance cost per firm with the average revenue reported by firms in the revenue range. Based on a compliance cost per system of $300 (in 2008 dollars), and assuming that firms in the smallest revenue range own one facility with three UST systems, we estimate that the 7,520 small firms in the $0-$250,000 revenue range would face total compliance costs of $892 per firm (or $757 in 2002 dollars).[50] Any firm with annual revenues above approximately $75,700 (in 2002 dollars) (i.e., the revenue threshold at which compliance costs would exceed one percent of the firm's revenue) is not expected to experience a significant impact. The average revenue for the 7,520 firms in the $0-$250,000 revenue bin is $149,000, suggesting that on average, firms in this category will not experience significant impacts due to estimated compliance costs.

However, because the lowest range reported by the U.S. Census reflects a distribution of firms with revenues between $0 and $250,000, it is still possible that some of the 7,520 firms in this category may be significantly affected. As mentioned above, EPA also considered estimates of greater than 20 percent of total small firms or 1,000 total small firms affected as indications that a substantial number of small entities may be affected by the proposed rule. While the 7,520 small firms in the lowest revenue range represent only nine percent of all potentially affected small firms, EPA conducted a supplemental analysis that focuses on this group of small firms in an attempt to refine the estimated number of small firms potentially affected by the proposed rule.

5.4.2 Small Business Supplemental Analysis

The purpose of this supplemental analysis is to refine the results of the small business screening analysis. The Census Bureau provided additional data on firms in the lowest revenue bins for NAICS sectors 447110 (gasoline stations with convenience stores) and 447190 (other gasoline stations), identifying the percentage of firms with revenues in three ranges: (1) $0-$50,000; (2) $50,000-$150,000; and (3) $150,000-$250,000.[51] Based on this information, we estimate the number of firms in the retail motor fuel sales sector (i.e., NAICS 447) for these three

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dollars. These costs exclude compliance costs associated with the removal of deferrals for AHFDSs and UST systems with FCTs. AHFDS and FCT systems are primarily owned by the Department of Defense and not by any small entities.

[50] Census data on number of facilities per firm indicate that virtually all firms earning less than $250,000 per year in 2002 had only one facility. We therefore use "firm" and "facility" interchangeably in this context.

[51] The information provided by the U.S. Census Bureau is considered an "unpublished data request." As such, while the Census Bureau provided the data we requested, they also included a letter noting that "these are not 'official data' from the Census Bureau, since they do not meet the Census Bureau's quality standards. These data should be used with extreme caution, realizing the severe quality limitations that may exist." However, given that we do not have another source of information, we use this as the best data available.

revenue groups at approximately 550, 3,120, and 3,860, respectively and use these data to refine our estimate of the number of significantly affected facilities.[52]

Given compliance costs of $892 per firm ($757 in 2002 dollars), any firm making less than $75,700 and $30,000 would be considered significantly affected at the one percent and three percent revenue thresholds, respectively. EPA estimates that 1,348 firms are affected at the one percent threshold, and no firms are affected at the three percent threshold.

The number of firms that will be significantly affected at the one percent threshold exceeds the one thousand-firm substantial effect benchmark by 348 firms. However, it is likely that this proposed rule will have no SISNOSE for three reasons. First, 1,348 firms represent roughly one percent of potentially affected small firms, which is significantly lower than the 20 percent threshold (the other parameter considered in this analysis to determine a "substantial number").[53] Second, although the U.S. Census Bureau reports several hundred facilities with annual revenues less that $100,000, market economics suggest that it would be difficult for a firm that relies solely on gasoline sales to be viable if earning less than $100,000 in annual revenues, suggesting that some of these facilities may not be standalone entities.[54] Finally, at least some of the smallest facilities are likely to have fewer than the three tanks used as a basis for facility-level costs. EPA thus finds that the proposed rule does not appear likely to have a significant economic impact on a substantial number of small businesses.

5.4.3 Impacts to Small Governments

The *1992 Local Government Economic Impact Analysis* provides the best readily-available data on the number of governments owning UST systems, total UST systems owned by governments, average UST systems per government, and UST systems per owning government. The data include size and revenue for both general purpose (i.e., counties, municipalities, and townships) and special district governments (i.e., school districts and other special districts), dividing these governments into four size categories: very large, large, medium and small. The 1992 analysis defines a "very large" government as one that serves over 50,000 people;

[52] The analysis interpolates between the lower and upper bounds of each range and assumes a uniform distribution of facilities within each range. The lowest revenue interval is bounded at $35,750, which EPA obtains from estimating the linear trend between the zero and $250,000 in revenues. The implicit assumption is that no facilities earn less than that level of revenue

[53] EPA estimates a total of roughly 116,000 small firms with USTs across all affected sectors; 1,348 is roughly 1.2 percent of these. In NAICS 447, the 1,348 affected facilities represent 1.6 percent of facilities.

[54] Assuming $2 per gallon in sales, a facility earning $100,000 would sell less than 4,200 gallons of gasoline per month, compared with the monthly industry average throughput of approximately 130,000 gallons. Based on information from a mid-size retail fuel marketer, EPA believes that a facility requires a minimum throughput of approximately 30,000 gallons per month to remain economically viable. In addition, a facility would need $108,000 to generate enough gross profit to cover the direct cost of the wages of one full-time employee at minimum wage ($15,080 at $7.25 per hour and 2080 hours, before accounting for employment taxes). This does not consider other costs, such as electricity, property taxes, or franchise fees. As a result, while the supplemental analysis indicates that 1,348 firms will face costs that exceed the one percent revenue threshold, it is not clear whether all of these facilities represent average motor fuel retailers with full scale operations, three UST systems, and no other income.

therefore, all other entities are considered to be small governmental jurisdictions according to the RFA/SBREFA definition. Using the data from the 1992 analysis, we estimate the number of small governments that own UST systems based on the total universe of UST systems today. See Appendix L for additional detail.

EPA assumes that local governments collectively own four percent of active tanks. This equates to 24,458 tanks, based on the fiscal year 2009 universe of 611,449 tanks.[55] These 24,458 tanks are distributed among all local governments, based upon the percentage of tanks owned in 1992 by local governments in each size category (the average number of tanks owned by a government varies with the size of the government from one tank for small governments to 10 or more tanks for the largest governments).

EPA then calculates, using the 1992 data on government ownership of UST systems, the average compliance cost per government entity. This is done by multiplying the cost per tank by the number of UST systems per government by size category. The average annual revenue for each size of general purpose government is calculated using 2002 Census Data and weighted-average contributions that depend on type of entity (i.e., towns, municipalities, and counties). EPA extrapolates Census data on revenues for 4,128 townships to the 16,504 townships in the country. These weighted averages are combined to obtain annual revenues in 2002 dollars for general purpose governments, then inflated to 2008 dollars. Detailed information at the special district level is not available for later years, so budget expenditures from the 1992 analysis were inflated into 2008 dollars.[56]

To calculate how many small governments face significant compliance costs exceeding one or three percent of their revenues, we compared the average compliance cost per government with the average annual revenues to determine how many exceed either threshold. At a cost of $300 (2008 dollars) per UST system, no small governments are affected under either the one percent or three percent revenue threshold (see **Exhibit 5-3**). Correspondingly, EPA does not find that the proposed rule has any significant impact on a substantial number of small governments.

[55] Estimates of local government UST systems adjusted from 1992 ICF Analysis using The 1987 Census of Governments. See "Economic Impact Analysis of Additional Mechanisms for Local Government Entities to Demonstrate Financial Responsibility for Underground Storage Tanks," December 1992, Exhibit 3-1. Consistent with this analysis, the number of government UST systems is assumed to be one percent of all 2009 UST systems for state and federal governments and four percent of all 2009 UST systems for local governments.

[56] Typically, a RFA/SBREFA screening assessment uses revenues to assess economic impact measures for small governments. In the absence of detailed 2002 data, we use 1992 budget expenditures as a proxy for revenues.

Exhibit 5-3

Compliance Costs To Systems Owned By Governments

Type of Gov't	Size of Gov't[b]	UST Systems Per Owning Gov't[c]	Number of Gov'ts Owning Tanks[d]	2002 Est. Number of Gov'ts[e]	Average Annual Revenue ($2008)[f]	Average Cost Per Gov't ($)[g]	Gov'ts Exceeding 1% of Revenue	Gov'ts Exceeding 3% of Revenue
General Purpose[a]	Very Large	10.2	534	1,461	$316,129,836	$2,597	0	0
	Large	2.5	1,512	4,040	$35,687,794	$637	0	0
	Medium	1.4	1,444	7,822	$8,712,804	$356	0	0
	Small	1.1	1,048	25,644	$1,779,216	$280	0	0
	Subtotal	2.7	4,538	38,967				
Special Purpose	Very Large	3.7	336	934	$431,319,166	$942	0	0
	Large	3.6	1,902	5,340	$52,806,696	$917	0	0
	Medium	1.4	2,648	13,602	$2,533,231	$356	0	0
	Small	1.0	258	28,682	$128,013	$255	0	0
	Subtotal	2.4	5,144	48,558			0	0
Overall	Total	2.5	9,682	87,525			0	0

[a] General Purpose governments include counties, municipalities and townships. Special Purpose governments include public school systems and special districts.
[b] Very large governments are considered to serve more than 50,000 people. Large governments are considered to be those that serve between 10,000 and 50,000 people, medium governments as those that serve between 2,500 and 10,000 people, and small governments as those that serve 2,500 or fewer people. According to RFA/SBREFA, small governmental jurisdictions have populations under 50,000. Therefore, all sizes of governments except for "very large" are considered to be small.
[c] From 1992 *Local Government Impact Analysis* data.
[d] Calculated as number of tanks (adjusted 1992 distribution in each size category to reflect FY 2009 tank numbers) divided by UST systems per owning government (c).
[e] General purpose and Special Purpose total number of entities from 2002 Census of Governments, size distribution extrapolated from 1992 *Local Government Impact Analysis* data.
[f] General purpose estimates from 2002 Census of Governments; Special Purpose estimates inflated from 1992 *Local Government Impact Analysis* data.
[g] Calculated as number of systems per government (c) * estimated cost per tank ($255 in 2002$; $300 in 2008$).

5.5 Screening Analysis to Inform Impacts on Minority and Low-Income Populations

Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations) (59 FR 7629, Feb. 16, 1994) directs federal agencies, to the greatest extent practicable and permitted by law, to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

To inform us about the socioeconomic characteristics of communities potentially affected by the rule, EPA conducted a screening analysis to examine whether there is a statistically significant disparity between socioeconomic characteristics of populations located near UST facilities and those that are not.[57] The results indicate that minority and low-income populations

[57] Note that the affected populations identified in the screening analysis summarized here are simply defined by specific demographics surrounding UST locations. These affected populations are not necessarily equivalent to communities that others have specifically identified as "environmental justice communities."

are slightly more likely to be located near UST facilities. An environmental justice analysis would then require an assessment of whether there would be disproportionate and adverse impacts on these populations. However, because all regulatory options considered in this proposed rule would increase regulatory stringency and reduce the number and size of releases, EPA does not anticipate that the proposed rule will have any disproportionately high and adverse human health or environmental effects on these minority or low income communities, or on any community.

5.5.1 Risk Assessment Population Analysis

To characterize the extent of human health risk reductions anticipated under the proposed regulation, EPA conducted a screening-level analysis of the likely impact of the rule on benzene-related cancer incidence. This analysis used location data for nearly 60,000 U.S. gas stations with UST systems using an ESRI Business Analyst database, and examined populations within a buffer distance of 1,000 feet of facilities with UST systems. The ESRI gas station location data are supplemented with 1,600 UST systems in Indian country, based on location information compiled from EPA regional Indian country databases. After elimination of duplicates, the data set contains 59,945 UST facilities (including 727 in Indian country) (see **Exhibit 5-4**). The total data set represents over 25 percent of the roughly 220,000 active facilities with UST systems.[58]

To estimate populations near sample facilities, the analysis uses a "synthetic population" dataset developed by the Modeling of Infection Diseases Agents Study (MIDAS) to provide population estimates at a finer spatial resolution than Census blocks, while maintaining the accuracy of aggregate demographic data at the Census block group level. For more detail on this method, see Appendix M.

The modeled fate and transport of pollutants under a range of scenarios indicates that the contamination from UST releases do not typically exceed 1,000 feet.[59] The risk assessment considered population density within 1,000 feet of each UST, and incorporated estimates of the use of groundwater for drinking and bathing, along with typical exposure scenarios, to characterize the change in population risk likely to be associated with the reduction of 2,821 releases and groundwater incidents (i.e., the total estimated number of avoided releases and groundwater incidents resulting from the proposed regulations). The risk assessment concluded that the proposed regulations will result in a very small reduction in population risk related to cancer from benzene exposure, based on the estimated number and volume of avoided releases and groundwater incidents.

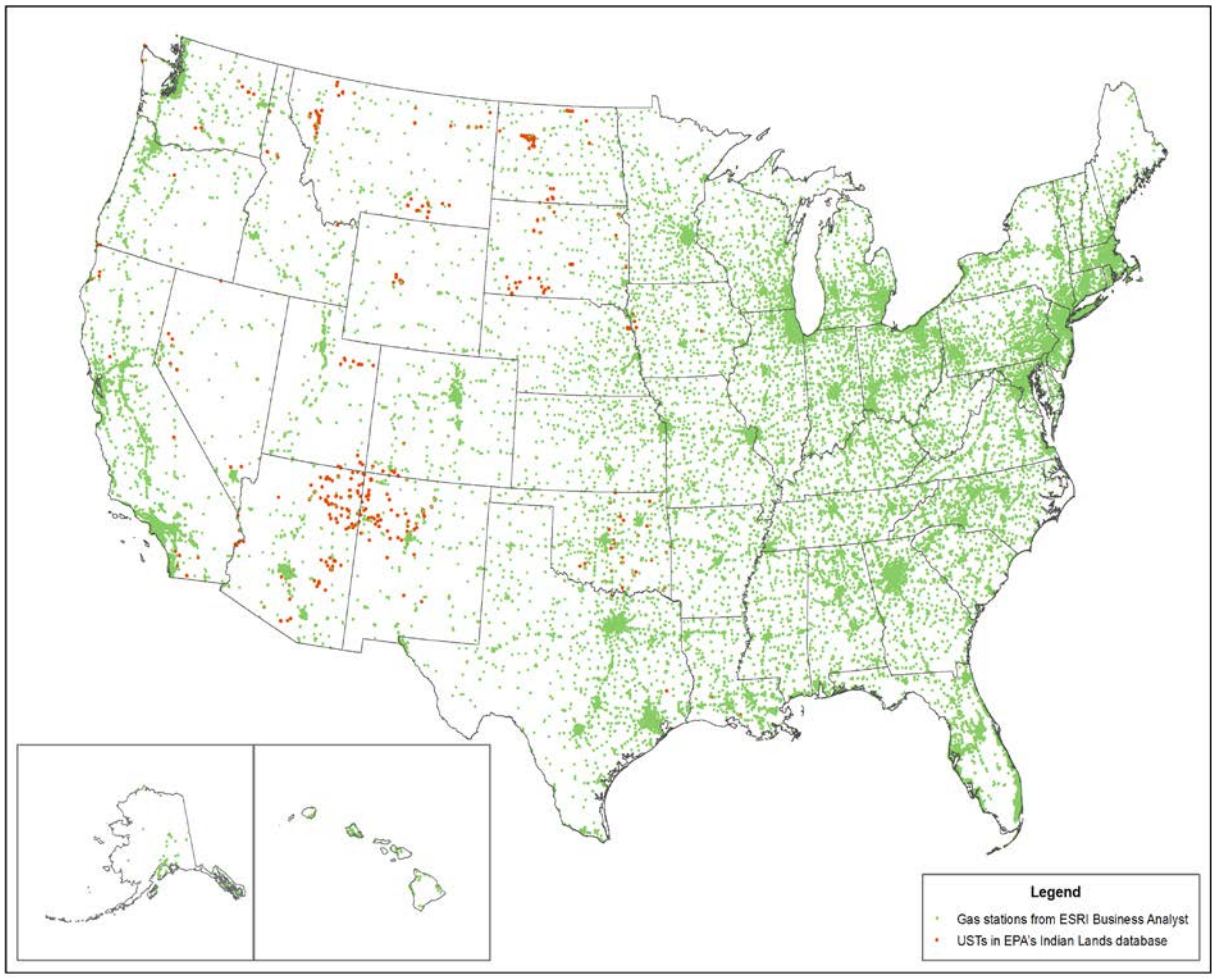
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[58] 2009 Methodology Statement: ESRI Data—Business Locations and Business Summary. ESRI, Redlands, CA. available at http://www.esri.com/library/whitepapers/pdfs/infousa-business-database.pdf. ESRI data are derived from an infoUSA database. The approach for compiling business data for this database is documented on the infoUSA website (http://www.infousa.com), and includes systematic compilation of public record, phone books, business directories, and includes frequent review for new, updated, and relocated businesses. While this methodology does not capture all locations, it is not differentially focused on any specific region or information source, and therefore likely represents a reasonable spatial distribution of facilities.

[59] RTI International, "Risk Analysis to Support Revisions to Underground Storage Tank (UST) Regulations," December 22, 2010.

Exhibit 5-4

UST Location Data Used In Analysis. (See Appendix M for details on data sources.)



5.5.2 Demographic Analysis

The demographic analysis expands on the population data near the 59,945 gas stations in the risk assessment by characterizing demographic features of populations at each site and comparing these populations to larger (county-level) reference populations.[60] Specifically, the analysis examines the following demographic variables: percent in poverty, percent minority, and, as a verification step, percent white alone (the percentage of the population that specified their race as "white" and did not specify "Hispanic"). The analysis also identifies percent under five years old, percent under 18 years old to support the analysis required under Executive Order 13045, "Protection of Children from Environmental Health Risks and Safety Risks" (see section

[60] County-level statistics provide a useful comparative measure for the populations at the local facility level. Given that the area of interest is small (i.e., 1000 feet of a facility), the county-level provides an appropriate scale for comparison.

5.6 below). The analysis considers the significance of the "difference in means" and "difference in median" values for each census parameter and each community. That is, the analysis identifies the differences between mean and median concentrations of each demographic group for the affected and reference populations at each of the 59,945 sites, and examines whether the differences identified across all sites are statistically different from what would be expected in a random distribution.[61]

The analysis considers the differences in demographics in two ways: unweighted (each site is given equal weight) and population weighted (results are weighted by affected persons, giving sites with larger populations more weight). A statistically significant positive difference indicates a greater percentage of target demographic in the affected population than in the larger reference population. A statistically significant negative difference indicates a smaller percentage of the target demographic in the affected population. **Exhibit 5-5** provides the unweighted results of the analysis and generally finds that minority and low-income demographics constitute a slightly larger proportion of the population surrounding UST facilities. For example, poor populations account for 13.3 percent of the population near an UST, compared with 12.2 percent of the reference (county) population. As **Exhibit 5-6** shows, although the difference is small, it is also highly statistically significant (with a p-value below .001), which suggests that the difference between the values is not a random occurrence. **Exhibits 5-7 and 5-8** summarize the results of the population-weighted analysis, and generally find slightly larger (but still small) effects.

[61] See Appendix M for the complete demographic screening analysis.

Exhibit 5-5

Summary Results For Census Parameters – Unweighted

Census Parameter	1000 ft Buffer around Facility		County where Facility is Located		Difference			
							95% Confidence Interval of Mean Difference	
	Mean	Median	Mean	Median	Mean	Median	Lower Bound	Upper Bound
Percent White Alone	70.3	81.3	70.8	74.8	-0.44	1.29	-0.61	-0.27
Percent Under Age 5	6.7	6.5	6.7	6.7	-0.05	-0.12	-0.068	-0.032
Percent Under Age 18	24.7	24.9	25.6	25.5	-0.84	-0.54	-0.99	-0.68
Percent in Poverty	13.3	10.3	12.2	11.5	1.1	-0.64	0.99	1.13
Percent Minority	24.0	14.6	23.8	20.9	0.21	-1.48	0.06	0.36

Note: Difference summary statistics (mean and median) were calculated from the distribution of difference values (i.e., one result per facility, yielding a distribution of about 60,000 results). Mean values reflect the entire distribution, whereas the median values are based only on the 50^{th} percentile result. For this reason, the mean difference results could also be calculated simply by subtracting the reference community mean from the potentially affected community mean (e.g., for mean percent poverty 13.3 – 12.2 = 1.1). In contrast, the median difference values do not necessarily match values derived by subtracting the median values from the underlying distributions (e.g., for median percent poverty 10.3 – 11.5 ≠ -.64). Although the primary results of the analysis are based on mean values, median results are provided for completeness and as an alternative indicator of the distributions' central tendency.

Exhibit 5-6

Standard Error, T Test, And Risk Ratio Results – Unweighted

	1000 ft Buffer around Facility	County where Facility is Located	Difference				
	SE of Mean	SE of Mean	SE of Mean	T Statistic	p-value	Ratio	SE of Ratio
Percent White Alone	0.120	0.088	0.085	-5.23	<0.001	0.99	0.001
Percent Under Age 5	0.010	0.004	0.009	-5.18	<0.001	0.99	0.001
Percent Under Age 18	0.104	0.071	0.079	-10.59	<0.001	0.97	0.001
Percent in Poverty	0.045	0.023	0.038	27.66	<0.001	1.09	0.003
Percent Minority	0.104	0.071	0.079	2.71	0.0067	1.01	0.003

Note: There are >56,033 degrees of freedom for this test (i.e. number of facilities). Note that the total number of facilities in the dataset (59,945) differs from the degrees of freedom, because a fraction of facilities have no people living within the 1000 foot buffer.

Exhibit 5-7

Summary Results For Census Parameters – Weighted By Population

Census Parameter	1000 ft Buffer around Facility		County where Facility is Located		Difference			
							95% Confidence Interval of Mean Difference	
	Mean	Median	Mean	Median	Mean	Median	Lower Bound	Upper Bound
Percent White Alone	53.88	59.63	58.79	57.70	-4.61	-2.55	-5.0	-4.2
Percent Under Age 5	6.91	6.78	6.80	6.85	0.11	0.04	0.073	0.14
Percent Under Age 18	24.74	24.91	25.36	25.53	-0.62	-1.57	-0.73	-0.50
Percent in Poverty	16.22	13.34	13.33	12.83	2.89	0.96	2.7	3.1
Percent Minority	36.61	29.54	33.16	31.92	3.45	0.58	3.1	3.8

Note: Difference summary statistics (mean and median) were calculated from the distribution of difference values (i.e., one result per facility, yielding a distribution of about 60,000 results). Mean values reflect the entire distribution, whereas the median values are based only on the 50th percentile result. For this reason, the mean difference results could also be calculated simply by subtracting the reference community mean from the potentially affected community mean (e.g., for mean percent poverty 16.2 – 13.3 = 2.9). In contrast, the median difference values do not necessarily match values derived by subtracting the median values from the underlying distributions (e.g., for median percent poverty 13.3 – 12.8 ≠ -0.96). Although the primary results of the analysis are based on mean values, median results are provided for completeness and as an alternative indicator of the distributions' central tendency.

Exhibit 5-8

Standard Error, T Test, And Risk Ratio Results – Weighted By Population

	1000 ft Buffer around Facility	County where Facility is Located	Difference				
	SE of Mean	SE of Mean	SE of Mean	T Statistic	p-value	Ratio	SE of Ratio
Percent White Alone	0.288	0.193	0.205	-22.48	<0.001	0.92	0.0035
Percent Under Age 5	0.020	0.008	0.017	6.24	<0.001	1.02	0.0026
Percent Under Age 18	0.065	0.033	0.058	-10.62	<0.001	0.98	0.0023
Percent in Poverty	0.108	0.063	0.085	34.02	<0.001	1.22	0.0064
Percent Minority	0.255	0.165	0.191	18.05	<0.001	1.10	0.0058

Note: There are >56,033 degrees of freedom for this test (i.e. number of facilities). Note that the total number of facilities in the dataset (59,945) differs from the degrees of freedom, because a fraction of facilities have no people living within the 1000 foot buffer.

Overall, the demographic analysis identifies a small but statistically significant difference between minority and low-income populations near UST systems and in the reference communities. Minority and poverty-level demographics are present at greater percentages in the vicinity of UST facilities. In contrast, a small *negative* relationship suggests that "white alone"

populations are less likely to be near UST systems, i.e., minority populations are marginally more likely to reside near UST facilities. Moreover, while the unweighted analysis does not find clear patterns related to children under 18 and children under five, the population-weighted analysis finds that the distribution of all target demographics around UST facilities reflects small but significant differences from county-level populations. The population-weighted results show greater differences, suggesting that facilities in higher population areas tend to have more pronounced disparities between local, potentially affected communities and reference (county-level) communities. These differences, while small, are statistically significant with p-values less than 0.01 in all cases. This result implies that any risk reductions associated with the proposed rule will occur in the context of a baseline condition in which minority and low-income populations are disproportionately located near USTs.

5.5.3 Summary and Limitations of the Analysis

This section summarizes a screening assessment and does not present a complete environmental justice analysis. The assessment is limited by the fact that demographic data from the U.S. Census are at the block group level, and are not as precise as the spatial distribution of population. As a result, if the demographic distribution of populations within block groups is uneven, the block group-level data may not accurately characterize populations living nearest to UST locations. The large sample of 59,945 sites, however, reduces the potential that this uncertainty could skew the results of the analysis.

Given the results of the screening analysis, because all regulatory options considered in this proposed rule would increase regulatory stringency and reduce the number and size of releases, EPA does not anticipate the proposed rule to have any disproportionately high and adverse human health or environmental effects on these minority or low income communities, or on any community. Since the proposed rule is not anticipated to create any new adverse human health or environmental impacts, EPA did not conduct a complete environmental justice analysis.

5.6 Children's Health Protection Analysis

Executive Order 13045, "Protection of Children from Environmental Health Risks and Safety Risks" (62 FR 19885, April 23, 1997), applies to any rule that: (1) is determined to be "economically significant" as defined under E.O. 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

This action may be subject to Executive Order 13045 because it is economically significant as defined in Executive Order 12866. EPA's screening-level risk assessment examines potential impacts to groundwater and subsequent chemical transport, exposure and risk. While the risk assessment did not specifically measure exposure to children, the general

exposure scenarios reflect four exposure pathways that have the most significant potential for human health impacts. These are:

- ingestion of chemicals in groundwater that have migrated from the source area to residential drinking water wells
- inhalation of volatile chemicals when showering with contaminated groundwater
- dermal contact with chemicals while bathing or showering with contaminated groundwater
- inhalation of vapors that may migrate upward from contaminated groundwater into overlying buildings

Adults and children can potentially be exposed through all four exposure pathways considered. For adults, inhalation of vapors while showering is the most significant adult exposure pathway; for children, ingestion is the most significant pathway, because children are assumed to take baths and are therefore not exposed via shower vapor inhalation. As a result of the longer exposure from showering, adults are the more sensitive receptor for cancer effects compared to children, particularly those under five who are assumed to take more baths and fewer showers.[62]

While the screening level risk assessment is limited in that it only examines benzene impacts, the proposed rule would likely reduce other contaminant exposures to children in a similar pattern, and would not create significant adverse impacts on children's health.

The screening-level demographic analysis described in section 5.5 finds a statistically significant result that children under the age of 18 and children under the age of five are slightly *less* likely to be found in the vicinity of UST facilities. This suggests that the impacts of the proposed rule will not have a disproportionate impact on children's health. Moreover, because all regulatory options proposed today would increase regulatory stringency and reduce the number and size of releases, EPA does not expect the proposed rule to have any disproportionate adverse impact on children.

[62] United States Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry. "Toxicological Profile for Polycyclic Aromatic Hydrocarbons." August 1995.

Chapter 6. Other Statutory and Executive Order Analyses

As required by applicable statutes and executive orders, this chapter summarizes our analysis of equity considerations and other regulatory concerns associated with the proposed rule. This chapter assesses potential impacts, with respect to the following issues:

- **Regulatory planning and review**: requires examination and quantification of costs and benefits of regulating with and without the proposed rule.
- **Unfunded mandates:** examines the implications of the proposed rule with respect to unfunded mandates.
- **Federalism:** considers potential issues related to state sovereignty.
- **Tribal governments:** extends the discussion of federal unfunded mandates to include impacts on Native American tribal governments and their communities.
- **Joint impacts of rules:** discusses how other rules, together with the proposed rule, will likely affect the universe of facilities regulated by the proposed rule.

6.1 Regulatory Planning and Review

Under Executive Order 12866 [58 FR 51735 (October 4, 1993)], EPA, in conjunction with the Office of Management and Budget's (OMB's) Office of Information and Regulatory Affairs (OIRA), must determine whether a regulatory action is "significant" and therefore subject to OMB review and the full requirements of the Executive Order. The Order defines "significant regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, the Agency has determined that this proposed rule is an economically significant regulatory action because it may have an annual

effect on the economy of $100 million or more, as defined under part 3(f)(1) of the Order. Findings of the regulatory cost analysis (Chapter 3) indicate that the rule, as proposed, is projected to result in aggregate annual compliance costs of approximately $210 million under the Preferred Option, $520 million under Alternative 1, and $130 million under Alternative 2. Separately, this analysis concludes that the proposed rule is expected to have cost savings related to avoided costs of $300 million to $740 million under the Preferred Option, $310 million to $770 million under Alternative 1, and $110 million to $590 million under Alternative 2, but for the purposes of addressing Executive Order 12866, these cost savings are considered to be separate impacts rather than direct reductions in the total cost of the rule.

6.2 Unfunded Mandates Analysis

Signed into law on March 22, 1995, the Unfunded Mandates Reform Act (UMRA) calls on all federal agencies to provide a statement supporting the need to issue any regulation containing an unfunded federal mandate and describing prior consultation with representatives of affected state, local, and tribal governments.

The proposed rule is subject to the requirements of sections 202 and 205 of UMRA. In general, a rule is subject to the requirements of these sections if it contains "Federal mandates" that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $100 million or more in any one year. The proposed rule results in approximately $180 million of costs to the private sector under the Preferred Option, $350 million under Alternative 1, and $120 million under Alternative 2 in expenditures for the private sector and is thus subject to the following requirements of these sections.[1]

- An identification of the provision of Federal law under which the proposed rule is being promulgated.
- A qualitative and quantitative assessment of the anticipated costs and benefits of the Federal mandate;
    - Costs and benefits to State, local, and tribal governments and the private sector
    - Effect on health, safety, and the natural environment
    - Analysis of extent to which such costs may be paid with Federal financial assistance (or otherwise paid for by the Federal government)
    - Analysis of the extent to which there are available Federal resources to carry out this mandate
- Estimates of future compliance costs with the mandate.

[1] Calculated as total compliance costs for conventional UST systems and EGTs (including costs to read regulations), documented in Exhibit 3-9, net of local and state government compliance costs identified in Exhibit 6-2 below.

- Estimates of disproportionate budgetary effects on any type of government or segment of the private sector.

- Estimates of the effect on the national economy (if relevant and possible).

Exhibit 6-1 provides references for the analyses that EPA has performed that respond to these requirements.

Exhibit 6-1

Location Of Analyses Responding To UMRA Requirements

Requirement	Location
Identification of provision of Federal law under which proposed rule is being promulgated	Chapter 1 of this document
Assessment of costs and benefits to State, local, and tribal governments and the private sector	Chapters 3 and 4 of this document
Assessment of the effect on health, safety, and the natural environment	Chapter 4 of this document
Assessment of the extent to which such costs may be paid with Federal financial assistance	Chapter 3 of this document; no Federal assistance is anticipated
Assessment of the extent to which there are available Federal resources to carry out this mandate	Chapter 3 of this document; no Federal resources are anticipated
Estimates of future compliance costs	Chapter 3 of this document
Estimates of disproportionate budgetary effects on any type of government or private sector segment	Chapter 5 of this document
Estimates of the effect on the national economy	Chapters 3 and 5 of this document

6.3 Federalism Analysis

Executive Order 13132, entitled "Federalism" (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure "meaningful and timely input by state and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" is defined in the Executive Order to include regulations that have "substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government." EPA typically considers a policy to have federalism implications if it results in the expenditure by State and/or local governments in the aggregate of $25 million or more in any one year.

Under Executive Order 13132, EPA may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or EPA consults with State and local officials early in the process of developing the regulation.

Exhibit 6-2 summarizes annual government costs. Direct compliance costs for local and State governments reflect average costs per UST system; the analysis assumes that states collectively own one percent of total UST systems (6,114), and local governments own 24,458 UST systems (four percent).

In addition, under the proposed rule, each state will incur labor costs for reading the new regulations, applying for State Program Approval (SPA), and processing one-time notification of existence for EGTs, AHFDSs, and FCTs. States that do not already require notification of UST ownership change will also incur costs to process and review all ownership change notifications of UST system ownership change.

In this scenario, total costs to all affected state and local governments (including direct compliance costs, notification costs, and state program costs) are approximately $9.3 million under the Preferred Option, $19 million under Alternative 1, and $6.5 million under Alternative 2 in 2008 dollars; this is not considered to be a substantial compliance cost under federalism requirements.

Exhibit 6-2

Summary Of Annual State And Local Government Costs[b]

Element	Preferred Option ($ millions)	Alternative 1 ($ millions)	Alternative 2 ($ millions)
Local Compliance Costs[a]	$7.3	$15.0	$5.0
State Compliance Costs[a]	$1.8	$3.7	$1.3
State Government Administrative Costs	$0.2	$0.2	$0.2
Total State and Local Governments Costs	**$9.3**	**$19.0**	**$6.5**

[a] State and local government compliance costs are included in the total compliance costs presented in Exhibit 3-9.
[b] Cost estimates were derived using a seven percent discount rate.

6.4 Tribal Governments Analysis

Executive Order 13175, entitled "Consultation and Coordination with Indian Tribal Governments" (65 FR 67249, November 9, 2000), requires EPA to develop an accountable process to ensure "meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications." EPA has concluded that this action will have tribal implications to the extent that tribally-owned entities with UST systems on Indian country would be affected. However, it will neither impose substantial direct compliance costs on tribal governments, nor preempt Tribal law.

The data sources for the Indian country analysis are the same as those used in the small business analysis. Based on a review of information available about the types of business entities in Indian country, it is assumed that UST systems in Indian country represent a subset of the rest of the universe and are distributed similarly across the same sectors.[2] The total number of UST systems in Indian country is distributed proportionally among the NAICS sectors.

The cost per UST system is higher in Indian country, as the universe is smaller, and all UST systems are assumed to incur costs associated with all the requirements of the proposed rule. At a 2008 cost of $795 per UST system, the total cost for UST systems in Indian country is

[2] For more detail, see Industrial Economics, Inc., "Detailed Assessment of UST Universe by Tank Purpose and Design," WA 1-25, Task 6, March 24, 2009. Note that because tribal ownership and operation is defined differently than other types of government ownership, no attempts are made to isolate or identify "government" UST systems in Indian country.

approximately $2.1 million. EPA data indicates that 35 percent of all UST systems in Indian country are tribally-owned; correspondingly, the total cost to owners and operators of tribally-owned UST systems is $0.7 million.

EPA consulted with tribal officials early in the process of developing this regulation to permit them to have meaningful and timely input into its development. EPA began its consultation with tribes on possible changes to the UST regulations shortly after the passage of the Energy Policy Act of 2005 (EPAct). EPAct directed EPA to coordinate with tribes to develop and implement an UST program strategy in Indian country to supplement the program's existing approach. EPA and the tribes worked collaboratively to develop this tribal strategy.

EPAct also included key provisions that apply to states receiving federal funding but the Act did not specify Indian country. Nonetheless, EPA's goal is to implement the objectives of these provisions in Indian country as an important step in achieving more consistent program results in release prevention. Both EPA and tribes recognize the importance of having policies that can help to ensure parity in program implementation between states and in Indian country. EPA committed to the tribes that we would fully implement the new provisions of the EPAct, and the proposed regulations will realize that commitment.

In addition to our early consultation with the tribes, EPA also reached out again to the tribes as we started the official regulatory process and throughout the development of these proposed regulations. EPA sent letters to leaders of over 500 tribes as well as to tribal regulatory staff to invite their participation in the development of the regulations. EPA heard from both tribal officials who work as regulators as well as representatives of owners and operators of UST systems in Indian country. The tribal regulators raised concerns about ensuring parity of environmental protection between states and Indian country.

The proposed changes to the UST regulations are needed to ensure parity between sites in states and in Indian country. These regulations are also needed to ensure equipment is not just installed but is working properly to protect the environment from potential releases.

6.5 Joint Impacts of Rules

Executive Order 12866 requires that the Agency review whether the proposed rule creates "a serious inconsistency" or otherwise interferes "with an action taken or planned by another agency." We do not believe that the proposed rule creates a serious inconsistency or interferes with any other actions planned or undertaken by other agencies. The following are the existing regulations that currently affect UST systems:

- **State UST Regulations:** A number of states have existing UST regulations that are more demanding than existing regulations under 40 CFR Part 280. To the extent that these policies are at least as demanding as the regulations under consideration, the systems in these states may already be in partial or full compliance with portions of the proposed rule. Chapter 2 identifies the number of UST systems in states with existing (baseline) regulations; cost estimates in Chapter 3 reflect the state regulatory programs that exist in the baseline.

- **SPCC Regulations:** Currently, a subset of UST systems in the universe is regulated by Spill Prevention, Control, and Countermeasure rules (SPCC); these include emergency generator tanks, airport hydrant fuel distribution systems and UST systems with field-constructed tanks. Specifically, SPCC rules in 40 CFR Part 112 apply to above-ground containers and completely buried tanks that are not otherwise covered by the regulations of 40 CFR Part 280. SPCC rules do not specify particular leak detection protocols, but require that plans conform to industry standards, which can often be consistent with the requirements of the proposed rule. To the extent that the requirements imposed on these UST systems via the proposed rule are more or less stringent than the SPCC rules currently governing them, the proposed rule may cause an increase or a reduction in overall inspection and monitoring requirements (and costs) for these UST systems. To account for this, EPA has generated baseline assumptions for these systems using information from the Department of Defense (the owner of the majority of all FCTs and AHFDSs). EGTs are assumed to incur all incremental costs beyond state regulatory baseline costs; to the extent that these systems are regulated under SPCC, this may overstate costs.

Chapter 7. Comparison of Costs, Benefits, and Other Impacts

This chapter provides several analyses that compare the costs and beneficial impacts of the proposed rule. Cost-benefit analysis is a central feature of virtually all economic assessments and evaluates the economic efficiency of environmental policies by measuring their costs and benefits, and hence their net impacts on society. From an economic viewpoint, the proposed rule would enhance economic efficiency if beneficial impacts exceed costs.

A traditional cost-benefit comparison weighs society's willingness to pay for the benefits of a regulation against the opportunity costs of the rule. Analyses of this type typically do not consider distributional issues, although they can be adapted to do so. Adherence to a strict benefit-cost approach provides an incomplete assessment of the effects of this proposed rule for two reasons:

- The majority of positive effects from new requirements occur as avoided remediation costs, not social benefits such as improved water quality. Monetizable social benefits occur only in the form of avoided cancer cases and constitute only a very small part of overall effects. Nevertheless, as discussed in Chapter 4, avoided costs provide a reasonable measure of the positive effects of the proposed rule.

- A key effect of the proposed rule is to reallocate costs from the public to responsible parties. This is likely to improve behavioral incentives, as the parties most likely to cause releases will also be responsible for preventing them. As we discussed in Chapter 5, savings to state financial assurance funds could exceed $150 million per year.

While this chapter presents a comparison of costs and benefits, the principal comparison is between avoided remediation costs and the cost of the proposed rule. This chapter uses two approaches to assess the effectiveness of the proposed requirements. First, we compare the compliance costs of the proposed rule with its total monetized avoided costs and benefits. We then consider cost-effectiveness measures which provide estimates of expenditures per unit reduction of releases and estimates of the cost per unit of benefit achieved by the proposed rule.

Cost-benefit and cost-effectiveness analyses, however, should not be the only tools used in the establishment of any final regulatory action. The proposed rule is expected to provide other benefits that are not expressed in monetary terms. When these benefits are taken into account, along with equity-enhancing effects such as reduction in demand for publicly-funded remediation, the benefit-cost comparison becomes more complex. Consequently, the final regulatory decision becomes a policy judgment that takes into account efficiency as well as equity concerns.

In addition, the selection of a discount rate for estimating the present value of future costs and benefits is a complex issue. To reflect a range of possible future costs and benefits, we present two estimates of discounted costs and benefits; one based on a seven percent discount rate, and one based on a three percent discount rate.

7.1 Cost Benefit Comparison

In this section, we compare the total costs of the rule with its total monetized and non-monetized benefits and avoided costs. The total costs and monetized avoided costs of the proposed rule are summarized in **Exhibit 7-1**. The costs in the exhibit represent the compliance costs of the proposed rule, including state government administrative costs.

The exhibit also shows the social benefits of the proposed requirements that are not captured in avoided costs. Monetized social benefits are calculated only for avoided cancer risks related to benzene due to the difficulty in measuring other types of benefits. Avoided cancer risks are estimated to be minimal, as they address only the uncontrolled human health risks that occur before discovery and remediation of a release under existing programs. EPA estimates less than $5,000 in measurable, monetized social benefits per year, regardless of the option. However, as **Exhibit 7-1** notes and discussed in Chapter 4, a number of benefits could not be monetized, including groundwater protection, mitigation and avoidance of acute events, ecological benefits, and non-benzene human health risks.

Exhibit 7-1 demonstrates that the proposed rule may avoid more costs than it creates, potentially generating cost savings to society. EPA estimates that the Preferred Option could generate $90 million to $530 million per year in savings to society. Alternative 1 could have a net benefit of $250 million to a net cost of $210 million, while Alternative 2 could generate savings of $460 million to costs of $20 million.

Exhibit 7-1

Comparison Of Annual Compliance Costs, Cost Savings And Monetized Benefits[f,g]

	Preferred Option (2008$ millions)	Alternative 1 (2008$ millions)	Alternative 2 (2008$ millions)
Annual Monetized Benefits			
Avoided cancer risks[a,d]	$0.001 - $0.005	$0.002 - $0.005	$0.001 - $0.003
Annual Avoided Costs[d]			
Releases and groundwater incidents	$300 - $700	$300 - $740	$110 - $570
Vapor intrusion	$0.4 - $26	$0.5 - $28	$0.2 - $19
Product loss	$2.0 - $7.2	$2.6 - $7.6	$0.4 - $5.3
Annual Compliance Costs			
Conventional UST systems[b]	$180	$360	$120
Emergency generator tanks (EGTs)	$2	$2	$2
Airport hydrant fuels distribution systems (AHFDSs)	$18	$120	N/A
UST systems with field-constructed tanks (FCTs)	$5	$33	N/A
Cost to owners/operators to read regulations	$5	$5	$5
State government administrative costs[c]	$0.2	$0.2	$0.2
Total Annual Benefits and Avoided Costs	**$300 - $740**	**$310 - $770**	**$110 - $590**
Total Annual Compliance Costs[g]	**$210**	**$520**	**$130**
Net Cost (Savings) to Society[g] [Total Compliance Costs *less* Total Benefits and Avoided Costs]	**($530) - ($90)**	**($250) - $210**	**($460) - $20**
Nonmonetized Benefits[e]			
Groundwater protected (billion gallons)	110 - 350	120 - 370	41 - 250
Acute events and large-scale releases (e.g., releases from AHFDSs and FCTs)	Not estimated	Not estimated	Not estimated
Ecological benefits	Not estimated	Not estimated	Not estimated
Non-benzene human health risks	Not estimated	Not estimated	Not estimated

[a] The pathway assessed to evaluate avoided cancer risk is benzene exposure through contaminated groundwater.

[b] Conventional UST systems include all systems that are not AHFDSs, FCTs, or EGTs.

[c] The costs for UST systems directly owned or operated by local, state, and federal government entities are included in the estimates of compliance costs within the other categories. Costs shown here reflect the administrative costs for state governments to read the regulation, apply for state program approval, process notifications of ownership changes, and process one-time notifications of EGT, AHFDS, and FCT existence.

[d] Avoided cancer risks and avoided costs are separate and additive (i.e., these estimates do not overlap). Avoided cancer risks are the benefits associated with reducing cancer cases prior to discovery of the release. Avoided remediation costs from releases and groundwater incidents are the costs related to site remediation. Avoided vapor intrusion costs include additional avoided costs associated with the remediation of vapor intrusion cases; the RIA does not address human health risk associated with vapor intrusion. Avoided product loss costs are also separate and additive.

[e] Due to data and resource constraints, EPA is unable to monetize some of the positive impacts of the proposed rule. Chapter 4 of this document provides a qualitative discussion of these benefits.

[f] Totals may not add up due to rounding. Cost estimates were derived using a seven percent discount rate.

[g] Compliance costs include direct compliance costs and state oversight costs. For this regulatory impact analysis, direct compliance costs and state oversight costs provide a reasonable proxy to assess the proposed rule's social costs. See Chapter 3.1 for further discussion.

7.1.1 Cost-Benefit Comparison under the Alternative Baseline Scenario

Exhibit 7-2 depicts the comparison of costs and benefits of the proposed rule in the alternative baseline scenario, where the universes of releases and UST systems decline over time in accordance with historical trends. In this alternative baseline, the universe of releases is smaller relative to the original baseline than the universe of UST systems; however, **Exhibit 7-2** demonstrates that even in this case, the proposed rule may avoid more costs than it creates, potentially generating cost savings to society. EPA estimates that the Preferred Option in the alternative baseline could generate between $240 million per year in savings to $20 million per year in costs to society. Alternative 1 could have a net cost of $50 million to $330 million, while Alternative 2 could generate savings of $240 million to costs of $56 million.

Exhibit 7-2

Comparison Of Annual Compliance Costs, Cost Savings And Monetized Benefits Using an Alternative Baseline[f,g]

	Preferred Option (2008$ millions)	**Alternative 1 (2008$ millions)**	**Alternative 2 (2008$ millions)**
Annual Monetized Benefits			
Avoided cancer risks[a,d]	$0.001 - $0.003	$0.001 - $0.003	$0.0003 - $0.002
Annual Avoided Costs[d]			
Releases and groundwater incidents	$180 - $420	$180 - $440	$64 - $340
Vapor intrusion	$0.3 - $16	$0.3 - $17	$0.1 - $11
Product loss	$1.2 - $4.3	$1.6 - $4.6	$0.2 - $3.2
Annual Compliance Costs			
Conventional UST systems[b]	$170	$350	$110
Emergency generator tanks (EGT)	$2.2	$2.2	$2.1
Airport hydrant fuels distribution systems (AHFDSs)	$18	$120	N/A
UST systems with field-constructed tanks (FCTs)	$4.6	$33	N/A
Cost to owners/operators to read regulations	$5.1	$5.1	$5.1
State government administrative costs[c]	$0.2	$0.2	$0.2
Total Annual Benefits and Avoided Costs	**$180 - $440**	**$180 - $460**	**$64 - $360**
Total Annual Compliance Costs[g]	**$200**	**$510**	**$120**
Net Cost (Savings) to Society[g] [Total Compliance Costs *less* Total Benefits and Avoided Costs]	**($240) - $20**	**$50 - $330**	**($240) - $56**
Nonmonetized Benefits[e]			
Groundwater protected (billion gallons)	65 - 210	71 - 220	25 - 150
Acute events and large-scale releases (e.g., releases from AHFDSs and FCTs)	Not estimated	Not estimated	Not estimated
Ecological benefits	Not estimated	Not estimated	Not estimated
Non-benzene human health risks	Not estimated	Not estimated	Not estimated

[a] The pathway assessed to evaluate avoided cancer risk is benzene exposure through contaminated groundwater.
[b] Conventional UST systems include all systems that are not AHFDSs, FCTs, or EGTs.
[c] The costs for UST systems directly owned or operated by local, state, and federal government entities are included in the estimates of compliance costs within the other categories. Costs shown here reflect the administrative costs for state governments to read the regulation, apply for state program approval, process notifications of ownership changes, and process one-time notifications of EGT, AHFDS, and FCT existence.
[d] Avoided cancer risks and avoided costs are separate and additive (i.e., these estimates do not overlap). Avoided cancer risks are the benefits associated with reducing cancer cases prior to discovery of the release. Avoided remediation costs from releases and groundwater

incidents are the costs related to site remediation. Avoided vapor intrusion costs include additional avoided costs associated with the remediation of vapor intrusion cases; the RIA does not address human health risk associated with vapor intrusion. Avoided product loss costs are also separate and additive.
[e] Due to data and resource constraints, EPA is unable to monetize some of the positive impacts of the proposed rule. Chapter 4 of this document provides a qualitative discussion of these benefits.
[f] Totals may not add up due to rounding. Cost estimates were derived using a seven percent discount rate.
[g] Compliance costs include direct compliance costs and state oversight costs. For this regulatory impact analysis, direct compliance costs and state oversight costs provide a reasonable proxy to assess the proposed rule's social costs. See Chapter 3.1 for further discussion.

7.2 Cost-Effectiveness Analysis

We measure cost-effectiveness by considering the expected cost per release avoided. This cost-effectiveness measure is useful for comparing the resources required to eliminate a single release under each alternative. For the purpose of this analysis, we consider avoided releases to be both releases altogether avoided and groundwater incidents averted due to the proposed rule. As presented in **Exhibit 7-3**, we find that the cost per release avoided is approximately $38,000 to $120,000 under the Preferred Option, compared with $90,000 to $290,000 under Alternative 1 and $33,000 to $200,000 under Alternative 2. This compares favorably with average release remediation costs presented in **Exhibit 4-2** in Chapter 4, which range between $92,000 and $194,000. This regulatory impact analysis suggests that, in addition to improving the alignment of incentives, release prevention is likely to be less costly than release remediation under the Preferred Option and Alternative 2 and in some instances under Alternative 1.

Exhibit 7-3

Cost-Effectiveness: Number Of Avoided Releases And Groundwater Incidents[a]

	Preferred Option	Alternative 1	Alternative 2
Avoided releases and groundwater incidents	1,680 - 5,370	1,820 - 5,780	630 - 3,860
Compliance cost[b] ($ million)	$210	$520	$130
Cost per release avoided ($ million)	**$0.038 - $0.12**	**$0.09 - $0.29**	**$0.033 - $0.20**

[a] Cost estimates were derived using a seven percent discount rate.
[b] Compliance cost includes direct compliance costs and state oversight costs. For this regulatory impact analysis, direct compliance costs and state oversight costs provide a reasonable proxy to assess the proposed rule's social costs. See Chapter 3.1 for further discussion.

7.3 Costs and Beneficial Effects Under Alternative Discount Rates

The selection of the rate at which to discount future costs and benefits is complex. To assess the sensitivity of our results to our choice of discount rate, **Exhibit 7-4** presents a summary of total compliance costs and avoided remediation costs considering alternate discount rates of three percent and zero percent (i.e., no discounting). Costs change little because a reduction in interest rates both reduces time value of money (TVM) costs and increases costs that have a delay before implementation.[1,2] The net result of a change from a discount rate of seven

[1] When amortizing a value over time, if all other factors are held constant, a reduction in the rate of interest decreases the annual payment.

[2] The rate of discount enters into our calculation of time value of money costs. Higher discount rates increase these costs, while lower discount rates cause them to decrease. See Appendix D for details.

percent to a discount rate of zero percent is an overall increase in the cost of the rule of less than $10 million per year, indicating that TVM and delayed-implementation cost effects essentially offset each other.

Discount rates are also involved in our estimate of annual avoided costs. In particular, we use them only to obtain constant annual avoided costs for those requirements in which the affected universe grows over time and calculate the delay until positive impacts accrue.[3] Here, the effect of lowering interest rate is more significant, as all requirements are discounted by at least one period. As **Exhibit 7-4** shows, a change in the rate of discount from seven percent to zero percent increases avoided costs from a range of $300 million - $740 million to $340 million - $810 million. This increase is largely due to the fact that we discount all avoided costs by at least one year, as outlined in **Exhibit 1-2**.

We conclude that, while a reduction in the discount rate leaves annual compliance costs essentially unchanged at $210 million, avoided costs increase from by $40 million to $70 million per year. As such, annual savings to society would increase from a range of $90 million - $530 million to $130 million - $600 million if EPA relies on a zero rate of discount.

Exhibit 7-4

Compliance Costs And Beneficial Impacts Under Alternative Discount Rates[d,e]

Avoided Cost	**Preferred Option 7 percent discount rate ($ millions)**	**Preferred Option 3 percent discount rate ($ millions)**	**Preferred Option Undiscounted ($ millions)**
Annual Monetized Benefits			
Avoided cancer risks[a]	$0.001 - $0.005	$0.001 - $0.005	$0.002 - $0.005
Annual Positive Impacts (Avoided Costs)			
Releases and groundwater incidents	$300 - $700	$320 - $740	$340 - $770
Vapor intrusion	$0.4 - $26	$0.4 - $27	$0.5 - $28
Product loss	$2.0 - $7.2	$2.0 - $7.4	$2.1 - $7.7
Annual Compliance Costs			
Conventional UST systems[b]	$180	$180	$180
Emergency generator tanks (EGT)	$2.2	$2.2	$2.2
Airport hydrant fuels distribution systems (AHFDSs)	$18	$21	$22
UST systems with field-constructed tanks (FCTs)	$4.6	$5.2	$5.6
Cost to owners/operators to read regulations	$5.1	$3.7	$2.7
State government administrative costs[c]	$0.2	$0.2	$0.2
Total Annual Avoided Costs	**$300 - $740**	**$330 - $770**	**$340 - $810**
Total Annual Compliance Costs[e]	**$210**	**$210**	**$210**
Net Cost (Savings) to Society[e] [Total Compliance Costs *less* Total Avoided Costs]	**($530) - ($90)**	**($560) - ($120)**	**($130) - ($600)**

[a] The pathway assessed to evaluate avoided cancer risk is benzene exposure through contaminated groundwater.
[b] Conventional UST systems include all systems that are not AHFDSs, FCTs, or EGTs.
[c] The costs for UST systems directly owned or operated by local, state, and federal government entities are included in the estimates of compliance costs within the other categories. Costs shown here reflect the administrative costs for state governments to read the regulation,

[3] These requirements are the elimination of flow restrictors as overfill prevention for new tanks and when overfill devices are replaced, closure of lined tanks which cannot be repaired, and all Energy Policy Act requirements in Indian country, with the exception of operator training.

apply for state program approval, process notifications of ownership changes, and process one-time notifications of EGT, AHFDS, and FCT existence.

[d] Totals may not add up due to rounding.

[e] Compliance costs include direct compliance costs and state oversight costs. For this regulatory impact analysis, direct compliance costs and state oversight costs provide a reasonable proxy to assess the proposed rule's social costs. See Chapter 3.1 for further discussion.

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TRANSCRIPT OF PROPOSED UNDERGROUND STORAGE TANK REGULATIONS
PUBLIC HEARING ON SEPTEMBER 11, 2019

Michael O'Mallan: This hearing is going to be recorded for the record. This is the Public Hearing Guam Underground Storage Tank Regulations. Welcome and thank you for coming. Today's date is September 11, 2019. The time is 3:00 p.m. Guam Environmental Protection Agency (Guam EPA) Administration Building 17-3304 Mariner Avenue, Tiyan.

In accordance with Title 5 Guam Code Annotated §9301(a), the Guam EPA would like to notify the general public and owner/operators of underground storage tanks containing regulated substances of a Public Hearing for 22 GAR, which is the Guam Administrative Rules and Regulations (GAR), Chapter 50, Guam EPA UST Regulations. An Ad was placed in The Guam Daily Post on August 5, 2019 and August 30, 2019.

Public comment review period started August 5, 2019 and it's up until September 19, 2019.

The Guam Environmental Protection Agency (Guam EPA) seeks to propose rules and regulations for the underground storage of regulated substances by way of underground storage tanks (USTs). In accordance with 10 GCA §76104(d), and as enacted by passage of Guam Public Law 30-36 on June 19, 2009, the Guam EPA administrator shall "enact, modify, update, repeal, and enforce rules and regulations governing UST design, construction, installation, release detection and inventory control, compatibility, record maintenance, reporting, corrective action, closure, and financial responsibility in order to enforce this Chapter;"

The promulgation of these proposed rules and regulations seeks to administratively satisfy the following:

- Compliance with the United States Environmental Protection Agency's (USEPA) for governing local USTs in a manner that is consistent or more stringent with federal regulations under Resource Conservation and Recovery Act (RCRA), Subtitle I, and in accordance with 40 CFR 280,
- A requirement to achieve State Program Approval (SPA) for local primacy and funding to have sole authority over USTs on Guam, pursuant to 40 CFR 281
- Adherence to the $250 annual fee associated with permitting a UST, in accordance with 10 GCA § 76117(a), and
- Administer nominal fees that will allow Guam EPA to comply with RCRA I requirements such as regular release detection equipment testing and walkthrough inspections that seek to ensure proper operation and maintenance as keys for preventing and quickly identifying regulated substance releases

At this present time, Guam does not have a SPA UST state program. Guam EPA administers a UST Program utilizing the federal regulations, rendering the regulated community to bear cost burdens to comply with both federal mandates and local statutes. These proposed regulations will incorporate current

RCRA I requirements for USTs, and provide Guam with a single UST SPA program that will be aligned with federal regulations.

At this time if we would wanna do something real quick, the crowd is small enough can we go around the room to just identify yourself, your affiliation, you don't have to just say pass.

Vince Pereira: My name is Vincent Pereira, Guam EPA Program Manager for the Hazardous Waste.

Blaise Koki: Blaise Koki, Naval Base Guam.

Nicolas Moore: Nicolas Moore, Unitek Environmental Technician.

Brad Wolfe: Brad Wolfe, Unitek Environmental I'm a Scientist for the Company.

Brian Nunotani: Brian Nunotani, Hydro Air Pacific the Branch Manager.

Jon Gapasin: Jon Gapasin, Guam Petroleum Services.

Oscar Delfin: Oscar Delfin, NavFac Marianas.

Layli Terrill: Layli Terrill, Andersen Environmental.

Paul Torre: Paul Torre, Skilled Nursing Unit Barrigada.

Kristan Finney: Kristan Finney.

Mevany Hecita: Mevany Hecita, Guam EPA Hazardous Waste Management Program.

Don Quinata: Don Quinata, Guam EPA Hazardous Waste Management Program.

Michael: I'm Michael O'Mallan, Guam EPA Hazardous Waste Management Program.

Michael: At this time we want to open the floor to any questions regarding the proposed Underground Storage Tank Regulated Substance Regulations.

Brian: I got to a question for underground tank vent line. Is it mandated that the vent line be contained as in double-wall containment on a petroleum tank vent line?

Michael: I believe according to the proposed regulations all underground piping be double-walled.

Vince: It's not carrying any petroleum fuel?

Brian: No.

Vince: We can double check that for you if that's your concern.

Brian: I would appreciate that or can we get or download the regulations.

Vince: The regulations Is available at the Guam EPA website. It's at www.epa.guam.gov. Just to let you know the comment period for the regulations ends on September 19th of this month. We had it out on August 5th and we're complying with the requirements where we giving 45 days comment period for people interested in taking a look at it. But so far as submitting comments it has to be written, we do not accept emails.

Brian: Ok fair enough.

Vince: We will definitely take at that for you. We were hoping people attending this already read the regulations itself since we had it out for 45 days, that's the reason we are having this hearing. To make sure we touch all bases concerning any persons interested in finding out what the regulation is.

Brad: When will the regulations become effective? I guess it goes through this period?

Vince: The 45 day comment period ends on September 19th then there's a Triple A process that we have to go through …**

** ***At which times a brief conversation between minutes 08:15 through minute 12:06 on the Administrative Adjudication Law (aka the Triple A Process).***

Vince: Could you please introduce yourself Ma'am.

Conchita SN Taitano: I'm Conchita SN Taitano with Guam EPA the Air & Land Division Administrator.

Conchita: So no questions.

Vince: I am waiting for everybody that has other questions. If none, then we can close the meeting.

Conchita: Is there another opportunity for them to submit comments. Or today's the last day?

Vince: They have until the 19th of this month.

Conchita: OK you have until the 19th.

Vince: So take a look at the regulations it's on the website.

Conchita: Now how can they provide comments it has to be written?

Vince: Yes Ma'am.

Conchita: Do we accept comments via email or does..

Vince: No we don't accept.

Conchita: Ok so can we just reiterate what are the conditions for receiving even though it's in the notice but let's just repeat it again.

Michael: OK, so the ad that went out in the Daily Post, clearly stated, Guam UST relevant to this public hearing can be viewed at the Agency's administration building in Tiyan from 8:00 a.m. to 4:30 p.m. on business days, beginning on Monday, August 5, 2019. So there are five (5) copies maintained at our front office. The proposed regulations are also available at epa.guam.gov." and that's our EPA website.

Conchita: So it's available online.

Michael: Yes. Written comments are welcomed and must be received, by the agency via hand delivery or mail and should be addressed to: Administrator, c/o Guam EPA: 17-3304 Mariner Avenue, Tiyan, Barrigada, Guam 96913-1617. That's our physical address.

Conchita: Now it has to be received or it has to be postmarked?

Michael: Written comments must be received or postmarked no later than 5:00 p.m. on September 19, 2019.

Conchita: So postmarked even if the mail comes in as long as it has that postmarked that says the 19th right?

Michael: Facsimile and e-mail submittals will not be accepted.

Conchita: Ok, so that's clear to everyone right? No electronic comments will be accepted. Ah then you explained what the process is if there's no significant comments then it would be presented to the Board of Directors?

Michael: Yes.

Conchita: For their concurrence and they would be the ones to transmit the documents to?

Michael: The Legislative Secretary a copy..

Vince: No, it would go the Attorney General first.

Conchita: It goes to the Attorney General's Office so a lot of review in this and once the AGs Office approves it, it goes to?

Nic Lee: The Governor.

Conchita: The Governor. And then the Governor officially transmits it to the Legislature, the Legislature in turn may or may not have a public hearing it is our experience is that they always have a public hearing. So you'll have another opportunity to comment just in case you miss the 19th deadline.

Vince: And they can even make changes.

Conchita: The Legislature can always make changes. So no other questions?

Vince: Sir or Ma'am, if you don't have any other questions, its 3:17 p.m. we would like to close the meeting, if there is no other question? September 11th.

GUAM ENVIRONMENTAL PROTECTION AGENCY

GUAM UNDERGROUND STORAGE TANK REGULATIONS

PUBLIC HEARING

Wednesday, September 11, 2019 at 3:00 p.m.

Guam EPA Administration Offices - Building 17-3304 Mariner Avenue, Tiyan

Name (Please Print)	Mailing Address or Email Address (Optional)	Telephone Number (Optional)
Nicholas W. Moore	NicholasWayneMoore@gmail.com	565-3151
Brad C. Wolfe	wolfe.brad@gmail.com	687-1310
LAYLI JERRILL	Andersen AFB layli.terrill@us.af.mil	366-1850
kristan k finney		
BLAISE KOKI	NAVAL BASE GU	339-5314
Brian Numotani	209 E Harmon Ind Park	727-5844
Jm Gapasin	Dededo. Gu / guampetroleumservices@gmail.com	688-2995
PAUL S. TORRE	paul.torre@gmha.org	633-1818
Oscar Delfin	oscar.delfin@fe.navy.mil	3391045
Conchita SN Taitano	conchita.taitano@epa.guam.gov	300-4751
Michael S. O'Mallan	michael.omallan@epa.guam.gov	300-4767
Mevany E Hecita	m	

GUAM ENVIRONMENTAL PROTECTION AGENCY

GUAM UNDERGROUND STORAGE TANK REGULATIONS

PUBLIC HEARING

Wednesday, September 11, 2019 at 3:00 p.m.

Guam EPA Administration Offices - Building 17-3304 Mariner Avenue, Tiyan

Name (Please Print)	Mailing Address or Email Address (Optional)	Telephone Number (Optional)
Mevany E. Hecita	mevany.hecita@epa.guam.gov	300-4763
DON S. QUINATA	don.quinata@epa.guam.gov	300-4768

Doc. No. 35GL-20-2341.*

Office of the Attorney General of Guam

590 S. Marine Corps Drive, Suite 901 ♦ Tamuning, GU 96911
Phone: 671.475.3324 extension 5015 ♦ Fax: 671.477-4703 ♦ Email: law@guamg.org

Hon. Leevin Taitano Camacho
Attorney General of Guam

September 17, 2020

RECEIVED
OCT 09 2020
Guam Environmental Protection Agency

Mr. Walter Leon Guerrero
Administrator
Guam Environmental Protection Agency
17-3304 Mariner Ave.
Tiyan, Barrigada, Guam 96913-1617

Subject: **Approval of Proposed Revisions to Guam Underground Storage Tank Rules and Regulations (Ref: GEPA 19-0744)**

Dear Administrator Leon Guerrero:

The Office of the Attorney General has completed its review of the Guam Environmental Protection Agency's (GEPA's) enclosed proposed revisions to the Guam Underground Storage Tank Rules and Regulations received by this Office on August 4, 2020.

Pursuant to 5 GCA § 9303 of the Administrative Adjudication Law ("AAL"), I am approving the proposed rules as to form, constitutionality, compliance with the applicable requirements of the AAL, and compliance with your agency's statutory authority to promulgate rules.

Please be reminded that the AAL's current rule-making procedures require the Agency to file the proposed rules, together with the written approval of *I Maga'hâga* as to policy and approval of the Attorney General as to compliance with the law, with the Speaker of *I Liheslatura* in a format and manner specified in 5 GCA 9303(a)(4). Section 9303(c) further provides that no rule shall become effective until after ninety (90) calendar days have elapsed from the date of filing with the Speaker of *I Liheslatura* during which time and within seventy-five (75) calendar days from the date of filing of the rules with the Speaker, the legislative committee with oversight of the subject matter or the Committee of the Whole shall have conducted one or more public hearings on the proposed rules. After the public hearing and within the 90-day time period, *I Liheslatura* may approve, disapprove, or amend the proposed rules by the passage of a bill into law. In the event *I Liheslatura* declines to formally approve, disapprove, or amend the proposed rules by the

passage of a bill into law, the Speaker may certify and the Legislative Secretary may attest to the default approval of compliant rules.

If you have any questions, please contact Deputy Attorney General of the Solicitor Division, Karl P. Espaldon, at (671) 475-3324 ext. 3115/3660.

Sincerely,

LEEVIN TAITANO CAMACHO
Attorney General

Enclosure

GUAM ENVIRONMENTAL PROTECTION AGENCY
1973
AHENSIAN PRUTEKSION LINA'LA GUÅHAN
LOURDES A. LEON GUERRERO, GOVERNOR OF GUAM • JOSHUA F. TENORIO, LIEUTENANT GOVERNOR OF GUAM
WALTER S. LEON GUERRERO, ADMINISTRATOR

DEC 17 2019

The Honorable Leevin T. Camacho
Attorney General of Guam
590 South Marine Corps Drive, Suite 901
Tamuning, Guam 96913

RE: DRAFT UNDERGROUND STORAGE TANK RULES AND REGULATIONS

Hafa Adai Attorney General Camacho:

The Guam Environmental Protection Agency (Guam EPA) is requesting your review and approval of the proposed Underground Storage Tank Rules and Regulations as to form, constitutionality, compliance with the requirements of the Administrative Adjudication Law (AAL), and compliance with Guam EPA's statutory authority to promulgate rules. Pursuant to 5 Guam Code Annotated (GCA) § 9303(a)(1) of the AAL, as amended by Public Law 34-032 (July 13, 2017) and 10 GCA , Chapter 76, Article 1, § 76104(a).

Guam EPA hereby submits pursuant to 5 GCA § 9303(a)(3) a copy of the proposed UST Rules and Regulations in printed and identical electronic (pdf and word) version and other supporting information and documents for your review and approval:

(1) Guam EPA's Board of Directors Resolution # 19-002;
(2) Guam EPA Letter/DOA Response, pursuant to 5 GCA § 9301(e);
(3) Fact Sheet;
(4) Ads for the Notice of Public Hearing and Public Comment and Review Period for the proposed UST Rules and Regulations. The Ads were posted in the Guam Daily Post on August 5 and August 30, 2019, and at Guam EPA's website at www.epa.guam.gov pursuant to 5 GCA § 9301(a);
(5) Guam EPA's Economic Impact Statement; and
(6) Public Hearing Transcript.

The Agency looks forward to your expertise in assisting us in our effort to promulgate rules and regulations. Should you have any questions, please feel free to contact our office at 300-4751 or email me at walter.leonguerrero@epa.guam.gov.

Sincerely,

for WALTER S. LEON GUERRERO
Administrator

RECEIVED 12/17/19
OFFICE OF THE ATTORNEY GENERAL
ADMINISTRATION
0860

Doc. No. 35GL-20-2341.*

GUAM ENVIRONMENTAL PROTECTION AGENCY
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LOURDES A. LEON GUERRERO, GOVERNOR OF GUAM • JOSHUA F. TENORIO, LIEUTENANT GOVERNOR OF GUAM
WALTER S. LEON GUERRERO, ADMINISTRATOR

DEC 17 2019

The Honorable Leevin T. Camacho
Attorney General of Guam
590 South Marine Corps Drive, Suite 901
Tamuning, Guam 96913

RE: DRAFT UNDERGROUND STORAGE TANK RULES AND REGULATIONS

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(6) Public Hearing Transcript.

The Agency looks forward to your expertise in assisting us in our effort to promulgate rules and regulations. Should you have any questions, please feel free to contact our office at 300-4751 or email me at walter.leonguerrero@epa.guam.gov.

Sincerely,

For WALTER S. LEON GUERRERO
Administrator

UFISINAN I MAGA'HÅGA
OFFICE OF THE GOVERNOR

LOURDES A. LEON GUERRERO
MAGA'HÅGA • GOVERNOR

JOSHUA F. TENORIO
SIGUNDO MAGA'LÅHI • LIEUTENANT GOVERNOR

October 19, 2020

Transmitted via Central Files

Walter S. Leon Guerrero
Administrator
Guam Environmental Protection Agency
17-3304 Mariner Avenue
Tiyan Barrigada, Guam 96913-1617

Re: *Proposed* Rules and Regulations for the Underground Storage Tank

Dear Mr. Leon Guerrero,

Thank you for submitting the proposed Rules and Regulations Governing the Adoption of Codes of Professional Conduct/Ethics by the Guam Environmental Protection Agency. In reviewing the documents, I was pleased to see the attention and detail that was afforded in their preparation. These rules and regulations, in describing the minimum standards for the regulation of underground storage tanks describe well the policy of the government of Guam to protect our environment.

I encourage you to continue the good work in protecting the natural resources of our island.

Now, therefore, I, Lourdes A. Leon Guerrero, *I Maga'hågan Guahan,* Governor of Guam, pursuant to Title 5, Chapter 9, Article 3, am approving these rules and regulations as to policy.

Senseremente,

LOURDES A. LEON GUERRERO
Maga'hågan Guahan
Governor of Guam

Enclosure(s): EPA letter dated 10/14/2020 with enclosed rules and regulations

cc: Honorable Joshua F. Tenorio, *I Sigundo Maga'låhen Guahan*
Jon Junior Calvo, Chief of Staff

RICARDO J. BORDALLO GOVERNOR'S COMPLEX • HAGÅTÑA, GUAM 96910
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671.472.8931 • 671.472.8932/6

2020-11949
RCVD AT CENTRAL FI
OCT 15 '20 AM10:19
Lillian Kosaka

GUAM ENVIRONMENTAL PROTECTION AGENCY • *AHENSIAN PRUTEKSIÓN LINA'LA' GUÅHAN*
LOURDES A. LEON GUERRERO • GOVERNOR OF GUAM | JOSHUA F. TENORIO • LIEUTENANT GOVERNOR OF GUAM
WALTER S. LEON GUERRERO • ADMINISTRATOR | MICHELLE C. R. LASTIMOZA • DEPUTY ADMINISTRATOR

The Honorable Lourdes A. Leon Guerrero
I Maga'hågan Guåhan – Governor of Guam
Ricardo J. Bordallo Complex
513 West Marine Corps Drive
Hagåtna, Guam 96910

OCT 14 2020

RE: DRAFT UNDERGROUND STORAGE TANK RULES AND REGULATIONS

Buenas yan Hafa Adai Madam Governor,

The Guam Environmental Protection Agency (Guam EPA) is requesting your review and approval of the proposed Underground Storage Tank (UST) Rules and Regulations in compliance with the requirements of the Administrative Adjudication Law (AAL), and compliance with Guam EPA's statutory authority to promulgate rules. Pursuant to 5 Guam Code Annotated (GCA) § 9303(a)(1) of the AAL, as amended by Public Law 34-032 (July 13, 2017) and 10 GCA, Chapter 76, Article 1, § 76104(a).

Guam EPA hereby submits pursuant to 5 GCA § 9303(a)(3) a copy of the proposed UST Rules and Regulations in printed and identical electronic (pdf and word) version and other supporting information and documents for your review and approval:

(1) Guam EPA's Board of Directors Resolution # 19-002;
(2) Posted at Guam EPA's website at www.epa.guam.gov;
(3) DOA Letter for concurrence and approval;
(4) Fact Sheet;
(5) Ads for the Notice of Public Hearing and Public Comment and Review Period for the proposed UST Rules and Regulations. The Ads were posted in the Guam Daily Post on August 5 and August 30, 2019, pursuant to 5 GCA § 9301(a);
(6) Guam EPA's Economic Impact Statement and EPA's Assessment of the Potential Costs, Benefits, and Other Impacts of the Final Revisions to EPA's UST Regulations;
(7) Public Hearing Transcript;
(8) Guam EPA's cover letter to the Attorney General dated December 17, 2019; and
(9) Attorney General's Letter of Approval dated September 17, 2020.

The Agency looks forward to your review and approval of the Draft UST Rules and Regulations. Should you have any questions, please feel free to contact our office at 300-4751 or email me at walter.leonguerrero@epa.guam.gov.

Sincerely,

WALTER S. LEON GUERRERO
Administrator

Doc. No. 35GL-20-2341.*

OFFICE OF THE GOVERNOR
GOVERNOR'S CHAMBER

DATE: 10-15-20
TIME: 11:03a
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GC2020-2592

REVISED

GUAM ADMINISTRATIVE RULES AND REGULATIONS (GAR)

TITLE 22

GUAM ENVIRONMENTAL POTECTION AGENCY

CHAPTER 50

GUAM UNDERGROUND STORAGE TANK REGULATIONS

ATTN: Office of the Attorney General, Solicitors Division

REFERENCE NUMBER: 19-0744 GEPA

RE: REVISED 22 GAR Chapter 50

DATE: August 4, 2020

RECEIVED
MANUEL FEJERAN
OFFICE OF THE ATTORNEY GENERAL
ADMINISTRATION
8.4.20 10:22AM

GUAM ADMINISTRATIVE RULES AND REGULATIONS (GAR)

TITLE 22

GUAM ENVIRONMENTAL POTECTION AGENCY

CHAPTER 50

GUAM UNDERGROUND STORAGE TANK REGULATIONS

GUAM ADMINISTRATIVE RULES AND REGULATIONS (GAR)

TITLE 22

GUAM ENVIRONMENTAL PROTECTION AGENCY (Guam EPA)

CHAPTER 50

GUAM UNDERGROUND STORAGE TANK REGULATIONS

Article 1. Scope and Installation Requirements for Partially Excluded UST Systems
Article 2. UST Systems: Design, Construction, and Installation
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Article 10. Operator Training
Article 11. Reserved
Article 12. Permits and Variances
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ARTICLE 1
SCOPE AND INSTALLATION REQUIREMENTS FOR PARTIALLY EXCLUDED UST SYSTEMS

§ 50101 to § 50109. [Reserved]
§ 50110. Applicability
§ 50111. Installation requirements for partially excluded UST systems

§ 50112. Definitions
§ 50113. Installation requirements for partially excluded UST systems--codes of practice
§ 50114 to § 50119. [Reserved.]

§ 50101 to § 50109. [Reserved]

§ 50110. Applicability.

(a) The requirements of this chapter apply to all owners and operators of an UST system as defined in § 50112 except as otherwise provided in this section.

(1) Airport hydrant fuel distribution systems, UST systems with field-constructed tanks, and UST systems that store fuel solely for use by emergency power generators must meet the requirements of this chapter as follows:

(A) Airport hydrant fuel distribution systems and UST systems with field-constructed tanks must meet all applicable requirements of this chapter, except that those installed before October 13, 2015 must meet the applicable requirements of Articles 4, 8, 10, and 12 no later than one year after October 13, 2015.

(B) UST systems that store fuel solely for use by emergency power generators must meet all applicable requirements of this chapter except that those installed before October 13, 2015 must meet the applicable requirements of Article 4 no later than one year after October 13, 2015.

(2) Any UST system listed in subsection (c) must meet the requirements of § 50111.

(b) Exclusions. The following UST systems are excluded from the requirements of this chapter:

(1) Any UST system holding hazardous wastes listed or identified under 10 Guam Code Annotated (GCA), Chapter 76, Underground Storage of Regulated Substances, or the

rules adopted thereunder, or Subtitle C of the Solid Waste Disposal Act, or a mixture of such hazardous waste and other regulated substances;

(2) Any wastewater treatment tank system that is part of a wastewater treatment facility regulated under Section 402 or 307(b) of the Clean Water Act;

(3) Equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks;

(4) Any UST system that contains a de minimis concentration of regulated substances; and

(5) Any emergency spill or overflow containment UST system that is expeditiously emptied after use.

(c) Partial Exclusions. Articles 2, 3, 4, 5, 7, 10, and 12 do not apply to:

(1) Wastewater treatment tank systems not covered under subsection (b)(2);

(2) Aboveground storage tanks associated with:

(A) Airport hydrant fuel distribution systems; and

(B) UST systems with field-constructed tanks;

(3) Any UST systems containing radioactive material that are regulated under the Atomic Energy Act of 1954 (42 U.S.C. 2011 and following); and

(4) Any UST system that is part of an emergency generator system at nuclear power generation facilities licensed by the Nuclear Regulatory Commission and subject to Nuclear Regulatory Commission requirements regarding design and quality criteria, including but not limited to 10 C.F.R. Part 50.

(5) Owners and operators of oil-water separators and decontamination tanks must notify the Agency and obtain a permit to install a new flow through process and decontamination tank in accordance with Article 2, as applicable. Owners and operators of flow-through process tanks and decontamination tanks are not required to obtain, renew, or pay for an annual fee to operate the tank and are not required to comply with Articles 3, 4, 5, and 10.

(6) Owners and operators of oil-water separators and decontamination tanks shall pay for a fee to install and close the system, and to conduct site assessment upon closure in accordance with §§ 50171 and 50172 of Article 7; and

(7) Owners and operator of oil-water separators and decontamination tanks that are installed after October 13, 2018, must be designed, constructed, and installed in accordance with Article 2, unless directed otherwise by the Agency.

§ 50111. Installation requirements for partially excluded UST systems.

(a) Owners and operators must install an UST system listed in section 50110 (c)(1), (3), or (4) storing regulated substances (whether of single or double wall construction) that meets the following requirements:

(1) Will prevent releases due to corrosion or structural failure for the operational life of the UST system;

(2) Is cathodically protected against corrosion, constructed of non-corrodible material, steel clad with a non-corrodible material, or designed in a manner to prevent the release or threatened release of any stored substance; and

(3) Is constructed or lined with material that is compatible with the stored substance.

(b) Notwithstanding subsection (a), an UST system without corrosion protection may be installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life. Owners and operators must maintain records that demonstrate compliance with the requirements of this subsection for the remaining life of the tank.

§ 50112. Definitions.

When used in this Article, the following terms have the meanings given below:

(a) "Aboveground release" means any release to the surface of the

land or to surface water. This includes, but is not limited to, releases from the aboveground portion of an UST system and aboveground releases associated with overfills and transfer operations as the regulated substance moves to or from an UST system.

(b) "Airport hydrant fuel distribution system" (also called "airport hydrant system") means an UST system which fuels aircraft and operates under high pressure with large diameter piping that typically terminates into one or more hydrants (fill stands). The airport hydrant system begins where fuel enters one or more tanks from an external source such as a pipeline, barge, rail car, or other motor fuel carrier.

(c) "Ancillary equipment" means any devices including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps used to distribute, meter, or control the flow of regulated substances to and from an UST.

(d) "Belowground release" means any release to the subsurface of the land and to groundwater. This includes, but is not limited to, releases from the belowground portions of an underground storage tank system and belowground releases associated with overfills and transfer operations as the regulated substance moves to or from an underground storage tank.

(e) "Beneath the surface of the ground" means beneath the ground surface or otherwise covered with earthen materials.

(f) "Cathodic protection" is a technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell. For example, a tank system can be cathodically protected through the application of either galvanic anodes or impressed current.

(g) "Cathodic protection tester" means a person who can demonstrate an understanding of the principles and measurements of all common types of cathodic protection systems as applied to buried or submerged metal piping and tank systems. At a minimum, such persons must have education and experience in soil resistivity, stray current, structure-to-soil potential, and component electrical isolation measurements of buried metal piping and tank systems.

(h) "Class A operator" means the individual who has primary responsibility to operate and maintain the UST system in accordance with

applicable requirements established by the agency. The Class A operator typically manages resources and personnel, such as establishing work assignments, to achieve and maintain compliance with regulatory requirements.

(i) "Class B operator" means the individual who has day-to-day responsibility for implementing applicable regulatory requirements established by the agency. The Class B operator typically implements in-field aspects of operation, maintenance, and associated recordkeeping for the UST system.

(j) "Class C operator" means the individual responsible for initially addressing emergencies presented by a spill or release from an UST system. The Class C operator typically controls or monitors the dispensing or sale of regulated substances.

(k) "Compatible" means the ability of two or more substances to maintain their respective physical and chemical properties upon contact with one another for the design life of the tank system under conditions likely to be encountered in the UST.

(l) "Connected piping" means all underground piping including valves, elbows, joints, flanges, and flexible connectors attached to a tank system through which regulated substances flow. For the purpose of determining how much piping is connected to any individual UST system, the piping that joins two UST systems should be allocated equally between them.

(m) "Consumptive use" with respect to heating oil means consumed on the premises.

(n) "Containment sump" means a liquid-tight container that protects the environment by containing leaks and spills of regulated substances from piping, dispensers, pumps, and related components in the containment area. Containment sumps may be single walled or secondarily contained and located at the top of tank (tank top or submersible turbine pump sump), underneath the dispenser (under-dispenser containment sump), or at other points in the piping run (transition or intermediate sump).

(o) "Corrosion expert" means a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and

mathematics acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Such a person must be accredited or certified as being qualified by the National Association of Corrosion Engineers or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control of buried or submerged metal piping systems and metal tanks.

(p) "Dielectric material" means a material that does not conduct direct electrical current. Dielectric coatings are used to electrically isolate UST systems from the surrounding soils. Dielectric bushings are used to electrically isolate portions of the UST system (e.g., tank from piping).

(q) "Dispenser" means equipment located aboveground that dispenses regulated substances from the UST system.

(r) "Dispenser system" means the dispenser and the equipment necessary to connect the dispenser to the underground storage tank system. The equipment necessary to connect the dispenser to the underground storage tank system includes check valves, shear valves, unburied risers or flexible connectors, or other transitional components that are underneath the dispenser and connect the dispenser to the underground piping.

(s) "Electrical equipment" means underground equipment that contains dielectric fluid that is necessary for the operation of equipment such as transformers and buried electrical cable.

(t) "EPA" means the United States Environmental Protection Agency.

(u) "Excavation zone" means the volume containing the tank system and backfill material bounded by the ground surface, walls, and floor of the pit and trenches into which the UST system is placed at the time of installation.

(v) "Existing UST system" means an UST system for which installation commenced on or before December 22, 1988.

(w) "Exposure assessment" means a determination regarding the extent of exposure of, or potential for exposure of, individuals to regulated substances from a release from an UST or tank system. An exposure assessment shall be based on factors such as the nature and extent of

contamination, the existence of or potential for pathways of human exposure (including ground or surface water contamination, air emissions, dermal exposure, soil ingestion, and food chain contamination), the size of the community or communities within the likely pathways of exposure, an analysis of expected human exposure levels with respect to short-term and long-term health effects associated with identified contaminants, and any available recommended exposure or tolerance limits for the contaminants.

(x) "Farm tank" is a tank located on a tract of land devoted to the production of crops or raising animals, including fish, and associated residences and improvements. A farm tank must be located on the farm property. Farm includes fish hatcheries, rangeland, and nurseries with growing operations.

(y) "Field-constructed tank" means a tank constructed in the field. For example, a tank constructed of concrete that is poured in the field, or a steel or fiberglass tank primarily fabricated in the field is considered field-constructed.

(z) "Flow-through process tank" is a tank that forms an integral part of a production process through which there is a steady, variable, recurring, or intermittent flow of materials during the operation of the process. Flow-through process tanks do not include tanks used for the storage of materials prior to their introduction into the production process or for the storage of finished products or by-products from the production process.

(aa) "Free product" refers to a regulated substance that is present as a non-aqueous phase liquid (e.g., liquid not dissolved in water).

(bb) "Gathering lines" means any pipeline, equipment, facility, or building used in the transportation of oil or gas during oil or gas production or gathering operations.

(cc) "Hazardous substance" means a hazardous substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 as amended, except any substance regulated as a hazardous waste under Subtitle C of the Solid Waste Disposal Act.

(dd) "Hazardous substance UST system" means an underground storage tank system that contains a hazardous substance or any mixture of

such substances and petroleum, and that is not a petroleum UST system.
(ee) "Heating oil" means petroleum that is No. 1, No. 2, No. 4—light, No. 4—heavy, No. 5—light, No. 5—heavy, and No. 6 technical grades of fuel oil; other residual fuel oils (including Navy Special Fuel Oil and Bunker C); and other fuels when used as substitutes for one of these fuel oils. Heating oil is typically used in the operation of heating equipment, boilers, or furnaces.
(ff) "Hydraulic lift tank" means a tank holding hydraulic fluid for a closed-loop mechanical system that uses compressed air or hydraulic fluid to operate lifts, elevators, and other similar devices.
(gg) "Liquid trap" means sumps, well cellars, and other traps used in association with oil and gas production, gathering, and extraction operations (including gas production plants), for the purpose of collecting oil, water, and other liquids. These liquid traps may temporarily collect liquids for subsequent disposition or reinjection into a production or pipeline stream, or may collect and separate liquids from a gas stream.
(hh) "Maintenance" means the normal operational upkeep to prevent an underground storage tank system from releasing product.
(ii) "Motor fuel" means a complex blend of hydrocarbons typically used in the operation of a motor engine, such as motor gasoline, aviation gasoline, No. 1 or No. 2 diesel fuel, or any blend containing one or more of these substances (e.g., motor gasoline blended with alcohol).
(jj) "Noncommercial purposes" with respect to motor fuel means not for resale.
(kk) "On the premises where stored" with respect to heating oil means UST systems located on the same property where the stored heating oil is used.
(ll) "Operational life" refers to the period beginning when installation of the tank system has commenced until the time the tank system is properly closed under Article 7.
(mm) "Operator" means any person in control of, or having responsibility for, the daily operation of the UST system.
(nn) "Overfill release" is a release that occurs when a tank is filled beyond its capacity, resulting in a discharge of the regulated substance to the environment.

(oo) "Owner" means:

1. In the case of an UST system in use on November 8, 1984, or brought into use after that date, any person who owns an UST system used for storage, use, or dispensing of regulated substances; and
2. In the case of any UST system in use before November 8, 1984, but no longer in use on that date, any person who owned such UST immediately before the discontinuation of its use.

(pp) "Permit" means written authorization, as provided for in 10 GCA, Chapter 76, § 76117, from the Administrator to install or operate an UST or tank system. A permit authorizes owners or operators to install and operate an UST or tank system in a manner, or to do an act, not forbidden by 10 GCA Chapter 76, or by this chapter, but requiring review by the Administrator.

(qq) "Person" means an individual, trust, estate, firm, joint stock company, corporation (including a government corporation), partnership, association, commission, consortium, joint venture, commercial entity, the state or a county, the United States government, federal agency, interstate body, or any other legal entity.

(rr) "Petroleum" means petroleum, including crude oil or any fraction thereof, that is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

(ss) "Petroleum UST system" means an underground storage tank system that contains petroleum or a mixture of petroleum with de minimis quantities of other regulated substances. Such systems include those containing motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

(tt) "Pipe" or "piping" means a hollow cylinder or tubular conduit that is constructed of non-earthen materials.

(uu) "Pipeline facilities" (including gathering lines) means pipe rights-of-way and any associated equipment, facilities, or buildings.

(vv) "Regulated substance" means hazardous substances, petroleum, and any other substance designated by the agency that, when released into the environment, may present substantial danger to human health,

welfare, or the environment. The term regulated substance includes but is not limited to petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons, such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

(ww) "Release" means any spilling, leaking, emitting, discharging, escaping, leaching, or disposing from an UST system into groundwater, surface water, or subsurface soils.

(xx) "Release detection" means determining whether a release of a regulated substance has occurred from the UST system into the environment or a leak has occurred into the interstitial space between the UST system and its secondary barrier or secondary containment around it.

(yy) "Repair" means to restore to proper operating condition a tank, pipe, spill prevention equipment, overfill prevention equipment, corrosion protection equipment, release detection equipment or other UST system component that has caused a release of product from the UST system or has failed to function properly.

(zz) "Replaced" means

(1) For an underground storage tank – to remove an underground storage tank and install another underground storage tank; or

(2) For connected piping – to remove 50 percent or more of connected piping and install other piping, excluding connectors, connected to a single underground storage tank. For underground storage tanks with multiple piping runs, this definition applies independently to each piping run.

(aaa) "Residential tank" is a tank located on property used primarily for dwelling purposes.

(bbb) "Secondary containment" or "secondarily contained" means a release prevention and release detection system for a tank or piping. This system has an inner and outer barrier with an interstitial space that is monitored for leaks. This term includes containment sumps when used for interstitial monitoring of piping.

(ccc) "Septic tank" is a water-tight covered receptacle designed to receive or process, through liquid separation or biological digestion, the sewage discharged from a building sewer. The effluent from such receptacle is distributed for disposal through the soil and settled solids

and scum from the tank are pumped out periodically and hauled to a treatment facility.

(ddd) "Storm water collection system" or "wastewater collection system" means piping, pumps, conduits, and any other equipment necessary to collect and transport the flow of surface water run-off resulting from precipitation, or domestic, commercial, or industrial wastewater to and from retention areas or any areas where treatment is designated to occur. The collection of storm water and wastewater does not include treatment except where incidental to conveyance.

(eee) "Surface impoundment" is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials) that is not an injection well.

(fff) "Tank" is a stationary device designed to contain an accumulation of regulated substances and constructed of non-earthen materials (e.g., concrete, steel, plastic) that provide structural support.

(ggg) "Temporary closure" or "temporarily closed" means that owners and operators do not deposit regulated substances into the UST or tank system nor dispense regulated substances from the UST or tank system for sixty days or longer, except for UST systems that store fuel solely for use by emergency power generators and UST systems with field-constructed tanks. For UST systems that store fuel solely for use by emergency power generators and UST systems with field-constructed tanks, "temporary closure" or "temporarily closed" means that the UST or tank system is empty, as defined in section 50170(a), and owners and operators do not deposit regulated substances into the UST or tank system for sixty (60) calendar days or longer.

(hhh) "Under-dispenser containment" or "UDC" means containment underneath a dispenser system designed to prevent leaks from the dispenser and piping within or above the UDC from reaching soil, groundwater, and surface water.

(iii) "Underground area" means an underground room, such as a basement, cellar, shaft or vault, providing enough space for physical inspection of the exterior of the tank situated on or above the surface of the floor.

(jjj) "Underground release" means any belowground or below water release.

(kkk) "Underground storage tank" or "UST" means any one or combination of tanks (including underground pipes connected thereto) that is used to contain an accumulation of regulated substances, and the volume of which (including the volume of underground pipes connected thereto) is ten (10%) percent or more beneath the surface of the ground. This term does not include any:

(1) Farm or residential tank of one thousand one hundred gallons or less capacity used for storing motor fuel for noncommercial purposes;

(2) Tank used for storing heating oil for consumptive use on the premises where stored;

(3) Septic tank;

(4) Pipeline facility (including gathering lines):

(A) Which is regulated under 49 U.S.C. chapter 601; or

(B) Which is an intrastate pipeline facility regulated under state laws as provided in 49 U.S.C. chapter 601, and which is determined by the Secretary of Transportation to be connected to a pipeline, or to be operated or intended to be capable of operating at pipeline pressure or as an integral part of a pipeline;

(5) Surface impoundment, pit, pond, or lagoon;

(6) Storm water or wastewater collection system;

(7) Liquid trap or associated gathering lines directly related to oil or gas production and gathering operations; or

(8) Storage tank situated in an underground area (such as a basement, cellar, mine working, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

The term underground storage tank or UST does not include any pipes connected to any tank which is described in paragraphs (1) to (8).

(jjj) "Upgrade" means the addition or retrofit of some systems such as cathodic protection, lining, or spill and overfill controls to improve the ability of an underground storage tank system to prevent the release of

product.
(kkk) "UST system" or "tank system" means an underground storage tank, connected underground piping, underground ancillary equipment, and containment system, if any.
(lll) "Variance" means a special written authorization from the Administrator to own, install, or operate an UST or tank system in a manner deviating from, or to do an act that deviates from, the requirements of this chapter that are more stringent than 40 C.F.R. Part 280.
(mmm) "Wastewater treatment tank" means a tank that is designed to receive and treat an influent wastewater through physical, chemical, or biological methods.

§ 50113. Installation requirements for partially excluded UST systems--codes of practice.

(a) The following current codes of practice may be used as guidance for complying with § 50111:

(1) NACE International Standard Practice SP 0285, "External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection";

(2) NACE International Standard Practice SP 0169, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems";

(3) American Petroleum Institute Recommended Practice 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems"; or

(4) Steel Tank Institute Recommended Practice R892, "Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems".

§ 50114 to § 50119. [Reserved.]

ARTICLE 2
UST SYSTEMS: DESIGN, CONSTRUCTION, AND INSTALLATION

§ 50120. Performance Standards for UST Systems
§ 50121. Upgrading of UST Systems
§ 50122. [Reserved.]
§ 50123. Tank and Piping Design for Hazardous Substances UST System
§ 50124. Secondary Containment Design
§ 50125. Under-Dispenser Containment
§ 50126. Performance Standards and Design for UST System – Code of Practice
§ 50127 to § 50129. [Reserved.]

§ 50120. Performance Standards for UST Systems.

(a) In order to prevent releases due to structural failure, corrosion, or spills and overfills for as long as the UST system is used to store regulated substances, owners and operators of UST systems must meet all applicable requirements of this Article. UST systems must meet the requirements of this section as follows:

(1) UST systems installed after December 22, 1988, other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must meet the requirements of this section, except as specified in this Article.

(2) Airport hydrant fuel distribution systems and UST systems with field-constructed tanks installed after October 13, 2015 must meet the requirements of this section.

(b) Tanks. Each tank must be properly designed, constructed, and installed, and any portion underground that routinely contains product must be protected from corrosion, in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

(1) The tank is constructed of fiberglass-reinforced plastic; or

(2) The tank is constructed of steel and cathodically protected in

the following manner:

(A) The tank is coated with a suitable dielectric material;

(B) Field-installed cathodic protection systems are designed by a corrosion expert;

(C) Impressed current systems are designed to allow determination of current operating status as required in § 50131(3); and

(D) Cathodic protection systems are operated and maintained in accordance with § 50131 or according to guidelines established by the agency; or

(3) The tank is constructed of steel and clad or jacketed with a non-corrodible material; or

(4) The tank is constructed of metal without additional corrosion protection measures provided that:

(A) The tank is installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life; and

(B) Owners and operators maintain records that demonstrate compliance with the requirements of subparagraph (A) for the remaining life of the tank; or

(5) The tank construction and corrosion protection are determined by the agency to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than paragraphs (1) to (4).

(c) Piping. The piping that routinely contains regulated substances and is in contact with the ground must be properly designed, constructed, installed, and protected from corrosion in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

(1) The piping is constructed of a non-corrodible material; or

(2) The piping is constructed of steel and cathodically protected in the following manner:

(A) The piping is coated with a suitable dielectric material;

(B) Field-installed cathodic protection systems are designed by a corrosion expert;

(C) Impressed current systems are designed to allow determination of current operating status as required in § 50131(3); and

(D) Cathodic protection systems are operated and maintained in accordance with § 50131 or guidelines established by the agency; or

(3) The piping is constructed of metal without additional corrosion protection measures provided that:

(A) The piping is installed at a site that is determined by a corrosion expert to not be corrosive enough to cause it to have a release due to corrosion during its operating life; and

(B) Owners and operators maintain records that demonstrate compliance with the requirements of subparagraph (A) for the remaining life of the piping; or

(4) The piping construction and corrosion protection are determined by the agency to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than the requirements in paragraphs (1) to (3).

(d) Spill and overfill prevention equipment.

(1) Except as provided in paragraphs (2) and (3), to prevent spilling and overfilling associated with product transfer to the UST system, owners and operators must use the following spill and overfill prevention equipment:

(A) Spill prevention equipment that will prevent release of product to the environment when the transfer hose is detached from the fill

pipe (for example, a spill catchment basin); and

(B) Overfill prevention equipment that will:

(i) Automatically shut off flow into the tank when the tank is no more than ninety-five (95%) percent full;

(ii) Alert the transfer operator when the tank is no more than ninety (90%) percent full by restricting the flow into the tank or triggering a high-level alarm; or

(iii) Restrict flow thirty (30) minutes prior to overfilling, alert the transfer operator with a high-level alarm one minute before overfilling, or automatically shut off flow into the tank so that none of the fittings located on top of the tank are exposed to product due to overfilling.

(2) Owners and operators are not required to use the spill and overfill prevention equipment specified in paragraph (1) if:

(A) Alternative equipment is used that is determined by the agency to be no less protective of human health and the environment than the equipment specified in paragraph (1)(A) or (B); or

(B) The UST system is filled by transfers of no more than twenty-five (25) gallons at one time.

(3) Flow restrictors used in vent lines may not be used to comply with paragraph (1)(B) when overfill prevention is installed or replaced after October 13, 2015.

(4) Overfill prevention methods that rely on the use of alarms must have the alarms clearly labeled "overfill alarm" and located where the delivery person can clearly see and hear the alarm in order to immediately stop delivery of the product.

(5) Spill and overfill prevention equipment must be periodically

tested or inspected in accordance with § 50135.

(e) Installation. The UST system must be properly installed in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and in accordance with the manufacturer's instructions.

(f) Certification of installation. All owners and operators must ensure that one or more of the following methods of certification, testing, or inspection is used to demonstrate compliance with subsection (e) by providing a certification of compliance on the "Certification of Underground Storage Tank Installation" form prescribed by the Administrator and in accordance with § 501325(d).

(1) The installer has been certified by the tank and piping manufacturers;

(2) The installer has been certified or licensed by the agency;

(3) The installation has been inspected and certified by a licensed professional engineer with education and experience in UST system installation;

(4) The installation has been inspected and approved by the agency;

(5) All work listed in the manufacturer's installation checklists has been completed and the checklists maintained; or

(6) The owner and operator have complied with another method for ensuring compliance with subsection (e) that is determined by the agency to be no less protective of human health and the environment.

(g) Secondary containment.

(1) UST systems installed after April 11, 2016, other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must be provided with secondary containment that meets the requirements of § 50124, except for suction piping that meets the requirements of § 50141(b)(6).

(2) Airport hydrant fuel distribution systems and UST systems with field-constructed tanks must be provided with

secondary containment that meets the requirements of § 50124, except for:

(A) Suction piping that meets the requirements of § 50141(b)(6);

(B) Piping associated with UST systems with field constructed tanks greater than 50,000 gallons; and

(C) Piping associated with airport hydrant systems.

§ 50121. Upgrading of UST Systems.

(a) All UST systems must comply with one of the following requirements:

(1) UST system performance standards in § 50120(b) to (d);

(2) For airport hydrant fuel distribution systems and UST systems with field-constructed tanks installed on or before October 13, 2015:

(A) The system performance standards in § 50120(b) and (c); and

(B) Not later than October 13, 2018, the system performance standards under § 50120(d); or

(3) Closure requirements under Article 7.

§ 50122. [Reserved.]

§ 50123. Tank and Piping Design for Hazardous Substances UST System.

Owners and operators of hazardous substance UST systems must provide secondary containment for tanks and underground piping that meets the requirements of § 50124

§ 50124. Secondary Containment Design.

(a) Secondary containment systems must be designed, constructed, and installed to:

(1) Contain regulated substances leaked from the primary

containment until they are detected and removed;

(2) Prevent the release of regulated substances to the environment at any time during the operational life of the UST system; and

(3) Be checked for evidence of a release at least every thirty (30) calendar days.

(b) Double-walled tanks must be designed, constructed, and installed to:

(1) Contain a leak from any portion of the inner tank within the outer wall; and

(2) Detect the failure of the inner wall.

(c) External liners (including vaults) must be designed, constructed, and installed to:

(1) Contain one hundred (100%) percent of the capacity of the largest tank within its boundary;

(2) Prevent precipitation and groundwater intrusion from interfering with the ability to contain or detect a leak or release of regulated substances; and

(3) Surround the UST completely to effectively prevent lateral and vertical migration of regulated substances.

§ 50125. Under-Dispenser Containment.

(a) Dispenser systems installed on or after April 11, 2016, must have under-dispenser containment that meets the requirements in this subsection. Under-dispenser containment requirement must:

A. Be liquid-tight on its sides, bottom, and at any penetrations;

B. Be compatible with the substance conveyed by the piping;

C. Allow for visual inspection and access to the components in the containment system; and

D. Be monitored for leaks from the dispenser system with a sensing device that signals the operator of the presence of regulated substances.

§ 50126. Performance Standards and Design for UST System - Code of Practice.

(a) The following current codes of practice may be used to comply with § 50120(b)(1):

(1) Underwriters Laboratories Standard 1316, "Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures"; or

(2) Underwriter's Laboratories of Canada S615, "Standard for Reinforced Plastic Underground Tanks for Flammable and Combustible Liquids".

(b) The following current codes of practice may be used to comply with § 50120(b)(2):

(1) Steel Tank Institute "Specification STI–P3® Specification and Manual for External Corrosion Protection of Underground Steel Storage Tanks";

(2) Underwriters Laboratories Standard 1746, "External Corrosion Protection Systems for Steel Underground Storage Tanks";

(3) Underwriters Laboratories of Canada S603, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids", and S603.1, "Standard for External Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids", and S631, "Standard for Isolating Bushings for Steel Underground Tanks Protected with External Corrosion Protection Systems";

(4) Steel Tank Institute Standard F841, "Standard for Dual Wall Underground Steel Storage Tanks"; or

(5) NACE International Standard Practice SP 0285, "External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection", and Underwriters Laboratories Standard 58, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids".

(c) The following current codes of practice may be used to comply with § 50120(b)(3):

(1) Underwriters Laboratories Standard 1746, "External

Corrosion Protection Systems for Steel Underground Storage Tanks";

(2) Steel Tank Institute ACT-100® Specification F894, "Specification for External Corrosion Protection of FRP Composite Steel Underground Storage Tanks";

(3) Steel Tank Institute ACT-100-U® Specification F961, "Specification for External Corrosion Protection of Composite Steel Underground Storage Tanks"; or

(4) Steel Tank Institute Specification F922, "Steel Tank Institute Specification for Permatank®".

(d) The following current codes of practice may be used to comply with § 50120(c)(1):

(1) Underwriters Laboratories Standard 971, "Nonmetallic Underground Piping for Flammable Liquids"; or

(2) Underwriters Laboratories of Canada Standard S660, "Standard for Nonmetallic Underground Piping for Flammable and Combustible Liquids".

(e) The following current codes of practice may be used to comply with § 50120(c)(2):

(1) American Petroleum Institute Recommended Practice 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems";

(2) Underwriters Laboratories Subject 971A, "Outline of Investigation for Metallic Underground Fuel Pipe";

(3) Steel Tank Institute Recommended Practice R892, "Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems";

(4) NACE International Standard Practice SP 0169, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems"; or

(5) NACE International Standard Practice SP 0285, "External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection".

(f) Tank and piping system installation practices and procedures

described in the following current codes of practice may be used to comply with the requirements of § 50120(e):

(1) American Petroleum Institute Publication 1615, "Installation of Underground Petroleum Storage System";

(2) Petroleum Equipment Institute Publication RP100, "Recommended Practices for Installation of Underground Liquid Storage Systems"; or

(3) National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code" and Standard 30A, "Code for Motor Fuel Dispensing Facilities and Repair Garages".

(g) When designing, constructing, and installing airport hydrant systems and UST systems with field-constructed tanks, owners and operators may use military construction criteria, such as Unified Facilities Criteria (UFC) 3–460–01, "Petroleum Fuel Facilities".

§ 50127 to § 50129. [Reserved.]

ARTICLE 3
GENERAL OPERATING REQUIREMENTS

§ 50130. Spill and Overfill Control
§ 50131. Operation and Maintenance of Corrosion Protection
§ 50132. Compatibility
§ 50133. Repairs Allowed
§ 50134. Notification, Reporting, and Recordkeeping
§ 50135. Periodic Testing of Spill Prevention Equipment and Containment Sumps Used for Interstitial Monitoring of Piping and Periodic Inspection of Overfill Prevention Equipment
§ 50136. Periodic Operation and Maintenance Walkthrough Inspections
§ 50137. Periodic Inspection and Maintenance of Under-Dispenser Containment Sensing Devices
§ 50138. General Operating Requirement – Codes of Practice

§ 50139. [Reserved.]

§ 50130. Spill and Overfill Control.

(a) Owners and operators must ensure that releases due to spilling or overfilling do not occur. The owner and operator must ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling.
(b) The owner and operator must report, investigate, and clean up any spills and overfills in accordance with § 50153.

§ 50131. Operation and Maintenance of Corrosion Protection.

All owners and operators of metal UST systems with corrosion protection must comply with the following requirements to ensure that releases due to corrosion are prevented until the UST system is permanently closed or undergoes a change-in-service pursuant to § 50171:

(1) All corrosion protection systems must be operated and maintained to continuously provide corrosion protection to the metal components of that portion of the tank and piping that routinely contain regulated substances and are in contact with the ground.

(2) All UST systems equipped with cathodic protection systems must be inspected for proper operation by a qualified cathodic protection tester in accordance with the following requirements:

(A) Frequency. All cathodic protection systems must be tested within six (6) months of installation and at least every three (3) years thereafter; and

(B) Inspection criteria. The criteria that are used to determine that cathodic protection is adequate as required by this section must be in accordance with a code of practice developed by a nationally recognized association.

(3) UST systems with impressed current cathodic protection systems must also be inspected every sixty (60) calendar days to ensure the equipment is operating properly.

(4) For UST systems using cathodic protection, records of the operation of the cathodic protection must be maintained, in accordance with § 50134, to demonstrate compliance with the performance standards in this section. These records must provide the following:

(A) The results of the last three (3) inspections required in paragraph (3); and

(B) The results of testing from the last two (2) inspections required in paragraph (2).

§ 50132. Compatibility.

(a) Owners and operators must use an UST system made of or lined with materials that are compatible with the substance stored in the UST system.

(b) Owners and operators must notify the agency at least thirty (30) days prior to switching to a regulated substance containing greater than ten (10%) percent ethanol, greater than twenty (20%) percent biodiesel, or any other regulated substance identified by the agency. In addition, owners and operators with UST systems storing these regulated substances must meet one of the following:

(1) Demonstrate compatibility of the UST system (including the tank, piping, containment sumps, pumping equipment, release detection equipment, spill equipment, and overfill equipment). Owners and operators may demonstrate compatibility of the UST system by using one of the following options:

(A) Certification or listing of UST system equipment or components by a nationally recognized, independent testing laboratory for use with the regulated substance stored; or

(B) Equipment or component manufacturer approval. The manufacturer's approval must be in writing,

indicate an affirmative statement of compatibility, specify the range of biofuel blends the equipment or component is compatible with, and be from the equipment or component manufacturer; or

(2) Use another option determined by the agency to be no less protective of human health and the environment than the options listed in paragraph (1).

(c) Owners and operators must maintain records in accordance with § 50134(d) documenting compliance with subsection (b) for as long as the UST system is used to store the regulated substance.

§ 50133. Repairs Allowed.

(a) Owners and operators of UST systems must ensure that repairs will prevent releases due to structural failure or corrosion as long as the UST system is used to store regulated substances. The repairs must meet the following requirements:

(1) Repairs to UST systems must be properly conducted in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory;

(2) Repairs to fiberglass-reinforced plastic tanks may be made by the manufacturer's authorized representatives or in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory;

(3) Metal pipe sections and fittings that have released product as a result of corrosion or other damage must be replaced. Non-corrodible pipes and fittings may be repaired in accordance with the manufacturer's specifications;

(4) Prior to the return to use of a repaired UST system, any repaired USTs must pass a tank tightness test in accordance with § 50143(3);

(5) Prior to the return to use of a repaired UST system, any repaired piping that routinely contains product must pass a line tightness test in accordance with § 50144(2);

(6) Prior to return to use of a repaired UST system, repairs to

secondary containment areas of tanks and piping used for interstitial monitoring, containment sumps used for interstitial monitoring of piping, and containment walls must have the secondary containment tested for integrity using vacuum, pressure, or liquid methods in accordance with requirements developed by the manufacturer, a code of practice developed by a nationally recognized association or independent testing laboratory, or requirements established by the agency;

(7) Within six (6) months following the repair of any cathodically protected UST system, the cathodic protection system must be tested in accordance with § 50131(2) and(3) to ensure that it is operating properly; and

(8) Prior to the return to use of repaired spill or overfill prevention equipment, the repaired spill or overfill prevention equipment must be tested or inspected, as appropriate, in accordance with § 50135 to ensure it is operating properly.

(b) UST system owners and operators must maintain records, in accordance with § 50134, of each repair until the UST system is permanently closed or undergoes a change-in-service pursuant to § 50171.

§ 50134. Notification, Reporting, and Recordkeeping.

(a) Notification. Owners and operators shall notify the agency of any of the following changes in information relating to an UST or tank system by submitting the "Notification for Underground Storage Tanks" form prescribed by the Administrator:

(1) Planned permanent closure or change-in-service, scheduled excavation work for permanent closure or change-in-service, or completed closure or change-in-service;

(2) Temporary closure or the return to currently-in-use status;

(3) Changes in product dispensing method, dispenser, or under dispenser containment;

(4) Changes in financial responsibility mechanism;

(5) Changes in leak detection method;
(6) Changes in spill and overfill prevention method;
(7) Changes in piping;
(8) Changes in type of regulated substances stored;
(9) Changes in corrosion protection mechanism; and
(10) Installation of or changes in secondary containment.

(b) Timing of notification. Owners and operators shall submit the notifications required in subsection (a) within thirty (30) calendar days following any of the changes requiring notification, except that:

(1) Notification of planned permanent closure or change-in-service must be received by the agency at least thirty (30) calendar days before commencement of excavation work for closure or change-in-service;
(2) Notification of scheduled excavation work for permanent closure or change-in-service must be received by the agency at least seven (7) calendar days before the scheduled work date;
(3) Notification of change in type of regulated substance stored to a regulated substance containing greater than ten (10%) percent ethanol or greater than twenty (20%) percent biodiesel must be received by the agency at least thirty (30) calendar days before the change; and
(4) Notification of temporary closure must be received by the agency within thirty (30) calendar days of the UST system having met the definition of temporary closure in § 50112.

(c) Reporting. Owners and operators must submit the following information to the agency:

(1) Reports of all releases including suspected releases § 50150 and § 50152, spills and overfills § 50153, and confirmed releases § 50161;
(2) Release response actions planned or taken, including initial abatement measures § 50162, initial site characterization § 50163, free product removal § 50164, investigation of soil and groundwater cleanup § 50165, and corrective action plan § 50166.

(3) Quarterly release response reports § 50165.2;
(4) Current evidence of financial responsibility as required in § 501110; and
(5) Notice of changes in Designated Class A or B Operators § 501241(c).

(d) Recordkeeping. Owners and operators must maintain the following information:

(1) A corrosion expert's analysis of site corrosion potential if corrosion protection equipment is not used § 50120(b)(4); § 50120(c)(3);
(2) Documentation of operation of corrosion protection equipment § 50131(4);
(3) Documentation of compatibility for UST systems § 50132(c);
(4) Documentation of UST system repairs § 50133(b);
(5) Documentation of compliance for spill and overfill prevention equipment and containment sumps used for interstitial monitoring of piping § 50135(b);
(6) Documentation of periodic walkthrough inspections § 50136(b);
(7) Documentation of compliance with under-dispenser containment sensing device requirements § 50137(b);
(8) Documentation of compliance with release detection requirements § 50145;
(9) Results of the site investigation conducted at permanent closure or change-in-service § 50174;
(10) Documentation of operator training § 501245;
(11) Permits or variances or both, including all documentation, as specified in § 501334(a); and
(12) Evidence of current financial assurance mechanisms used to demonstrate financial responsibility § 501111.

(e) Availability and maintenance of records.

(1) Owners and operators must keep the required records at the UST site or an alternative location approved by the agency.
(2) Owners and operators must make the records immediately available for inspection by the agency at the UST site.

(3) Permanent closure records required under § 50174 may be maintained or submitted to the agency as provided in § 50174.

(f) Owners and operators of UST systems must cooperate fully with inspections, monitoring, and testing conducted by the agency, as well as requests by the agency for document submission, testing, and monitoring by the owner or operator pursuant to 10 GCA, Chapter 76.

§ 50135. Periodic Testing of Spill Prevention Equipment and Containment Sumps Used for Interstitial Monitoring of Piping and Periodic Inspection of Overfill Prevention Equipment.

(a) Owners and operators of UST systems with spill and overfill prevention equipment and containment sumps used for interstitial monitoring of piping must meet these requirements by October 13, 2018 to ensure the equipment is operating properly and will prevent releases to the environment:

(1) Spill prevention equipment (such as a catchment basin, spill bucket, or other spill containment device) must prevent releases to the environment by meeting one of the following:

(A) The equipment is double walled and the integrity of both walls is periodically monitored at a frequency not less than once every thirty (30) calendar days. Owners and operators must begin meeting the requirements of subparagraph (B) and conduct a test within thirty (30) calendar days of discontinuing periodic monitoring of this equipment; or

(B) The spill prevention equipment is tested at least once every three hundred sixty-five (365) calendar days to ensure the equipment is liquid tight by using vacuum, pressure, or liquid testing in accordance with one of the following criteria:

(i) Requirements developed by the manufacturer. (Note: Owners and operators may use this option only if the manufacturer has developed

requirements.);

(ii) Code of practice developed by a nationally recognized association or independent testing laboratory; or

(iii) Requirements determined by the agency to be no less protective of human health and the environment than the requirements listed in clauses (i) and (ii).

(2) Containment sumps used for interstitial monitoring of piping must prevent releases to the environment by meeting one of the following:

(A) The equipment is double walled and the integrity of both walls is periodically monitored at a frequency not less than annually. Owners and operators must begin meeting the requirements of subparagraph (B) and conduct a test within thirty (30) calendar days of discontinuing periodic monitoring of this equipment; or

(B) The containment sumps used for interstitial monitoring of piping are tested at least once every three (3) years to ensure the equipment is liquid tight by using vacuum, pressure, or liquid testing in accordance with one of the criteria in paragraph (1)(B)(i) to (iii).

(3) Overfill prevention equipment must be inspected at least once every three years. At a minimum, the inspection must ensure that overfill prevention equipment is set to activate at the correct level specified in § 50120(d) and will activate when regulated substance reaches that level. Inspections must be conducted in accordance with one of the criteria in paragraph (1)(B)(i) to (iii).

(b) Owners and operators must maintain records as follows (in accordance with § 50134 for spill prevention equipment, containment sumps used for interstitial monitoring of piping, and overfill prevention equipment:

(1) All records of testing or inspection must be maintained for three (3) years; and

(2) For spill prevention equipment not tested every three hundred sixty-five (365) calendar days and containment sumps used for interstitial monitoring of piping not tested every three (3) years, documentation showing that the prevention equipment is double walled and the integrity of both walls is periodically monitored must be maintained for as long as the equipment is periodically monitored.

§ 50136. Periodic Operation and Maintenance Walkthrough Inspections.

(a) To properly operate and maintain UST systems, not later than October 13, 2018, owners and operators must conduct walkthrough inspections that, at a minimum, check the following equipment as specified below:

(1) Every thirty (30) calendar days:

(A)Spill prevention equipment:

(i) Visually check for damage;

(ii) Remove liquid or debris;

(iii) Check for and remove obstructions in the fill pipe;

(iv) Check the fill cap to make sure it is securely on the fill pipe; and

(v) For double walled spill prevention equipment with interstitial monitoring, check for a leak in the interstitial area; and

(B) Release detection equipment:

(i) Check to make sure the release detection equipment is operating with no alarms or other unusual operating conditions present; and

(ii) Ensure records of release detection testing are reviewed and current;

(2) Annually:

(A) Containment sumps:

(i) Visually check for damage, leaks to the containment area, or releases to the

environment;

(ii) Remove liquid (in contained sumps) or debris; and

(iii) For double walled sumps with interstitial monitoring, check for a leak in the interstitial area; and

(B) Hand held release detection equipment: Check devices such as tank gauge sticks or groundwater bailers for operability and serviceability;

(3) For UST systems receiving deliveries at intervals greater than every thirty (30) calendar days, spill prevention equipment may be checked in accordance with paragraph (1)(A) prior to each delivery; and

(4) For airport hydrant systems, at least once every thirty (30) days if confined space entry according to the Occupational Safety and Health Administration is not required or at least annually if confined space entry is required (see 29 C.F.R. Part 1910):

A. Hydrant pits:

(i) Visually check for any damage;

(ii) Remove any liquid or debris; and

(iii) Check for any leaks; and

B. Hydrant piping vaults: Check for any hydrant piping leaks.

(b) Owners and operators must maintain records, in accordance with § 50134, of operation and maintenance walkthrough inspections for three (3) years. Records must include a list of each area checked, whether each area checked was acceptable or needed action taken, a description of actions taken to correct an issue, and delivery records if spill prevention equipment is checked less frequently than every thirty (30) calendar days due to infrequent deliveries.

§ 50137. Periodic Inspection and Maintenance of Under-Dispenser Containment Sensing Devices.

(a) Sensing devices for under-dispenser containment required by § 50125

must:

(1) Be operated and maintained in accordance with one of the following:
  (A) The manufacturer's instructions;
  (B) A code of practice developed by a nationally recognized association or independent testing laboratory; or
  (C) Requirements determined by the agency to be no less protective of human health and the environment than those in subparagraphs (A) and (B).

(2) Be inspected for proper operation, and electronic and mechanical components tested, at least annually.

(b) UST system owners and operators must maintain records in accordance with § 50134 demonstrating compliance with subsection (a). Written documentation of all inspection, testing, and maintenance must be maintained for at least three (3) years. All records that the UDC sensor and connected equipment are designed to produce must be maintained for at least three (3) years after the record is generated.

§ 50138. General Operating Requirements - Codes of Practice.

(a) The following current codes of practice may be used to comply with § 50130(a):

(1) the transfer procedures described in National Fire Protection Association Standard 385;

(2) "Standard for Tank Vehicles for Flammable and Combustible Liquids" or American Petroleum Institute Recommended Practice 1007;

(3) "Loading and Unloading of MC 306/DOT 406 Cargo Tank Motor Vehicles"; or

(4) Further guidance on spill and overfill prevention appears in American Petroleum Institute Recommended Practice 1621, "Bulk Liquid Stock Control at Retail Outlets".

(b) The following current codes of practice may be used to comply with § 50131(2):

(1) NACE International Test Method TM 0101, "Measurement Techniques Related to Criteria for Cathodic Protection of Underground Storage Tank Systems";

(2) NACE International Test Method TM0497, "Measurement Techniques Related to Criteria for Cathodic Protection on Underground or Submerged Metallic Piping Systems";

(3) Steel Tank Institute Recommended Practice R051, "Cathodic Protection Testing Procedures for STI–P3® USTs";

(4) NACE International Standard Practice SP 0285, "External Control of Underground Storage Tank Systems by Cathodic Protection"; or

(5) NACE International Standard Practice SP 0169, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems".

(c) The following current code of practice may be useful in complying with § 50132:

(1) American Petroleum Institute Recommended Practice 1626, "Storing and Handling Ethanol and Gasoline-Ethanol Blends at Distribution Terminals and Filling Stations".

(d) The following current codes of practice may be used to comply with § 50133(a)(1):

(1) National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code";

(2) American Petroleum Institute Recommended Practice RP 2200, "Repairing Crude Oil, Liquified Petroleum Gas, and Product Pipelines";

(3) American Petroleum Institute Recommended Practice RP 1631, "Interior Lining and Periodic Inspection of Underground Storage Tanks";

(4) National Fire Protection Association Standard 326, "Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair";

(5) National Leak Prevention Association Standard 631, Chapter A, "Entry, Cleaning, Interior Inspection, Repair, and Lining of Underground Storage Tanks";

(6) Steel Tank Institute Recommended Practice R972, "Recommended Practice for the Addition of Supplemental Anodes to STI–P3® Tanks";

(7) NACE International Standard Practice SP 0285, "External Control of Underground Storage Tank Systems by Cathodic Protection"; or

(8) Fiberglass Tank and Pipe Institute Recommended Practice T–95–02, "Remanufacturing of Fiberglass Reinforced Plastic (FRP) Underground Storage Tanks".

(e) The following current codes of practice may be used to comply with § 50133(a)(6):

(1) Steel Tank Institute Recommended Practice R012, "Recommended Practice for Interstitial Tightness Testing of Existing Underground Double Wall Steel Tanks";

(2) Fiberglass Tank and Pipe Institute Protocol, "Field Test Protocol for Testing the Annular Space of Installed Underground Fiberglass Double and Triple-Wall Tanks with Dry Annular Space"; or

(3) Petroleum Equipment Institute Recommended Practice RP1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities".

(f) The following current code of practice may be used to comply with § 50135(a)(1),(2),(3) and 50137(a)(1)(B):

(1) Petroleum Equipment Institute Publication RP1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities".

§ 50139. [Reserved.]

ARTICLE 4
RELEASE DETECTION

§ 50140. General Requirements for all UST Systems

§ 50141. Requirements for Petroleum UST Systems
§ 50142. Requirements for Hazardous Substance UST Systems
§ 50143. Methods of Release Detection for Tanks
§ 50144. Methods of Release Detection for Piping
§ 50145. Release Detection Recordkeeping
§ 50146. Release Detection – Code of Practice
§ 50147 to § 50149. [Reserved.]

§ 50140. General Requirements for all UST Systems.

(a) Owners and operators of UST systems must provide a method, or combination of methods, of release detection that:

(1) Can detect a release from any portion of the tank and the connected underground piping that routinely contains product;

(2) Utilizes equipment compatible with the regulated substances being stored;

(3) Is installed, calibrated, operated, and maintained in accordance with the manufacturer's instructions;

(4) Is operated and maintained, and electronic and mechanical components are tested for proper operation, in accordance with one of the following: manufacturer's instructions; a code of practice developed by a nationally recognized association or independent testing laboratory; or requirements determined by the agency to be no less protective of human health and the environment than the requirements of paragraphs (a)(1) to (3) of this section. All maintenance and service of the release detection equipment must be conducted by a technician with current certification or training appropriate to the equipment serviced. A test of the proper operation must be performed at least every three hundred sixty-five (365) calendar days, or in a time frame recommended by the equipment manufacturer, whichever is more frequent. Beginning October 13, 2018, as applicable to the facility, the test must cover at a minimum the following

components and criteria:

(A) Automatic tank gauge and other controllers: test alarm; verify system configuration; test battery backup;

(B) Probes and sensors: inspect for residual buildup; ensure floats move freely; ensure shaft is not damaged; ensure cables are free of kinks and breaks; test alarm operability and communication with controller;

(C) Automatic line leak detector: test operation to meet criteria in § 50144(1) by simulating a leak;

(D) Vacuum pumps and pressure gauges: ensure proper communication with sensors and controller; and

(E) Hand-held electronic sampling equipment associated with groundwater and vapor monitoring: ensure proper operation; and

(5) Meets the performance requirements in § 50143 or § 50144, as applicable, with any performance claims and their manner of determination described in writing by the equipment manufacturer or installer. In addition, the methods listed in § 50143 (2), (3), (4), (8), (9), and (10) and § 50144(1), (2), and (4) must be capable of detecting the leak rate or quantity specified for that method in the corresponding section of the rule with a probability of detection of 0.95 and a probability of false alarm of 0.05.

(b) When a release detection method operated in accordance with the performance standards in § 50143 or § 50144 indicates a release may have occurred, owners and operators must notify the agency in accordance with Article 5.

(c) Any UST system that cannot apply a method of release detection that complies with the requirements of this Article must complete the change-in-service or closure procedures in Article 7.

§ 50141. Requirements for Petroleum UST Systems.

(a) Tanks. Owners and operators of petroleum UST systems must provide release detection for tanks as follows:

(1) UST systems other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks:

(A) Tanks installed on or before April 11, 2016, must be monitored for releases at least every thirty (30) calendar days using one of the methods listed in § 50143(4) to (9), except that:

(i) UST systems that meet the performance standards in § 50120, and the monthly inventory control requirements in § 50143(1) or (2), may use tank tightness testing (conducted in accordance with § 50143(3) at least every five (5) years until ten (10) years after the tank was installed; and

(ii) Tanks with capacity of 550 gallons or less and tanks with a capacity of 551 to 1,000 gallons that meet the tank diameter criteria in § 50143(2) may use manual tank gauging (conducted in accordance with § 50143(2).

(B) Tanks installed after April 11, 2016 must be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7).

(2) Airport hydrant fuel distribution systems and UST systems with field-constructed tanks with a capacity less than or equal to 50,000 gallons:

(A) Tanks installed before October 13, 2015 must be monitored for releases at least every thirty (30) calendar days using one of the methods listed in § 50143(4) to (9), except that:

(i) UST systems that meet the performance standards in § 50120 and the monthly inventory control requirements in § 50143(1) or (2), may use tank tightness testing (conducted in accordance with § 50143(3) at least every

five (5) years until ten (10) years after the tank was installed; and

(ii) Tanks with capacity of 550 gallons or less and tanks with a capacity of 551 to 1,000 gallons that meet the tank diameter criteria in § 50143(2) may use manual tank gauging (conducted in accordance with § 50143(2).

(B) Tanks installed on or after October 13, 2015 must be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7).

(3) UST systems with field-constructed tanks with a capacity greater than 50,000 gallons:

(A) Tanks installed before October 13, 2015 must be monitored for releases at least every thirty (30) calendar days using one of the methods listed in § 50143(4), (7), (8), and (9) or use one or a combination of the methods of release detection listed in § 50143(10); and

(B) Tanks installed on or after October 13, 2015 must be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7).

(b) Piping. Underground piping that routinely contains regulated substances must be monitored for releases as follows:

(1) Piping installed on or before April 11, 2016, for UST systems other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must meet one of the following:

(A) Pressurized piping. Underground piping that conveys regulated substances under pressure must:

(i) Be equipped with an automatic line leak detector conducted in accordance with § 50144(1); and

(ii) Have an annual line tightness test conducted in accordance with § 50144(2) or have monthly monitoring conducted in accordance with §

50144(3).

(B) Suction piping. Underground piping that conveys regulated substances under suction must:

(i) Have a line tightness test conducted at least every three (3) years and in accordance with § 50144(2);

(ii) Use a monthly monitoring method conducted in accordance with § 50144(3); or

(iii) Meet the standards in paragraph (6)(A) to (E).

(2) Piping installed or replaced after April 11, 2016, for UST systems other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must meet one of the following:

(A) Pressurized piping. Underground piping that conveys regulated substances under pressure must:

(i) Be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7); and

(ii) Be equipped with an automatic line leak detector in accordance with § 50144(1).

(B) Suction piping. Underground piping that conveys regulated substances under suction must:

(i) Be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7); or

(ii) Meet the standards in paragraph (6)(A) to (E).

(3) Piping installed on or after October 13, 2015, for UST systems other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must meet the technical specifications in paragraph (2)(A) or (B).

(4) Piping for UST systems with field-constructed tanks with a capacity less than or equal to 50,000 gallons and not part of an airport hydrant fuel distribution system:

(A) Piping installed before October 13, 2015 must meet the technical specifications in paragraph (1)(A) or (B).

(B) Piping installed on or after October 13, 2015 must meet the technical specifications in paragraph (2)(A) or (B).

(5) Piping for airport hydrant fuel distribution systems and UST systems with field-constructed tanks with a capacity greater than 50,000 gallons must meet one of the following:

(A) Pressurized piping. Underground piping that conveys regulated substances under pressure must:

(i) Be equipped with an automatic line leak detector conducted in accordance with § 50144(1); and

(ii) Have an annual line tightness test conducted in accordance with § 50144(2) or have monthly monitoring conducted in accordance with any of the methods in § 50143(7) to (9) designed to detect a release from any portion of the underground piping that routinely contains regulated substances; or

(iii) Use one or a combination of the methods of release detection listed in § 50144(4).

(B) Suction piping. Underground piping that conveys regulated substances under suction must:

(i) Have a line tightness test conducted at least every three (3) years and in accordance with § 50144(2);

(ii) Use a monthly monitoring method conducted in accordance with § 50143(7) to (9) designed to detect a release from any portion of the underground piping that routinely contains

regulated substances;

(iii) Use one or a combination of the methods of release detection listed in § 50144(4); or

(iv) Meet the standards in paragraph (6)(A) to (E).

(6) No release detection is required for suction piping that is designed and constructed to meet the following standards:

(A) The below-grade piping operates at less than atmospheric pressure;

(B) The below-grade piping is sloped so that the contents of the pipe will drain back into the storage tank if the suction is released;

(C) Only one check valve is included in each suction line;

(D) The check valve is located directly below and as close as practical to the suction pump; and

(E) A method is provided that allows compliance with subparagraphs (B) to (D) to be readily determined.

§ 50142. Requirements for Hazardous Substance UST Systems.

Owners and operators of hazardous substance UST systems must monitor these systems in accordance with § 50143(7) at least every thirty (30) calendar days. In addition, underground piping that conveys hazardous substances under pressure must be equipped with an automatic line leak detector in accordance with § 50144(1).

§ 50143. Methods of Release Detection for Tanks.

Each method of release detection for tanks used to meet the requirements of § 50140 to § 50142 must be conducted in accordance with the following:

(1) Inventory control. Product inventory control (or another test of equivalent performance) must be conducted monthly to

detect a release of at least one (1%) percent of flow-through plus one hundred thirty (130) gallons on a monthly basis in the following manner:

(A) Inventory volume measurements for regulated substance inputs, withdrawals, and the amount still remaining in the tank are recorded each operating day;

(B) The equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest one-eighth of an inch;

(C) If a manual measuring device is used (e.g., a gauge stick), the measurements must be made through a drop tube that extends to within one foot of the tank bottom. Level measurements shall be to the nearest one-eighth of an inch;

(D) The regulated substance inputs are reconciled with delivery receipts by measurement of the tank inventory volume before and after delivery;

(E) Deliveries are made through a drop tube that extends to within one foot of the tank bottom;

(F) Product dispensing is metered and recorded within the state standards for meter calibration or an accuracy of six cubic inches for every five (5) gallons of product withdrawn, and the meter is calibrated every three hundred sixty-five (365) calendar days; and

(G) The measurement of any water level in the bottom of the tank is made to the nearest one-eighth of an inch at least once a month.

(2) Manual tank gauging. Manual tank gauging must meet the following requirements:

(A) Tank liquid level measurements are taken at the beginning and ending of a period using the appropriate minimum duration of test value in the table below during which no liquid is added

to or removed from the tank;

(B) If a manual measuring device is used (e.g., a gauge stick), the measurements must be made through a drop tube that extends to within one foot of the tank bottom. Level measurements shall be to the nearest one-eighth of an inch;

(C) Level measurements are based on an average of two (2) consecutive stick readings at both the beginning and ending of the period;

(D) The equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest one-eighth of an inch;

(E) A release is suspected and subject to the requirements of Article 5 if the variation between beginning and ending measurements exceeds the weekly or monthly standards in the following table:

Nominal tank capacity	Minimum duration of test	Weekly standard (one test)	Monthly standard (four test average)
550 gallons or less	36 hours	10 gallons	5 gallons
551–1,000 gallons (when tank diameter is 64 inches)	44 hours	9 gallons	4 gallons
551–1,000 gallons (when tank diameter is 48 inches)	58 hours	12 gallons	6 gallons
551–1,000 gallons (also requires periodic tank tightness testing)	36 hours	13 gallons	7 gallons
1,001–2,000 gallons (also requires periodic tank tightness testing)	36 hours	26 gallons	13 gallons

(F) Tanks of five hundred fifty (550) gallons or less nominal capacity and tanks with a nominal capacity of five hundred fifty-one (551) to one thousand (1,000) gallons that meet the tank diameter criteria in the table in subparagraph (E) may use manual tank gauging as the sole method of release detection. All other tanks with a nominal capacity of five hundred fifty-one (551) to two thousand (2,000) gallons may

use manual tank gauging in place of inventory control in paragraph (1), combined with tank tightness testing as indicated in the table. Tanks of greater than two thousand (2,000) gallons nominal capacity may not use this method to meet the requirements of this Article.

(3) Tank tightness testing. Tank tightness testing (or another test of equivalent performance) must be capable of detecting a 0.1 gallon per hour leak rate from any portion of the tank that routinely contains product while accounting for the effects of thermal expansion or contraction of the product, vapor pockets, tank deformation, evaporation or condensation, and the location of the water table.

(4) Automatic tank gauging. Equipment for automatic tank gauging that test for the loss of product and conducts inventory control must meet the following requirements:

(A) The automatic product level monitor test can detect a 0.2 gallon per hour leak rate from any portion of the tank that routinely contains product;

(B) The automatic tank gauging equipment must meet the inventory control (or other test of equivalent performance) requirements of paragraph (1); and

(C) The test must be performed with the system operating in one of the following modes:

(i) In-tank static testing conducted at least once every thirty (30) calendar days; or

(ii) Continuous in-tank leak detection operating on an uninterrupted basis or operating within a process that allows

the system to gather incremental measurements to determine the leak status of the tank at least once every thirty (30) calendar days.

(5) Vapor monitoring. Testing or monitoring for vapors within the soil gas of the excavation zone must meet the following requirements:

(A) The materials used as backfill are sufficiently porous (e.g., gravel, sand, crushed rock) to readily allow diffusion of vapors from releases into the excavation area;

(B) The stored regulated substance, or a tracer compound placed in the tank system, is sufficiently volatile (e.g., gasoline) to result in a vapor level that is detectable by the monitoring devices located in the excavation zone in the event of a release from the tank;

(C) The measurement of vapors by the monitoring device is not rendered inoperative by the groundwater, rainfall, or soil moisture or other known interferences so that a release could go undetected for more than thirty (30) calendar days;

(D) The level of background contamination in the excavation zone will not interfere with the method used to detect releases from the tank;

(E) The vapor monitors are designed and operated to detect any significant increase in concentration above background of the regulated substance stored in the tank system, a component or components of that substance, or a tracer compound placed in the tank system;

(F) In the UST excavation zone, the site is assessed to ensure compliance with the requirements in subparagraphs (A) to (D) and to establish the number and positioning of monitoring wells that will detect

releases within the excavation zone from any portion of the tank that routinely contains product; and

(G) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(6) Groundwater monitoring. Testing or monitoring for liquids on the groundwater must meet the following requirements:

(A) The regulated substance stored is immiscible in water and has a specific gravity of less than one;

(B) Groundwater is never more than twenty (20) feet from the ground surface and the hydraulic conductivity of the soils between the UST system and the monitoring wells or devices is not less than 0.01 cm/sec (e.g., the soil should consist of gravels, coarse to medium sands, coarse silts or other permeable materials);

(C) The slotted portion of the monitoring well casing must be designed to prevent migration of natural soils or filter pack into the well and to allow entry of regulated substance on the water table into the well under both high and low groundwater conditions;

(D) Monitoring wells shall be sealed from the ground surface to the top of the filter pack;

(E) Monitoring wells or devices intercept the excavation zone or are as close to it as is technically feasible;

(F) The continuous monitoring devices or manual methods used can detect the presence of at least one-eighth of an inch of free product on top of the groundwater in the monitoring wells;

(G) Within and immediately below the UST system excavation zone, the site is assessed to ensure compliance with the requirements in

subparagraphs (A) to (E) and to establish the number and positioning of monitoring wells or devices that will detect releases from any portion of the tank that routinely contains product; and

(H) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(7) Interstitial monitoring. Interstitial monitoring between the UST system and a secondary barrier immediately around or beneath it may be used, but only if the system is designed, constructed, and installed to detect a leak from any portion of the tank that routinely contains product and also meets one of the following requirements:

(A) For double walled UST systems, the sampling or testing method can detect a leak through the inner wall in any portion of the tank that routinely contains product;

(B) For UST systems with a secondary barrier within the excavation zone, the sampling or testing method used can detect a leak between the UST system and the secondary barrier;

(i) The secondary barrier around or beneath the UST system consists of artificially constructed material that is sufficiently thick and impermeable (at least 10^{-6} cm/sec for the regulated substance stored) to direct a leak to the monitoring point and permit its detection;

(ii) The barrier is compatible with the regulated substance stored so that a leak from the UST system will not cause a deterioration of the barrier allowing a

release to pass through undetected;

(iii) For cathodically protected tanks, the secondary barrier must be installed so that it does not interfere with the proper operation of the cathodic protection system;

(iv) The groundwater, soil moisture, or rainfall will not render the testing or sampling method used inoperative so that a release could go undetected for more than thirty (30) calendar days;

(v) The site is assessed to ensure that the secondary barrier is always above the groundwater and not in a twenty-five-year flood plain, unless the barrier and monitoring designs are for use under such conditions; and,

(vi) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(C) For tanks with an internally fitted liner, an automated device can detect a leak between the inner wall of the tank and the liner, and the liner is compatible with the substance stored.

(8) Statistical inventory reconciliation. Release detection methods based on the application of statistical principles to inventory data similar to those described in paragraph (1) must meet the following requirements:

(A) Report a quantitative result with a calculated leak rate;

(B) Be capable of detecting a leak rate of 0.2 gallon per hour or a release of one hundred fifty (150) gallons within thirty (30) calendar days; and

(C) Use a threshold that does not exceed one-half the minimum detectible leak rate.

(9) Other methods. Any other type of release detection method, or combination of methods, can be used if:

(A) It can detect a 0.2 gallon per hour leak rate or a release of one hundred fifty (150) gallons within a month with a probability of detection of 0.95 and a probability of false alarm of 0.05; or

(B) The owner and operator can demonstrate to the agency that the method can detect a release as effectively as any of the methods allowed in paragraphs (3) to (8), and the agency approves the method. In comparing methods, the agency shall consider the size of release that the method can detect and the frequency and reliability with which it can be detected. If the method is approved, the owner and operator must comply with any conditions imposed by the agency on its use to ensure the protection of human health and the environment.

(10) Methods of release detection for field-constructed tanks. One or a combination of the following methods of release detection for tanks may be used when allowed by § 50141.

(A) Conduct an annual tank tightness test that can detect a 0.5 gallon per hour leak rate;

(B) Use an automatic tank gauging system to perform release detection at least every thirty (30) calendar days that can detect a leak rate less than or equal to one (1) gallon per hour. This method must be combined with a tank tightness test that can detect a 0.2 gallon per hour leak rate performed at least every three (3) years;

(C) Use an automatic tank gauging system to perform release detection at least every thirty (30) calendar days that can detect a leak rate less than or equal to two (2) gallons per hour. This method must be combined with a tank tightness test that can detect a 0.2 gallon per hour leak rate performed at least every

two (2) years;

(D) Perform vapor monitoring (conducted in accordance with paragraph (5) for a tracer compound placed in the tank system) capable of detecting a 0.1 gallon per hour leak rate at least every two (2) years;

(E) Perform inventory control (conducted in accordance with Department of Defense Directive 4140.25, ATA Airport Fuel Facility Operations and Maintenance Guidance Manual, or equivalent procedures) at least every thirty (30) calendar days that can detect a leak equal to or less than 0.5 percent of flow-through; and

(i) Perform a tank tightness test that can detect a 0.5 gallon per hour leak rate at least every two (2) years; or

(ii) Perform vapor monitoring or groundwater monitoring (conducted in accordance with paragraph (5) or (6), respectively, for the stored regulated substance) at least every thirty (30) calendar days; or

(F) Another method approved by the agency if the owner and operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in subparagraphs (A) to (E). In comparing methods, the agency shall consider the size of release that the method can detect and the frequency and reliability of detection.

§ 50144. Methods of Release Detection for Piping.

Each method of release detection for piping used to meet the requirements of § 50140 to § 50142 must be conducted in accordance with the following:

(1) Automatic line leak detectors. Methods which alert the operator to the presence of a leak by restricting or shutting off the flow of regulated substances through piping may be used only if they detect leaks of three (3) gallons per hour at

ten (10) pounds per square inch line pressure within one hour. An annual test of the operation of the leak detector must be conducted in accordance with § 50140(a)(4).

(2) Line tightness testing. A periodic test of piping may be conducted only if it can detect a 0.1 gallon per hour leak rate at one and one-half times the operating pressure.

(3) Applicable tank methods. Any of the methods in § 50143(5) to (9) may be used if they are designed to detect a release from any portion of the underground piping that routinely contains regulated substances.

(4) Methods of release detection for piping associated with airport hydrant systems and field-constructed tanks. One or a combination of the following methods of release detection for piping may be used when allowed by § 50141.

(A) (i) Perform a semiannual or annual line tightness test at or above the piping operating pressure in accordance with the table below.

MAXIMUM LEAK DETECTION RATE PER TEST SECTION VOLUME

Test section volume (gallons)	Semiannual test—leak detection rate not to exceed (gallons per hour)	Annual test—leak detection rate not to exceed (gallons per hour)
<50,000	1.0	0.5
≥50,000 to <75,000	1.5	0.75
≥75,000 to <100,000	2.0	1.0
≥100,000	3.0	1.5

(ii) Piping segment volumes ≥100,000 gallons not capable of meeting the maximum 3.0 gallon per hour leak rate for the semiannual test may be tested at a leak rate up to 6.0 gallons per hour according to the following schedule:

PHASE IN FOR PIPING SEGMENTS ≥100,000 GALLONS IN VOLUME

First test	Not later than three years after the effective date of these rules (may use up to 6.0 gph leak rate).
Second test	Between three and six years after the effective date of these rules (may use up to 6.0 gph leak rate).
Third test	Between six and seven years after the effective date of these rules (must use 3.0 gph for leak rate).
Subsequent tests	Not later than seven years after the effective date of these rules, begin using semiannual or annual line testing according to the Maximum Leak Detection Rate Per Test Section Volume table above.

(B) Perform vapor monitoring (conducted in accordance with § 50143(5) for a tracer compound placed in the tank system) capable of detecting a 0.1 gallon per hour leak rate at least every two (2) years;

(C) Perform inventory control (conducted in accordance with Department of Defense Directive 4140.25, ATA Airport Fuel Facility Operations and Maintenance Guidance Manual, or equivalent procedures) at least every thirty (30) calendar days that can detect a leak equal to or less than 0.5 percent of flow-through; and

(i) Perform a line tightness test (conducted in accordance with subparagraph (A) using the leak rates for the semiannual test) at least every two (2) years; or

(ii) Perform vapor monitoring or groundwater monitoring (conducted in accordance with § 50143(5) or (6), respectively, for the stored regulated substance) at least every thirty (30) calendar days; or

(D) Another method approved by the agency if the owner and operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in subparagraphs (A) to (C). In comparing

methods, the agency shall consider the size of release that the method can detect and the frequency and reliability of detection.

§ 50145. Release Detection Recordkeeping.

All UST system owners and operators must maintain records in accordance with § 50134 demonstrating compliance with all applicable requirements of this subchapter. These records must include the following:

(1) All written performance claims pertaining to any release detection system used, and the manner in which these claims have been justified or tested by the equipment manufacturer or installer, must be maintained for the operating life of the UST system. Records of site assessments required under § 50143(5)(F) and (6)(G) must be maintained for as long as the methods are used. Records of site assessments developed after October 13, 2015, must be signed by a professional engineer or professional geologist, or equivalent licensed professional with experience in environmental engineering, hydrogeology, or other relevant technical discipline acceptable to the agency;

(2) The results of any sampling, testing, or monitoring must be maintained for at least three (3) years, except as follows:

(A) The results of annual operation tests conducted in accordance with § 50140(a)(4) must be maintained for three (3) years. At a minimum, the results must list each component tested, indicate whether each component tested meets criteria in § 50140(a)(4) or needs to have action taken, and describe any action taken to correct an issue;

(B) The results of tank tightness testing conducted in accordance with § 50143(3) must be retained until the next test is conducted; and

(C) The results of tank tightness testing, line tightness

testing, and vapor monitoring using a tracer compound placed in the tank system conducted in accordance with § 50143(10) or § 50144(4) must be retained until the next test is conducted;

(3) All records that the equipment being utilized to monitor or maintain the UST system is designed to produce must be maintained for at least three (3) years after the record is generated; and

(4) Written documentation of all calibration, maintenance, and repair of release detection equipment permanently located on-site must be maintained for at least three (3) years. Any schedules of required calibration and maintenance provided by the release detection equipment manufacturer must be retained for five (5) years from the date of installation.

§ 50146. Release Detection - Code of Practice.

The following current code of practice may be used to comply with § 50140(a)(4):

(1) Petroleum Equipment Institute Publication RP1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities"; and

(2) Practices described in the American Petroleum Institute Recommended Practice RP 1621, "Bulk Liquid Stock Control at Retail Outlets" may be used, where applicable, as guidance in meeting the requirements of § 50143(1).

§ 50147 to § 50149. [Reserved;]

ARTICLE 5
RELEASE REPORTING, INVESTIGATION, AND CONFIRMATION

§ 50150. Reporting of Suspected Release

§ 50151. Investigation of Off-site Impacts
§ 50152. Release Investigation and Confirmation Steps
§ 50153. Reporting and Cleanup of Spills and Overfill
§ 50154 to § 50159. [Reserved.]

§ 50150. Reporting of Suspected Release.

Owners and operators of UST systems must notify the agency within twenty-four (24) hours and follow the procedures in § 50152 for any of the following conditions:

(1) The discovery by any person of evidence of released regulated substances at the UST site or in the surrounding area (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface water).

(2) Unusual UST or tank system operating conditions observed or experienced by owners and operators (such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST system, an unexplained presence of water in the tank, or liquid in the interstitial space of secondarily contained systems), unless:

(A) The system equipment or component is found not to be releasing regulated substances to the environment;

(B) Any defective system equipment or component is immediately repaired or replaced; and

(C) For secondarily contained systems, except as provided for in § 50143(7)(B)(iv), any liquid in the interstitial space not used as part of the interstitial monitoring method (for example, brine filled) is immediately removed.

(3) Monitoring results, including investigation of an alarm, from a release detection method required under § 50141 and § 50142 that indicate a release may have occurred unless:

(A) The monitoring device is found to be defective, and is

immediately repaired, recalibrated or replaced, and additional monitoring does not confirm the initial result;

(B) The leak is contained in the secondary containment and:

(i) Except as provided for in § 50143(7)(B)(iv), any liquid in the interstitial space not used as part of the interstitial monitoring method (for example, brine filled) is immediately removed; and

(ii) Any defective system equipment or component is immediately repaired or replaced;

(C) In the case of inventory control described in § 50143(1), a second month of data does not confirm the initial result or the investigation determines no release has occurred; or

(D) The alarm was investigated and determined to be a non-release event (for example, from a power surge or caused by filling the tank during release detection testing).

§ 50151. Investigation of Off-site Impacts.

When required by the agency, owners and operators of UST systems must follow the procedures in § 50152 to determine if the UST system is the source of off-site impacts. These impacts include the discovery of regulated substances (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface and drinking waters) that has been observed by the agency or brought to the agency's attention by any person.

§ 50152. Release Investigation and Confirmation Steps.

(a) Unless release response action is initiated in accordance with Article 6, owners and operators must immediately investigate and

confirm all suspected releases of regulated substances requiring reporting under § 50150 within seven (7) calendar days following the discovery of the suspected release, unless a written request for extension of time is granted by the Administrator.

(b) Investigations and confirmations required in subsection (a) must use the following steps or another procedure approved by the agency:

(1) System test. Owners and operators must conduct tests (according to the requirements for tightness testing in § 50143(3) and § 50144(2) or, as appropriate, secondary containment testing described in § 50133(a)(6).

(A) The test must determine whether:

(i) A leak exists in that portion of the tank that routinely contains product, or the attached delivery piping; or

(ii) A breach of either wall of the secondary containment has occurred.

(B) If the system test confirms a leak into the interstice or a release, owners and operators must repair, replace, or close the UST system. In addition, owners and operators must begin release response action in accordance with Article 6 if the test results for the system, tank, or delivery piping indicate that a release exists.

(C) Further investigation is not required if the test results for the system, tank, and delivery piping do not indicate that a release exists and if environmental contamination is not the basis for suspecting a release.

(D) Owners and operators must conduct a site assessment as described in paragraph (2) if the test results for the system, tank, and delivery piping do not indicate that a release exists but environmental contamination is the basis for suspecting a release.

(2) Site assessment. Owners and operators must measure for

the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the nature of the stored substance, the type of initial alarm or cause for suspicion, the type of backfill and surrounding soil, the depth and flow of groundwater, and other factors as appropriate for identifying the presence and source of the release.

(A) If the test results for the excavation zone or the UST site indicate that a release has occurred, owners and operators must begin release response action in accordance with Article 6;

(B) If the test results for the excavation zone or the UST site do not indicate that a release has occurred, further investigation is not required.

(c) If it is determined that a release has not occurred, owners and operators must report the results of the investigation in writing to the agency within thirty (30) calendar days following discovery of the suspected release. The report shall include, but not be limited to, results of the tests required by subsection (b) as well as performance claims pursuant to § 50140(a)(5).

§ 50153. Reporting and Cleanup of Spills and Overfill.

(a) Owners and operators of UST systems must contain and immediately clean up all spills and overfills in a manner which is protective of human health and the environment as set forth in § 50165.3.

(b) Owners and operators must notify the agency within twenty-four (24) hours and begin release response action in accordance with Article 6 in the following cases:

(1) Spill or overfill of petroleum that results in a release to the environment that exceeds twenty-five (25) gallons or that causes a sheen on nearby surface waters; and

(2) Spill or overfill of hazardous substances that result in a release to the environment that equals or exceeds its reportable quantity under CERCLA (40 CFR part 302).

(c) Owners and operators of UST systems must contain and immediately clean up a spill or overfill of petroleum that is less than twenty-five (25) gallons or a spill or overfill of a hazardous substance that is less than the reportable quantity. If cleanup cannot be accomplished within twenty-four (24) hours, then the owners and operators must immediately notify the agency of the incident and continue cleaning up the spill or overfill. Owners and operators must also complete and submit to the agency a written report of the actions taken in response to the spill or overfill within fourteen (14) calendar days.

(d) An owner or operator must submit the appropriate forms listed in § 501111(b) documenting current evidence of financial responsibility to the Administrator within thirty (30) calendar days after identifying a release from an underground storage tank or tank system required to be reported under this section.

§ 50154 to § 50159. [Reserved.]

ARTICLE 6
RELEASE RESPONSE ACTION

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§ 50160. General.

Owners and operators of petroleum or hazardous substance UST systems must, in response to a confirmed release from the UST system, comply with the requirements of this Article, except for USTs excluded under § 50110(b) and UST systems subject to RCRA Subtitle C corrective action requirements under section 3004(u) of the Resource Conservation and Recovery Act, as amended.

§ 50161. Immediate Response Action.

(a) Upon confirmation of a release in accordance with § 50152 or after a release from the UST system is identified in any other manner, owners and operators must perform the following response actions within twenty-four (24) hours:

(1) Report the release to the agency by telephone;
(2) Take necessary actions to prevent any further release of the regulated substance into the environment, including removal of as much of the regulated substance from the UST or tank system as possible;
(3) Identify and mitigate any safety hazards (such as fire, explosion, and vapor hazards) posed by the release of the regulated substance; and
(4) Take necessary action to minimize the spread of contamination.

(b) Within seven (7) calendar days of confirmation, owners and operators must submit to the agency a written notice of confirmation. The notice shall include, but not be limited to, the following information: source of the release, method of discovery and confirmation, estimated quantity of substance released, type of substance released, immediate hazards, release impact, migration pathways, and actions taken.
(c) An owner or operator must submit the appropriate forms listed in §

501111(b) documenting current evidence of financial responsibility to the Administrator within thirty (30) calendar days after identifying a release from an underground storage tank or tank system required to be reported under this section.

§ 50161.1. Posting of Signs.

(a) If the agency determines that posting of signs is appropriate, owners and operators shall post signs around the perimeter of the site informing passersby of the potential hazards. In this instance, "site" means an area where contamination poses an immediate health risk or an area where contaminated media is exposed to the surface.
(b) Signs shall be placed at each entrance to the site and at other locations in sufficient numbers to be seen from any approach to the site.
(c) Signs shall be legible and readable from a distance of at least twenty-five (25) feet. The sign legend shall read, "Caution Petroleum/Hazardous Substance Contamination - Unauthorized Personnel Keep Out". Other sign legends may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the site and that entry onto the site may be dangerous. A contact person and telephone number shall be listed on the sign.
(d) The sign may be removed upon determination by the agency that no further release response action is necessary or that posting of signs is no longer appropriate.

§ 50162. Initial Abatement Measures and Site Assessment.

(a) Unless directed to do otherwise by the agency, owners and operators must perform the following abatement measures:

(1) Continue to remove as much of the regulated substance from the UST system as is necessary to prevent further release to the environment;

(2) Visually inspect the area around the UST or tank system for evidence of any aboveground releases or exposed belowground releases and continue to take necessary

actions to minimize the spread of contamination and to prevent further migration of the released substance into surrounding soils, air, surface water, and groundwater;

(3) Continue to monitor and mitigate any additional fire and safety hazards posed by vapors or free product that have migrated from the UST excavation zone and entered into subsurface structures (such as sewers or basements);

(4) Remedy hazards (such as dust and vapors and the potential for leachate generation) posed by contaminated soils and debris that are excavated or exposed as a result of release confirmation, site investigation, abatement, or release response action activities;

(5) Conduct an assessment of the release by measuring for the presence of a release where contamination is most likely to be present at the UST site, unless the presence and source of the release have been confirmed in accordance with the site assessment required by § 50152(b) or the site assessment required for change-in-service or permanent closure in § 50172(a). In selecting sample types, sample locations, and measurement methods, the owner and operator must consider the nature of the stored substance, the type of backfill and surrounding soil, depth and flow of groundwater and other factors as appropriate for identifying the presence and source of the release;

(6) Investigate to determine the possible presence of free product, and begin free product removal in accordance with § 50164;

(7) Remove or remediate contaminated soil at the site to the extent necessary to prevent the spread of free product; and

(8) If any of the remedies in this section include treatment or disposal of contaminated soils, owners or operators must comply with all applicable local, state, and federal requirements.

(b) Within twenty (20) calendar days after release confirmation, or within another reasonable period of time determined by the agency, owners and

operators must submit a report to the agency summarizing the initial abatement steps taken under subsection (a) and any resulting information or data.

§ 50163. Initial Site Characterization.

(a) Owners and operators must assemble information about the site and the nature of the release, including information gained while confirming the release or completing the initial abatement measures in § 50160 and § 50161. This information must include, but is not necessarily limited to the following:

(1) Data on the nature and estimated quantity of release;

(2) Data from available sources and all previous site investigations concerning the following factors: surrounding populations, water quality, use and approximate locations of wells potentially affected by the release, subsurface soil conditions, locations of subsurface sewers, climatological conditions, and land use;

(3) Results of the site assessment required under § 50162(a)(5); and

(4) Results of the free product investigations required under § 50162(a)(6), to be used by owners and operators to determine whether free product must be recovered under § 50164.

(b) Within forty-five (45) calendar days of release confirmation, or another reasonable period of time determined by the agency, owners and operators must submit the information collected in compliance with subsection (a) to the agency in a manner that demonstrates its applicability and technical adequacy.

§ 50164. Free Product Removal.

(a) At sites where investigations under § 50162(a)(6) indicate the presence of free product, owners and operators must remove free product to the maximum extent practicable as determined by the agency while continuing, as necessary, any actions initiated under §§ 50161 to 50163, or

preparing for actions required under §§ 50165 to 50166. In meeting the requirements of this section, owners and operators must:

(1) Conduct free product removal in a manner that minimizes the spread of contamination into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site, and that properly treats, discharges or disposes of recovery byproducts in compliance with applicable local, state, and federal regulations;

(2) Use abatement of free product migration as a minimum objective for the design of the free product removal system;

(3) Handle any flammable products in a safe and competent manner to prevent fires or explosions; and

(4) Prepare and submit to the agency, within forty-five (45) calendar days after confirming a release, a free product removal report that provides at least the following information:

(A) The name of the person responsible for implementing the free product removal measures;

(B) The estimated quantity, type, and thickness of free product observed or measured in wells, boreholes, and excavations;

(C) The type of free product recovery system used;

(D) Whether any discharge will take place on-site or off-site during the recovery operation and where this discharge will be located;

(E) The type of treatment applied to, and the effluent quality expected from, any discharge;

(F) All actions already performed or currently underway to remove free product, including steps that have been or are being taken to obtain necessary permits for any discharge;

(G) The disposition of the recovered free product; and

(H) Schedule for completion of free product removal.

(b) Owners and operators shall initiate free product removal as soon as practicable but no later than thirty (30) calendar days following confirmation of a release, or sooner if directed by the agency.

§ 50165. Investigation for Soil and Groundwater Cleanup.

(a) In order to determine the full extent and location of soils contaminated by the release and the presence and concentrations of dissolved product contamination in the groundwater and surface water, owners and operators must conduct investigations of the release, the release site, and the surrounding area possibly affected by the release if any of the following conditions exist:

(1) There is evidence that groundwater wells have been affected by the release (e.g., as found during release confirmation or previous release response actions);

(2) Free product is found to need recovery in compliance with § 50164;

(3) There is evidence that contaminated soils may be in contact with groundwater (e.g., as found during conduct of the initial response measures or investigations required under §§ 50160 to 50164; and

(4) The agency requests an investigation, based on the potential effects of contaminated soil or groundwater on nearby surface water and groundwater resources.

(b) Owners and operators must include information collected in accordance with this section with each quarterly report required pursuant to § 50165.2.

§ 50165.1. Notification of Confirmed Release.

(a) Within ninety (90) calendar days following confirmation of a release, the owner and operator shall notify those members of the public directly affected by the release in writing of the release and the proposed response to the release, including a historical account of actions performed since the discovery of the release. Members of the public directly affected by the release shall include:

(1) Persons who own, hold a lease for, or have easements at, any property on which the regulated substance released from the UST was discovered; and

(2) Other persons identified by the Administrator.

(b) The owner and operator shall send a letter to all members of the public directly affected by the release. Model language for the letter shall be provided by the agency and shall include at least the following information:

(1) Name and address of the UST or UST system;

(2) Statement that a release of regulated substance has been confirmed at the UST or UST system;

(3) Name of a contact person at the agency; and

(4) Reference to an attached factsheet pursuant to subsection (c).

(c) The letter to the members of the public directly affected by the release shall include a factsheet which contains the following information:

(1) Name and address of the UST or UST system;

(2) Name and address of the owner and operator of the UST or UST system;

(3) Name, address, and telephone contact of the party performing the cleanup activities;

(4) Date of the confirmed release;

(5) Nature and extent of the confirmed release;

(6) Summary of measures taken to assess the release and extent of contamination; and

(7) Summary of the proposed response to the release.

(d) The factsheet shall be updated on a quarterly basis and sent to all members of the public directly affected by the release. If additional members of the public directly affected by the release are identified in the

course of release response actions, then the owner and operator shall provide those persons with all previous and future letters and factsheets.
(e) The owner and operator shall include in the quarterly report required pursuant to § 50165.2 the following information:

(1) Copy of the letter pursuant to subsection (b);
(2) List of the members of the public directly affected by the release and to whom the letter was sent; and
(3) Copies of the factsheet and amended factsheets pursuant to subsections (c) and (d).

§ 50165.2. Release Response Reporting.

(a) No later than ninety (90) calendar days following the confirmation of a release, owners and operators must submit to the agency a written report in the format specified by the agency. The report must include:

(1) All release response actions taken pursuant to this Article during the first ninety-day (90) period (first quarter); and
(2) A plan for future release response actions to be taken.

(b) Beginning one hundred eighty (180) calendar days following confirmation of a release, owners and operators must submit to the agency written quarterly progress reports and an electronic copy of the written report in a format specified by the agency. The reports must document:

(1) All response actions taken pursuant to this subchapter after the last reported date;
(2) A plan for future release response actions to be taken; and
(3) Information required pursuant to § 50165.1.

(c) Quarterly progress reports are not required if:

(1) Response actions have met the requirements of § 50165.3; and
(2) A final quarterly report has been submitted.

§ 50165.3. Site Cleanup Criteria.

(a) Owners and operators must remediate soil, surface water, and groundwater, and materials contaminated by releases from USTs or tank systems in a manner that is protective of human health and the environment and achieves cleanup as described in subsection (b).
(b) Owners and operators must remediate contaminated soil, groundwater, and surface water at the site to residual concentrations that meet one of the following criteria:

(1) Default Tier 1 Screening Levels as presented in Table 1 in subsection (e); or

(2) Site-specific action levels as approved by the agency.

Owners and operators should consult with the agency on how the standards in this paragraph can be met. Site-specific action levels must take into account the following factors:

(A) For systemic toxicants, acceptable levels shall represent concentration levels to which the human population may be exposed without adverse effect during a lifetime or part of a lifetime, and incorporating an adequate margin of safety;

(B) For known or suspected carcinogens, acceptable levels are generally concentration levels in soil, groundwater and vapor that represent an excess upper bound lifetime cancer risk to an individual of between 10^{-4} and 10^{-6} using information on the relationship between dose and response. The 10^{-6} excess risk level shall be used as the point of departure for determining acceptable levels for alternatives when chemical-specific state or federal requirements are not available or are not sufficiently protective because of the presence of multiple contaminants at the site or multiple pathways of exposure;

(C) Impacts to ecological receptors, including but not limited to plants and animals; and

(D) Other applicable requirements, including but not

limited to nuisance concerns for odor and taste, if applicable.

(c) The agency may require the owners and operators to modify cleanup activities being performed at a site if the agency determines that the activities are not being carried out in accordance with this subchapter, or are not achieving cleanup levels that are protective of human health and the environment. The agency may impose modifications to cleanup activities by written notice to the owners and operators, and the owners and operators must implement necessary changes to the cleanup activities in response to the agency's notice by a time schedule established by the agency.

(d) A schedule for estimated completion of site cleanup shall be included in each fourth quarter report required pursuant to § 50165.2(b).

(e) The figure labeled "Table 1. Tier 1 Screening Levels of Soil and Groundwater" is made a part of this subsection.

Table 1. Tier 1 Screening Levels for Soil and Groundwater

Contaminant	DRINKING WATER SOURCE THREATENED				DRINKING WATER SOURCE NOT THREATENED			
	Groundwater (ug/l)	Basis[1]	Soil (mg/kg)	Basis[2]	Groundwater (ug/l)	Basis[3]	Soil (mg/kg)	Basis[2]
Acenaphthene	15	-	120	L/VI	15	-	40	L/VI
Benzene	5.0	DWP	0.30	L	71	CAT	0.77	VI
Benzo(a)pyrene	0.05	-	3.6	DE	0.05	-	3.6	DE
Dichloroethylene, cis 1,2-	70	DWP	0.36	VI	620	CAT	0.36	VI
Dichloroethylene, trans 1,2-	100	DWP	3.6	VI	560	CAT	3.6	VI
Ethylbenzene	7.3	CAT	0.90	L	7.3	CAT	0.90	L
Fluoranthene	0.05	-	87	L	0.05	-	87	L
Lead	2.5	CAT	200	DE	2.5	CAT	200	DE
Methyl Tert Butyl Ether (MTBE)	5.0	DWS	0.028	L	730	CAT	2.3	VI
Naphthalene	12	CAT	3.1	L	12	CAT	3.1	L
Polychlorinated Biphenyls (PCBs)	0.014	-	1.2	DE	0;014	-	1.2	DE
Tetrachloethylene (PCE)	5.0	DWP	0.098	VI	53	CAT	0.098	VI
Toluene	9.8	CAT	0.78	L	9.8	CAT	0.78	L
TPH-gasolines	300	DWP	100	GC	500	CAT	100	GC
TPH-middle distillates	400	DWP	220	DE	640	CAT	220	DE
TPH-residual fuels	500	DWS	500	GC	640	CAT	500	GC
Trichloroethylene	5.0	DWP	0.089	VI	47	CAT	0.089	VI
Vinyl Chloride	2.0	DWP	0.036	VI	18	VI	0.036	VI
Xylenes	13	CAT	1.4	L	13	CAT	1.4	L

Notes to Table 1.

1. Drinking water screening levels are the lowest of screening levels for: drinking water primary maximum contaminant levels based on toxicity ("DWP"), drinking water secondary maximum contaminant levels based on taste and odor concerns ("DWS"), vapor intrusion ("VI"), and chronic aquatic toxicity ("CAT").

2. Soil screening levels are the lowest of screening levels for: direct exposure ("DE"), vapor intrusion ("VI"), leaching ("L"), and gross contamination ("GC").

3. Non-drinking water screening levels are the lowest of screening levels vapor intrusion ("VI"), chronic aquatic toxicity ("CAT"), and gross contamination ("GC").

§ 50166. Corrective Action.

(a) The agency may require that the owner and operator submit a written corrective action plan for responding to a release, if one or more of the following minimum threshold criteria are met:

(1) Actual or probable release to groundwater which is a drinking water supply;
(2) Actual or probable release to surface water which is a drinking water supply;
(3) Actual or probable release to air that poses a threat to public health;
(4) Actual or probable release to and extensive contamination of soil that poses a direct contact hazard due to uncontrolled access;
(5) Actual or probable existence of uncontrolled regulated substances that pose a direct contact hazard due to uncontrolled access;
(6) Actual or probable adverse impact to natural resources;
(7) Actual or probable imminent danger of fire or explosion; or

(8) A determination by the Administrator that a release poses a substantial endangerment to public health or welfare, the environment, or natural resources.

(b) If a plan is required, owners and operators must submit the plan to the agency in a format established by the agency within thirty (30) calendar days of the agency's request, unless an extension of time is granted by the agency.

(c) Corrective action plans which are required to be submitted to the agency shall be subject to the review and discretionary approval of the agency in accordance with the procedures set forth in this section. Owners and operators are responsible for submitting a corrective action plan that provides for adequate protection of human health and the environment as determined by the agency and must make necessary modifications to the plan when directed to do so by the agency.

(d) The agency will approve the corrective action plan only after ensuring that implementation of the plan will adequately protect human health, safety, and the environment. In making this determination, the agency will consider the following factors as appropriate:

(1) Physical and chemical characteristics of the regulated substance, including its toxicity, persistence, and potential for migration;

(2) Hydrogeologic characteristics of the facility and the surrounding area;

(3) Proximity, quality, and current and future uses of nearby surface water and groundwater;

(4) Potential effects of residual contamination on nearby surface water and groundwater;

(5) An exposure assessment; and

(6) All other information assembled in compliance with this subchapter.

(e) The public participation procedures set forth in § 50167 apply to all corrective action plans submitted under this section.

(f) Upon approval of a corrective action plan, owners and operators must implement the plan, including any modifications to the plan made by the agency. Owners and operators must monitor, evaluate, and report

quarterly to the agency the results of implementing the corrective action plan pursuant to this section and § 50165.2.

(g) Owners and operators who have been requested by the agency to submit a corrective action plan are encouraged to begin cleanup of contaminated soils, surface water, groundwater, and materials before the plan is approved by the agency provided that they:

(1) Notify the agency of their intention to begin cleanup;

(2) Ensure that cleanup measures undertaken are consistent with the cleanup actions required pursuant to § 50165.3;

(3) Comply with any conditions imposed by the agency, including halting cleanup or mitigating adverse consequences from cleanup activities; and

(4) Incorporate self-initiated cleanup measures in the corrective action plan that is submitted to the agency for approval.

§ 50167. Public Participation for Corrective Action Plans.

(a) The agency shall conduct public participation activities in accordance with subsections (c) through (h) when:

(1) A corrective action plan required pursuant to § 50166(a) has been submitted and the agency has made a tentative decision concerning the proposed plan; or

(2) Implementation of any previously approved corrective action plan has not achieved the cleanup levels established in the plan and termination of the plan is under consideration by the agency.

(b) The agency will provide notice to the public of the release and the applicable response as required in subsections (c) and (d). Costs for all public participation activities described in subsections (c) through (h) shall be borne by the owner and operator of the UST or UST system, including the costs of making copies of materials to the public under subsection (f).

(c) Notice to members of the public directly affected by the release, as defined in § 50165.1(a), shall be given in the form of a letter from the agency and shall include at least the following information:

(1) Name and address of the UST or UST system;

(2) Name and address of the owner and operator of the UST or UST system;
(3) Summary of the release information and the proposed or previously approved corrective action plan;
(4) The agency's tentative decision concerning the proposed corrective action plan or concerning the termination of the previously approved corrective action plan;
(5) Announcement that an informational meeting will be held in accordance with subsection (g);
(6) Request for comments on the corrective action plan and the agency's tentative decision; and
(7) Availability of information on the release and the agency's tentative decision.

(d) Notice to the general public shall be given in the form of a notice in a local newspaper and shall include at least the information required in subsection (c)(1) to (7).

(e) Comments shall be received by the agency no later than thirty (30) calendar days after the notice provided in subsections (c) and (d) or after the end of the public meeting held pursuant to subsection (g), if any, whichever occurs later.

(f) Information on the release, the proposed corrective action plan, and the agency's tentative decision on the plan shall be made available to the public for inspection upon request.

(g) Before approving a corrective action plan, the agency may conduct a public meeting to provide information and receive comments on the proposed plan. A meeting will be held if there is sufficient public interest. Public interest shall be indicated by written request to the agency.

(h) At the Administrator's discretion, a notice of final decision may be issued.

§ 50168 to § 50169. [Reserved.]

ARTICLE 7
OUT-OF-SERVICE UST SYSTEMS AND CLOSURE

§ 50170. Temporary Closure
§ 50171. Permanent Closure and Change-in-Service
§ 50172. Assessing the Site at Closure or Change-in-Service
§ 50173. Applicability to Previously Closed UST Systems
§ 50174. Closure Records
§ 50175. Closure--Code of Practice
§ 50176 - § 50189. [Reserved.]

§ 50170. Temporary Closure.

(a) When an UST system is temporarily closed, owners and operators must continue operation and maintenance of corrosion protection in accordance with § 50131, and applicable release detection in accordance with Article 4. Articles 5 and 6 must be complied with if a release is suspected or confirmed. Spill and overfill operation and maintenance testing and inspections in Article 3 are not required during temporary closure. If the UST system is empty, release detection and release detection operation and maintenance testing and inspections in Articles 3 and 4 are not required. The UST system is empty when all materials have been removed using commonly employed practices so that no more than 2.5 centimeters (one inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remain in the system.

(b) When an UST system is temporarily closed for ninety (90) calendar days or more, owners and operators must also comply with the following requirements:

(1) Leave vent lines open and functioning; and

(2) Cap and secure all other lines, pumps, manways, and ancillary equipment.

(c) When an UST system is temporarily closed for more than twelve (12) months, owners and operators must permanently close the UST system if it does not meet the applicable design, construction, and installation requirements in Article 2, except that the spill and overfill equipment requirements do not have to be met. Owners and operators must

permanently close the substandard UST systems at the end of this twelve-month period in accordance with §§ 50171 to 50174, unless the agency provides an extension of the twelve-month temporary closure period. Owners and operators must complete a site assessment in accordance with § 50172 before such an extension can be applied for.

§ 50171. Permanent Closure and Change-in-Service.

(a) At least thirty (30) calendar days before beginning either permanent closure or a change-in-service of an UST or tank system under subsections (c) and (d), owners and operators must notify the agency in writing of their intent to permanently close or make the change-in-service, unless such action is in response to a confirmed release. The required assessment of the excavation zone under § 50172 must be performed after notifying the agency but before completion of the permanent closure or change-in-service.

(b) At least seven (7) calendar days before excavation work for a permanent closure or change-in-service, owners or operators must notify the agency of the exact date that the work will occur.

(c) To permanently close an UST or tank system, owners and operators must:

(1) Empty and clean the UST and tank system by removing all liquids and accumulated sludge;

(2) Remove the UST or tank system from the ground, fill the UST or tank system with an inert solid material, or close the tank in place in a manner approved by the agency; and

(3) Conduct a site assessment in accordance with § 50172.

(d) Continued use of an UST system to store a non-regulated substance is considered a change-in-service. Before a change-in-service, owners and operators must:

(1) Empty and clean the UST and tank system by removing all liquids and accumulated sludge; and

(2) Conduct a site assessment in accordance with § 50172.

(e) Within thirty (30) calendar days of completing a permanent closure or change-in-service, owners and operators must submit a notification to the

agency indicating completion of the closure or change-in-service.

§ 50172. Assessing the Site at Closure or Change-in-Service.

(a) Before permanent closure or a change-in-service is completed, owners and operators must measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the method of closure, the nature of the stored substance, the types of backfill and surrounding soil, the depth and flow of groundwater, and other factors appropriate for identifying the presence of a release.
(b) If contaminated soils, contaminated groundwater, or free product as a liquid or vapor is discovered under subsection (a), or by any other manner, owners and operators must begin release response action in accordance with Article 6.

§ 50173. Applicability to Previously Closed UST Systems.

(a) When directed by the agency, the owner and operator of an UST system permanently closed before December 22, 1988 must assess the excavation zone and close the UST system in accordance with this Article if releases from the UST may, in the judgment of the agency, pose a current or potential threat to human health and the environment.
(b) When directed by the agency, the owner and operator of an UST system with field-constructed tanks or an airport hydrant fuel distribution system permanently closed before October 13, 2015, must assess the excavation zone and close the UST system in accordance with this Article if releases from the UST may, in the judgment of the agency, pose a current or potential threat to human health and the environment.

§ 50174. Closure Records.

Owners and operators must maintain records in accordance with § 50134 that are capable of demonstrating compliance with closure requirements

under this Article. The results of the excavation zone assessment required in § 50172 must be maintained for at least three (3) years after completion of permanent closure or change-in-service in one of the following ways:

(1) By the owners and operators who took the UST system out of service;

(2) By the current owners and operators of the UST system site; or

(3) By mailing these records to the agency if they cannot be maintained at the closed facility.

§ 50175. Closure--Code of Practice.

The following current cleaning and closure procedures may be used to comply with § 50171:

(1) American Petroleum Institute Recommended Practice RP 1604, "Closure of Underground Petroleum Storage Tanks";

(2) American Petroleum Institute Standard 2015, "Safe Entry and Cleaning of Petroleum Storage Tanks, Planning and Managing Tank Entry From Decommissioning Through Recommissioning";

(3) American Petroleum Institute Recommended Practice 2016, "Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks";

(4) American Petroleum Institute Recommended Practice RP 1631, "Interior Lining and Periodic Inspection of Underground Storage Tanks", may be used as guidance for compliance with this section;

(5) National Fire Protection Association Standard 326, "Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair"; and

(6) National Institute for Occupational Safety and Health Publication 80–106, "Criteria for a Recommended Standard...Working in Confined Space", may be used as guidance for conducting safe closure procedures at some

tanks containing hazardous substances.

§§ 50176 to 50189. [Reserved.]

ARTICLE 8
FINANCIAL RESPONSIBILITY

§ 50190. Applicability
§ 50191. [Reserved]
§ 50192. Definition of Terms
§ 50193. Amount and Scope of Required Financial Responsibility
§ 50194. Allowable Mechanism and Combinations of Mechanisms
§ 50195. Financial Test of Self-Insurance
§ 50196. Guarantee
§ 50197. Insurance and Risk Retention Group Coverage
§ 50198. Surety Bond
§ 50199. Letter of Credit
§ 501100 to § 501101. [Reserved]
§ 501102. Trust Fund
§ 501103. Standby Trust Fund
§ 501104. Local Government Bond Rating Test
§ 501105. Local Government Financial Test
§ 501106. Local Government Guarantee
§ 501107. Local Government Fund
§ 501108. Substitution of Financial Assurance Mechanisms by Owner or Operator
§ 501109. Cancellation or Non-renewal by a Provider of Financial Assurance
§ 501110. Reporting by Owner or Operator
§ 501111. Record Keeping
§ 501112. Drawing of Financial Assurance Mechanisms
§ 501113. Release from the Requirements
§ 501114. Bankruptcy or Other Incapacity of Owner or Operator or Provider of Financial Assurance

§ 501115. Replenishment of Guarantee, Letters of Credit, or Surety Bond
§ 501116. to § 501199 [Reserved]

§ 50190. Applicability.

(a) This Article applies to owners and operators of all petroleum underground storage tank (UST) systems except as otherwise provided in this section.
(b) State and federal government entities whose debts and liabilities are the debts and liabilities of a state or the United States are exempt from the requirements of this Article.
(c) The requirements of this Article do not apply to owners and operators of any UST system described in § 50110(b), (c)(1), (c)(3), or (c)(4).
(d) If the owner and operator of a petroleum underground storage tank system are separate persons, only one person is required to demonstrate financial responsibility; however, both parties are liable in the event of noncompliance.

§ 50191. [Reserved.]

§ 50192. Definition of Terms.

When used in this Article, the following terms have the meanings given below:

"Accidental release" means any sudden or nonsudden release of petroleum arising from operating an underground storage tank system that results in a need for release response action and/or compensation for bodily injury or property damage neither expected nor intended by the tank system owner or operator.

"Bodily injury" shall have the meaning given to this term by applicable state law; however, this term shall not include those liabilities which, consistent with standard insurance industry practices, are excluded from coverage in liability insurance policies for bodily injury.

"Chief financial officer" in the case of local government owners and

operators, means the individual with the overall authority and responsibility for the collection, disbursement, and use of funds by the local government.

"Controlling interest" means direct ownership of at least fifty percent of the voting stock of another entity.

"Financial reporting year" means the latest consecutive twelve-month period for which any of the following reports used to support a financial test is prepared:

(1) A 10-K report submitted to the U.S. Securities and Exchange Commission;

(2) An annual report of tangible net worth submitted to Dun and Bradstreet; or

(3) Annual reports submitted to the Energy Information Administration or the Rural Utilities Service.

"Financial reporting year" may thus comprise a fiscal or a calendar year period.

"Legal defense cost" is any expense that an owner or operator or provider of financial assurance incurs in defending against claims or actions brought:

(1) By EPA or the state to require release response action or to recover the costs of release response action;

(2) By or on behalf of a third party for bodily injury or property damage caused by an accidental release; or

(3) By any person to enforce the terms of a financial assurance mechanism.

"Occurrence" means an accident, including continuous or repeated exposure to conditions, which results in a release from an underground storage tank system. This definition is intended to assist in the understanding of these regulations and is not intended either to limit the meaning of "occurrence" in a way that conflicts with standard insurance usage or to prevent the use of other standard insurance terms in place of "occurrence".

"Owner or operator", when the owner or operator is separate parties, refers to the party that is obtaining or has obtained financial assurances.

"Petroleum marketing facilities" include all facilities at which petroleum is produced or refined and all facilities from which petroleum is sold or transferred to other petroleum marketers or to the public.

"Property damage" shall have the meaning given this term by applicable state law. This term shall not include those liabilities which, consistent with standard insurance industry practices, are excluded from coverage in liability insurance policies for property damage. However, such exclusions for property damage shall not include response actions associated with releases from USTs or tank systems which are covered by the policy.

"Provider of financial assurance" means an entity that provides financial assurance to an owner or operator of an underground storage tank system through one of the financial mechanisms listed in §§ 50195 through 501107, including a guarantor, insurer, risk retention group, surety, issuer of a letter of credit, issuer of a state-required mechanism, or a state.

"Substantial business relationship" means the extent of a business relationship necessary under applicable state law to make a guarantee contract issued incident to that relationship valid and enforceable. A guarantee contract is issued "incident to that relationship" if it arises from and depends on existing economic transactions between the guarantor and the owner or operator.

"Substantial governmental relationship" means the extent of a governmental relationship necessary under applicable state law to make an added guarantee contract issued incident to that relationship valid and enforceable. A guarantee contract is issued "incident to that relationship" if it arises from a clear commonality of interest in the event of an UST or tank system release such as coterminous boundaries, overlapping constituencies, common groundwater aquifer, or other relationship other than monetary compensation that provides a motivation for the guarantor to provide a guarantee.

"Tangible net worth" means the tangible assets that remain after deducting liabilities; such assets do not include intangibles such as goodwill and rights to patents or royalties. For purposes of this definition, "assets" means all existing and all probable future economic benefits

obtained or controlled by a particular entity as a result of past transactions.

"Termination" under § 50197(b)(1) and (2) means only those changes that could result in a gap in coverage as where the insured has not obtained substitute coverage or has obtained substitute coverage with a different retroactive date than the retroactive date of the original policy.

§ 50193. Amount and Scope of Required Financial Responsibility.

(a) Owners or operators of petroleum USTs or tank systems must demonstrate financial responsibility for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum USTs or tank systems in at least the following per-occurrence amounts:

(1) For owners or operators of petroleum USTs or tank systems that are located at petroleum marketing facilities, or that handle an average of more than ten thousand gallons of petroleum per month based on annual throughput for the previous calendar year: $2,000,000; and

(2) For all other owners or operators of petroleum USTs or tank systems: $500,000.

(b) Owners or operators of petroleum USTs or tank systems must demonstrate financial responsibility for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum USTs or tank systems in at least the following annual aggregate amounts:

(1) For owners or operators of one to four petroleum USTs: $1,000,000; and

(2) For owners or operators of five or more petroleum USTs: $2,000,000.

(c) For the purposes of subsections (b) and (f) only, "a petroleum underground storage tank" or "a petroleum UST" means a single containment unit and does not mean combinations of single containment units.

(d) Except as provided in subsection (e), if the owner or

operator uses separate mechanisms or separate combinations of mechanisms to demonstrate financial responsibility for:

(1) Taking corrective action;

(2) Compensating third parties for bodily injury and property damage caused by sudden accidental releases; or

(3) Compensating third parties for bodily injury and property damage caused by nonsudden accidental releases, the amount of assurance provided by each mechanism or combination of mechanisms must be in the full amount specified in subsections (a) and (b).

(e) If an owner or operator uses separate mechanisms or separate combinations of mechanisms to demonstrate financial responsibility for different petroleum underground storage tanks, the annual aggregate required shall be based on the number of tanks covered by each such separate mechanism or combination of mechanisms.

(f) Owners or operators shall review the amount of aggregate assurance provided whenever additional petroleum underground storage tanks are acquired or installed. If the number of petroleum underground storage tanks for which assurance must be provided exceeds one hundred, the owner or operator shall demonstrate financial responsibility in the amount of at least $2,000,000 of annual aggregate assurance by the anniversary of the date on which the mechanism demonstrating financial responsibility became effective. If assurance is being demonstrated by a combination of mechanisms, the owner or operator shall demonstrate financial responsibility in the amount of at least $2,000,000 of annual aggregate assurance by the first-occurring effective date anniversary of any one of the mechanisms combined (other than a financial test or guarantee) to provide assurance.

(g) The amounts of assurance required under this section exclude legal defense costs.

(h) The required per-occurrence and annual aggregate coverage amounts do not in any way limit the liability of the owner or operator.

§ 50194. Allowable Mechanism and Combinations of Mechanisms.

(a) Subject to the limitations of subsections (b) and (c):

(1) An owner or operator, including a local government owner or operator, may use any one or combination of the mechanisms listed in §§ 50195 through 501103 to demonstrate financial responsibility under this Article for one or more USTs or tank systems; and

(2) A local government owner or operator may use any one or combination of the mechanisms listed in §§ 501104 through 501107 to demonstrate financial responsibility under this subchapter for one or more USTs or tank systems.

(b) An owner or operator may use a guarantee under § 50196 or surety bond under § 50198 to establish financial responsibility only if the State Attorney General has submitted a written statement to the administrator that a guarantee or surety bond executed as described in this section is a legally valid and enforceable obligation in the State.

(c) An owner or operator may use self-insurance in combination with a guarantee only if, for the purpose of meeting the requirements of the financial test under this rule, the financial statements of the owner or operator are not consolidated with the financial statements of the guarantor.

§ 50195. Financial Test of Self-Insurance.

(a) An owner or operator, and/or guarantor, may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by passing a financial test as specified in this section. To pass the financial test of self-insurance, the owner or operator, and/or guarantor, must meet the criteria of subsection (b) or (c) based on year-end financial statements for the latest completed fiscal year.

(b) (1) The owner or operator, and/or guarantor, must have a tangible net worth of at least ten times:

(A) The total of the applicable aggregate amount required by § 50193, Guam Administrative Rules and Regulations, based on the number of underground storage tanks for which a financial test is used to

demonstrate financial responsibility to the agency, to EPA, or to a state implementing agency under a state program approved by EPA under 40 C.F.R. part 281;

(B) The sum of the RCRA subtitle C corrective action cost estimates, the current closure and post-closure care cost estimates, and amount of liability coverage for which a financial test is used to demonstrate financial responsibility to demonstrate financial responsibility to the agency under 40 C.F.R. sections 261.143 and 261.147, as incorporated and amended in section 11-261.1-1, 40 C.F.R. sections 264.101, 264.143, 264.145, and 264.147, as incorporated and amended in section 11-264.1-1, and 40 C.F.R. sections 265.143, 265.145, and 265.147, as incorporated and amended in section 11-265.1-1, to EPA under 40 C.F.R. sections 261.143, 261.147, 264.101, 264.143, 264.145, 264.147, 265.143, 265.145, and 265.147, or to a state implementing agency under a state program authorized by EPA under 40 C.F.R. part 271; and

(C) The sum of current plugging and abandonment cost estimates for which a financial test is used to demonstrate financial responsibility to EPA under 40 C.F.R. section 144.63 or to a state implementing agency under a state program authorized by EPA under 40 C.F.R. part 145.

(2) The owner or operator, and/or guarantor, must have a tangible net worth of at least $10,000,000.

(3) The owner or operator, and/or guarantor, must have a letter signed by the chief financial officer worded as specified in subsection (d).

(4) The owner or operator, and/or guarantor, must either:

(A) File financial statements annually with the U.S. Securities and Exchange Commission, the Energy Information Administration, or the Rural Utilities Service; or

(B) Report annually the firm's tangible net worth to Dun and Bradstreet, and Dun and Bradstreet must have assigned the firm a financial strength rating of 4A or 5A.

(5) The firm's year-end financial statements, if independently audited, cannot include an adverse auditor's opinion, a disclaimer of opinion, or a "going concern" qualification.

(c) (1) The owner or operator, and/or guarantor, must meet the financial test requirements of 40 C.F.R. section 264.147(f)(1), substituting the appropriate amounts specified in § 50193(b)(1) and (2), Guam Administrative Rules and Regulations for the "amount of liability coverage" each time specified in that section.

(2) The fiscal year-end financial statements of the owner or operator, and/or guarantor, must be examined by an independent certified public accountant and be accompanied by the accountant's report of the examination.

(3) The firm's year-end financial statements cannot include an adverse auditor's opinion, a disclaimer of opinion, or a "going concern" qualification.

(4) The owner or operator, and/or guarantor, must have a letter signed by the chief financial officer, worded as specified in subsection (d).

(5) If the financial statements of the owner or operator, and/or guarantor, are not submitted annually to the U.S. Securities and Exchange Commission, the Energy Information Administration or the Rural Utilities Service, the owner or operator, and/or guarantor, must obtain a special report by an independent certified public accountant stating that:

(A) The accountant has compared the data that the letter from the chief financial officer specifies as having been derived from the latest year-end financial statements of the owner or operator, and/or guarantor, with the amounts in such financial statements; and

(B) In connection with that comparison, no matters came

to the accountant's attention, which caused the accountant to believe that the specified data should be adjusted.

(d) To demonstrate that it meets the financial test under subsection (b) or (c), the chief financial officer of the owner or operator, or guarantor, must sign, within one hundred twenty days of the close of each financial reporting year, as defined by the twelve-month period for which financial statements used to support the financial test are prepared, a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of the owner or operator, or guarantor]. This letter is in support of the use of [insert: "the financial test of self-insurance" or "guarantee" or both] to demonstrate financial responsibility for [insert: "taking corrective action" or "compensating third parties for bodily injury and property damage" or both] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s).

Underground storage tanks at the following facilities are assured by this financial test, or a corresponding financial test under EPA or another authorized state program, by this [insert: "owner or operator" or "guarantor"]:

[List for each facility: the name and address of the facility where tanks assured by this financial test are located, and whether tanks are assured by this financial test or a corresponding financial test under EPA or under a state program approved under 40 C.F.R. part 281. If separate mechanisms or combinations of mechanisms are being used to assure any of the tanks at this facility, list each tank assured by this financial test by the tank identification number provided in the notification submitted pursuant to 40 C.F.R. section 280.22, or in the permit applications submitted under §§ 501324 and

501326, Guam Administrative Rules and Regulations

A [insert: "financial test" and/or "guarantee"] is also used by this [insert: "owner or operator" or "guarantor"] to demonstrate evidence of financial responsibility in the following amounts under other EPA regulations or state programs authorized by EPA under 40 C.F.R. parts 271 and 145:

	Amount
EPA Regulations:	
Closure (§§261.143, 264.143, and 265.143)	$
Post-Closure Care (§§264.145 and 265.145)	
Liability Coverage (§§261.147, 264.147, and 265.147)	$
Corrective Action (§264.101(b))	
Plugging and Abandonment (§144.63)	$
	$
	$
Authorized State Programs:	
Closure	$
Post-Closure Care	$
Liability Coverage	$
Corrective Action	$
Plugging and Abandonment	$
TOTAL	$

This [insert: "owner or operator" or "guarantor"] has not received an adverse opinion, a disclaimer of opinion, or a "going concern" qualification from an independent auditor on his or her financial statements for the latest completed fiscal year.

[Fill in the information for Alternative I if the criteria of subsection (b) are being used to demonstrate compliance with the financial test requirements. Fill in the information for Alternative II if the criteria of

subsection (c) are being used to demonstrate compliance with the financial test requirements.]

ALTERNATIVE I

	Amount	
1. Amount of annual UST aggregate coverage being assured by a financial test, or guarantee or both	$	
2. Amount of corrective action, closure and post-closure care costs, liability coverage, and plugging and abandonment costs covered by a financial test, or guarantee or both	$	
3. Sum of lines 1 and 2	$	
4. Total tangible assets	$	
5. Total liabilities [if any of the amount reported on line 3 is included in total liabilities, you may deduct that amount from this line and add that amount to line 6]	$	
6. Tangible net worth [subtract line 5 from line 4]	$	
7. Is line 6 at least $10,000,000?	Yes	No
8. Is line 6 at least ten times line 3?	Yes	No
9. Have financial statements for the latest fiscal year been filed with the U.S. Securities and Exchange Commission?	Yes	No
10. Have financial statements for the latest fiscal year been filed with the federal Energy Information Administration?	Yes	No
11. Have financial statements for the latest fiscal year been filed with the federal Rural Utilities Service?	Yes	No
12. Has financial information been provided to Dun and Bradstreet, and has Dun and Bradstreet provided a financial strength rating of 4A or 5A? [Answer "Yes" only if both criteria have been met.]	Yes	No

ALTERNATIVE II

	Amount	
1. Amount of annual UST aggregate coverage being assured by a financial test, or guarantee or both	$	
2. Amount of corrective action, closure and post-closure care costs, liability coverage, and plugging and abandonment costs covered by a financial test, or guarantee or both	$	
3. Sum of lines 1 and 2	$	
4. Total tangible assets	$	
5. Total liabilities [if any of the amount reported on line 3 is included in total liabilities, you may deduct that amount from this line and add that amount to line 6]	$	
6. Tangible net worth [subtract line 5 from line 4]	$	
7. Total assets in the U.S. [required only if less than ninety per cent of assets are located in the U.S.]	$	
8. Is line 6 at least $10,000,000?	Yes	No
9. Is line 6 at least six times line 3?	Yes	No
10. Are at least ninety per cent of assets located in the U.S.? [If "No," complete line 11]	Yes	No
11. Is line 7 at least six times line 3?	Yes	No
[Fill in either lines 12-15 or lines 16-18:]		
12. Current assets	$	
13. Current liabilities	$	
14. Net working capital [subtract line 13 from line 12]	$	
15. Is line 14 at least six times line 3?	Yes	No
16. Current bond rating of most recent bond issue		

17. Name of rating service

18. Date of maturity of bond

19. Have financial statements for the latest fiscal year been filed with the U.S. Securities and Exchange Commission, the federal Energy Information Administration, or the federal Rural Utilities Service? Yes No

[If "No," please attach a report from an independent certified public accountant certifying that there are no material differences between the data as reported in lines 4-18 above and the financial statements for the latest fiscal year.]

[For both Alternative II and I complete the certification with this statement.]

I hereby certify that the wording of this letter is identical to the wording specified in § 50195(d), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Signature]
[Name]
[Title]
[Date]

(e) If an owner or operator using the test to provide financial assurance finds that he or she no longer meets the requirements of the financial test based on the year-end financial statements, the owner or operator must obtain alternative coverage within one hundred fifty days of the end of the year for which financial statements have been prepared.

(f) The Administrator may require reports of financial condition at any time from the owner or operator, and/or guarantor. If the Administrator finds, on the basis of such reports or other information, that the owner or operator, and/or guarantor, no longer meets the financial test requirements of subsections (b) or (c) and (d), the owner or operator must

obtain alternate coverage within thirty days after notification of such a finding.

(g) If the owner or operator fails to obtain alternate assurance within one hundred fifty days of finding that he or she no longer meets the requirements of the financial test based on the year-end financial statements, or within thirty days of notification by the Administrator that he or she no longer meets the requirements of the financial test, the owner or operator must notify the Administrator of such failure within ten days.

§ 50196. Guarantee.

(a) An owner or operator may satisfy the requirements of § 50193 by obtaining a guarantee that conforms to the requirements of this section. The guarantor must be:

(1) A firm that:

(A) Possesses a controlling interest in the owner or operator;

(B) Possesses a controlling interest in a firm described under subparagraph (A); or

(C) Is controlled through stock ownership by a common parent firm that possesses a controlling interest in the owner or operator; or

(2) A firm engaged in a substantial business relationship with the owner or operator and issuing the guarantee as an act incident to that business relationship.

(b) Within one hundred twenty days of the close of each financial reporting year the guarantor must demonstrate that it meets the financial test criteria of § 50195, Guam Administrative Rules and Regulations based on year-end financial statements for the latest completed financial reporting year by completing the letter from the chief financial officer described in § 50195(d), Guam Administrative Rules and Regulations and must deliver the letter to the owner or operator. If the guarantor fails to meet the requirements of the financial test at the end of any financial reporting year, within one hundred twenty days of the end of that financial reporting year the guarantor shall send by certified mail,

before cancellation or nonrenewal of the guarantee, notice to the owner or operator. If the Administrator notifies the guarantor that it no longer meets the requirements of the financial test of § 50195(b) or (c) and (d), Guam Administrative Rules and Regulations, the guarantor must notify the owner or operator within ten days of receiving such notification from the Administrator. In both cases, the guarantee will terminate no less than one hundred twenty days after the date the owner or operator receives the notification, as evidenced by the return receipt. The owner or operator must obtain alternative coverage as specified in § 501114(e), Guam Administrative Rules and Regulations.

(c) The guarantee must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

GUARANTEE

Guarantee made this [date] by [name of guaranteeing entity], a business entity organized under the laws of the State of [name of state], herein referred to as guarantor, to Guam Environmental Protection Agency and to any and all third parties, and obligees, on behalf of [owner or operator] of [business address].

Recitals.

(1) Guarantor meets or exceeds the financial test criteria of § 50195(b) or (c) and (d), Guam Administrative Rules and Regulations , and agrees to comply with the requirements for guarantors as specified in § 50196(b), Guam Administrative Rules and Regulations.

(2) [Owner or operator] owns or operates the following underground storage tank(s) covered by this guarantee: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. section 280.22, or in the permit

applications submitted under §§ 501324 and 501326 and the name and address of the facility.] This guarantee satisfies Article 8 of Guam Administrative Rules and Regulations, requirements for assuring funding for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the above-identified underground storage tank(s) in the amount of [insert dollar amount] per occurrence and [insert dollar amount] annual aggregate.

(3) [Insert appropriate phrase: "On behalf of our subsidiary" (if guarantor is corporate parent of the owner or operator); "On behalf of our affiliate" (if guarantor is a related firm of the owner or operator); or "Incident to our business relationship with" (if guarantor is providing the guarantee as an incident to a substantial business relationship with owner or operator)] [owner or operator], guarantor guarantees to Guam Environmental Protection Agency and to any and all third parties that:

In the event that [owner or operator] fails to provide alternative coverage within sixty days after receipt of a notice of cancellation of this guarantee and the Administrator of Guam Environmental Protection Agency has determined or suspects that a release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon instructions from the Administrator of Guam Environmental Protection Agency, shall fund a standby trust fund in accordance with the provisions of § 501112 Guam Administrative Rules and Regulations, in an amount not to exceed the coverage limits specified above.

In the event that the Administrator of Guam Environmental Protection Agency determines that [owner or operator] has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with Article 6 Guam Administrative Rules and Regulations, the guarantor, upon written instructions from the Administrator of Guam Environmental Protection Agency, shall fund a standby trust in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, in an amount not to

exceed the coverage limits specified above.

If [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by ["sudden" and/or "nonsudden"] accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written instructions from the Administrator of Guam Environmental Protection Agency, shall fund a standby trust in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, to satisfy such judgment(s), award(s), or settlement agreement(s) up to the limits of coverage specified above.

(4) Guarantor agrees that if, at the end of any fiscal year before cancellation of this guarantee, the guarantor fails to meet the financial test criteria of § 50195(b) or (c) and (d), Guam Administrative Rules and Regulations, guarantor shall send within one hundred twenty days of such failure, by certified mail, notice to [owner or operator]. The guarantee will terminate one hundred twenty days from the date of receipt of the notice by [owner or operator], as evidenced by the return receipt.

(5) Guarantor agrees to notify [owner or operator] by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within ten days after commencement of the proceeding.

(6) Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of [owner or operator] pursuant to Title 22, Guam Administrative Rules and Regulations, Chapter 50.

(7) Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] must comply with the applicable financial responsibility requirements of Article 8, Guam Administrative Rules and Regulations, for the above-identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to [owner or operator], such cancellation to become effective no earlier than one hundred twenty days after receipt of such notice by [owner or operator],

as evidenced by the return receipt.

(8) The guarantor's obligation does not apply to any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily damage or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

(9) Guarantor expressly waives notice of acceptance of this guarantee by the Guam Environmental Protection Agency, by any or all third parties, or by [owner or operator].

I hereby certify that the wording of this guarantee is identical to the wording specified in § 50196(c) Guam Administrative Rules and Regulations, as such regulations were constituted on the effective date shown immediately below.

Effective date:
[Name of guarantor]
[Authorized signature for guarantor]
[Name of person signing]
[Title of person signing]

Signature of witness or notary:

(d) An owner or operator who uses a guarantee to satisfy the requirements of § 50193 Guam Administrative Rules and Regulations must establish a standby trust fund when the guarantee is obtained. Under the terms of the guarantee, all amounts paid by the guarantor under the guarantee will be deposited directly into the standby trust fund in accordance with instructions from the Administrator of Guam Environmental Protection Agency under § 501112. This standby trust fund must meet the requirements specified in § 501103.

§ 50197. Insurance and Risk Retention Group Coverage.

(a) An owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by obtaining liability insurance that conforms to the requirements of this section from a qualified insurer or risk retention group. Such insurance may be in the form of a separate insurance policy or an endorsement to an existing insurance policy.

(b) Each insurance policy must be amended by an endorsement worded as specified in paragraph (l) or evidenced by a certificate of insurance worded as specified in paragraph (2), except that instructions in brackets must be replaced with the relevant information and the brackets deleted:

(1) ENDORSEMENT

Name: [name of each covered location]
Address: [address of each covered location]
Policy Number:
Period of Coverage: [current policy period]
Name of [Insurer or Risk Retention Group]:
Address of [Insurer or Risk Retention Group]:
Name of Insured:
Address of Insured:

Endorsement:

1. This endorsement certifies that the policy to which the endorsement is attached provides liability insurance covering the following underground storage tanks:

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility.] for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; in accordance with and subject to the limits of liability, exclusions, conditions, and other terms of the policy; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tank(s) identified above.

The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's or Group's liability; if the amount of coverage is different for different types of coverage or for different underground storage tanks or locations, indicate the amount of coverage for each type of coverage, and/or for each underground storage tank or location], exclusive of legal defense costs, which are subject to a separate limit under the policy. This coverage is provided under [policy number]. The effective date of said policy is [date].

2. The insurance afforded with respect to such

occurrences is subject to all of the terms and conditions of the policy; provided, however, that any provisions inconsistent with subsections (a) to (e) of this paragraph are hereby amended to conform with subsections (a) to (e);

a. Bankruptcy or insolvency of the insured shall not relieve the ["Insurer" or "Group"] of its obligations under the policy to which this endorsement is attached.

b. The ["Insurer" or "Group"] is liable for the payment of amounts within any deductible applicable to the policy to the provider of corrective action or a damaged third-party, with a right of reimbursement by the insured for any such payment made by the ["Insurer" or "Group"]. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated under another mechanism or combination of mechanisms as specified in §§ 50195 to 501102 and §§ 501104 to 501107, Guam Administrative Rules and Regulations.

c. Whenever requested by the Administrator of Guam Environmental Protection Agency, the ["Insurer" or "Group"] agrees to furnish to the Administrator of Guam Environmental Protection Agency a signed duplicate original of the policy and all endorsements.

d. Cancellation or any other termination of the insurance by the ["Insurer" or "Group"], except for non-payment of premium or misrepresentation by the insured, will be effective only upon written notice and only after the expiration of sixty days after a copy of such written notice is received by the insured. Cancellation for non-payment of premium or misrepresentation by the insured will be effective only upon written notice and only after expiration of a minimum of ten days after a copy of such written notice is received by the insured. Insert for claims-

made policies:

e. The insurance covers claims otherwise covered by the policy that are reported to the ["Insurer" or "Group"] within six months of the effective date of cancellation or non-renewal of the policy except where the new or renewed policy has the same retroactive date or a retroactive date earlier than that of the prior policy, and which arise out of any covered occurrence that commenced after the policy retroactive date, if applicable, and prior to such policy renewal or termination date. Claims reported during such extended reporting period are subject to the terms, conditions, limits, including limits of liability, and exclusions of the policy.]

I hereby certify that the wording of this instrument is identical to the wording in § 50197(b)(1) , Guam Administrative Rules and Regulations, and that the ["Insurer" or "Group"] is ["licensed to transact the business of insurance or eligible to provide insurance as an excess or surplus lines insurer in Guam"].

[Signature of authorized representative of Insurer or Risk Retention Group]
[Name of person signing]
[Title of person signing], Authorized Representative of [name of Insurer or Risk Retention Group]
[Address of Representative]

(2) CERTIFICATE OF INSURANCE

Name: [name of each covered location]
Address: [address of each covered location]
Policy Number:

Endorsement (if applicable):
Period of Coverage: [current policy period]
Name of [Insurer or Risk Retention Group]:
Address of [Insurer or Risk Retention Group]:
Name of Insured:
Address of Insured:

Certification:

1. [Name of Insurer or Risk Retention Group], [the "Insurer" or "Group"], as identified above, hereby certifies that it has issued liability insurance covering the following underground storage tank(s):

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility.] for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; in accordance with and subject to the limits of liability, exclusions, conditions, and other terms of the policy; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tank(s) identified above.

The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's or Group's liability; if the amount of coverage is different for different types of coverage or for different

underground storage tanks or locations, indicate the amount of coverage for each type of coverage and/or for each underground storage tank or location], exclusive of legal defense costs, which are subject to a separate limit under the policy. This coverage is provided under [policy number]. The effective date of said policy is [date].

2. The ["Insurer" or "Group"] further certifies the following with respect to the insurance described in Paragraph 1:

a. Bankruptcy or insolvency of the insured shall not relieve the ["Insurer" or "Group"] of its obligations under the policy to which this certificate applies.

b. The ["Insurer" or "Group"] is liable for the payment of amounts within any deductible applicable to the policy to the provider of corrective action or a damaged third-party, with a right of reimbursement by the insured for any such payment made by the ["Insurer" or "Group"]. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated under another mechanism or combination of mechanisms as specified in §§ 50195 to 501102 and 501104 to 501107, Guam Administrative Rules and Regulations.

c. Whenever requested by the Administrator of Guam Environmental Protection Agency, the ["Insurer" or "Group"] agrees to furnish to the Administrator a signed duplicate original of the policy and all endorsements.

d. Cancellation or any other termination of the insurance by the ["Insurer" or "Group"], except for non-payment of premium or misrepresentation by the insured, will be effective only upon written notice and only after the expiration of sixty days after a copy of such written notice is received by the insured. Cancellation for non-payment of premium or

misrepresentation by the insured will be effective only upon written notice and only after expiration of a minimum of ten days after a copy of such written notice is received by the insured. Insert for claims-made policies:

e. The insurance covers claims otherwise covered by the policy that are reported to the ["Insurer" or "Group"] within six months of the effective date of cancellation or non-renewal of the policy except where the new or renewed policy has the same retroactive date or a retroactive date earlier than that of the prior policy, and which arise out of any covered occurrence that commenced after the policy retroactive date, if applicable, and prior to such policy renewal or termination date. Claims reported during such extended reporting period are subject to the terms, conditions, limits, including limits of liability, and exclusions of the policy.]

I hereby certify that the wording of this instrument is identical to the wording in § 50197(b)(2), Guam Administrative Rules and Regulations, and that the ["Insurer" or "Group"] is ["licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in Guam"].

[Signature of authorized representative of Insurer]
[Type Name]
[Title], Authorized Representative of [name of Insurer or Risk Retention Group]
[Address of Representative]

(c) Each insurance policy must be issued by an insurer or a risk retention group that, at a minimum, is licensed to transact the business of

insurance or eligible to provide insurance as an excess or surplus lines insurer in Guam.

§ 50198. Surety Bond.

(a) An owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by obtaining a surety bond that conforms to the requirements of this section. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in the latest Circular 570 of the U.S. Department of the Treasury.

(b) The surety bond must be worded as follows, except that instructions in brackets must be replaced with the relevant information and the brackets deleted:

PERFORMANCE BOND

Date bond executed:
Period of coverage:
Principal: [legal name and business address of owner or operator]
Type of organization: [insert: "individual", "joint venture", "partnership", or "corporation"]
State of incorporation (if applicable):
Surety(ies): [name(s) and business address(es)]
Scope of Coverage: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility. List the coverage guaranteed by the bond: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"

"arising from operating the underground storage tank"].
Penal sums of bond:
Per occurrence $
Annual aggregate $
Surety's bond number:

Know All Persons by These Presents, that we, the Principal and Surety(ies), hereto are firmly bound to the Guam Environmental Protection Agency, in the above penal sums for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sums jointly and severally only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sums only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sums.

Whereas said Principal is required under Article 8, Guam Administrative Rules and Regulations, to provide financial assurance for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tanks identified above, and

Whereas said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

Now, therefore, the conditions of the obligation are such that if the Principal shall faithfully ["take corrective action, in accordance with Article 6, Guam Administrative Rules and Regulations, and the Administrator of Guam Environmental Protection Agency instructions for," and/or "compensate injured third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "sudden and nonsudden accidental

releases"] arising from operating the tank(s) identified above, or if the Principal shall provide alternate financial assurance, as specified in Article 8, Guam Administrative Rules and Regulations, within one hundred twenty days after the date the notice of cancellation is received by the Principal from the Surety(ies), then this obligation shall be null and void; otherwise it is to remain in full force and effect.

Such obligation does not apply to any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by the Administrator of Guam Environmental Protection Agency that the Principal has failed to ["take corrective action, in accordance with Article 6, Guam Administrative Rules and Regulations and the Administrator of Guam Environmental Protection Agency's instructions," and/or "compensate injured third parties"] as guaranteed by this bond, the Surety(ies) shall either perform ["corrective action in accordance with Chapter 50, Guam Administrative Rules and Regulations

and the Administrator of Guam Environmental Protection Agency's instructions," and/or "third party liability compensation"] or place funds in an amount up to the annual aggregate penal sum into the standby trust fund as directed by the Administrator of Guam Environmental Protection Agency under § 501112 , Guam Administrative Rules and Regulations.

Upon notification by the Administrator of Guam Environmental Protection Agency that the Principal has failed to provide alternate financial assurance within sixty days after the date the notice of cancellation is received by the determined or suspects that a release has occurred, the Surety(ies) shall place funds in an amount not exceeding the annual aggregate penal sum into the standby trust fund as directed by the Administrator of Guam Environmental Protection Agency and § 501112, Guam Administrative Rules and Regulations.

The Surety(ies) hereby waive(s) notification of amendments to applicable laws, statutes, rules, and regulations and agrees that no such amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the annual shall the obligation of the Surety(ies) hereunder exceed the amount of said annual aggregate penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal, provided, however, that cancellation shall not occur during the one hundred twenty days beginning on the date of return receipt.

The Principal may terminate this bond by sending written notice to the Surety(ies).

In Witness Thereof, the Principal and Surety(ies) have executed this Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in § 50198(b), Guam Administrative Rules and Regulations, as such regulations were constituted on the date this bond

was executed.

Principal
[Signature(s)]
[Name(s)]
[Title(s)]
[Corporate seal]

Corporate Surety(ies)
[Name and address]
State of Incorporation:
Liability limit: $
[Signature(s)]
[Name(s) and title(s)]
[Corporate seal]

[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]

Bond premium: $

(c) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. In all cases, the surety's liability is limited to the per-occurrence and annual aggregate penal sums.

(d) The owner or operator who uses a surety bond to satisfy the requirements of § 50193, Guam Administrative Rules and Regulations must establish a standby trust fund when the surety bond is acquired. Under the terms of the bond, all amounts paid by the surety under the bond will be deposited directly into the standby trust fund in accordance with instructions from the Administrator of Guam Environmental Protection Agency under § 501112, Guam Administrative Rules and Regulations. This standby trust fund must meet the requirements specified in § 501103, Guam Administrative Rules and Regulations.

§ 50199. Letter of Credit.

(a) An owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by obtaining an irrevocable standby letter of credit that conforms to the requirements of this section. The issuing institution must be an entity that has the authority to issue letters of credit in Guam and whose letter-of-credit operations are regulated and examined by a federal or Guam agency.

(b) The letter of credit must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

IRREVOCABLE STANDBY LETTER OF CREDIT

[Name and address of issuing institution]
[Name and address of the Administrator of Guam Environmental Protection Agency]

Dear Sir or Madam: We hereby establish our Irrevocable Standby Letter of Credit No. _ in your favor, at the request and for the account of [owner or operator name] of [address] up to the aggregate amount of [in words] U.S. dollars ($[insert dollar amount]), available upon presentation of

(1) Your sight draft, bearing reference to this letter of credit, No. _, and

(2) Your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under authority of 10 GCA Chapter 76."

This letter of credit may be drawn on to cover [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] arising from operating the underground storage tank(s) identified below in the amount of [in words] $[insert dollar amount] per occurrence and [in words] $[insert dollar amount] annual aggregate:

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than

one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. 280.22, or permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility.]

The letter of credit may not be drawn on to cover any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

This letter of credit is effective as of [date] and shall expire on [date], but such expiration date shall be automatically extended for a period of [at least the length of the original term] on [expiration date] and on each successive expiration date, unless, at least one hundred twenty days before the current expiration date, we notify [owner or operator] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date. In the event that [owner or operator] is so notified, any unused portion of the credit shall be available upon presentation of your sight draft for one hundred twenty days after the

date of receipt by [owner or operator], as shown on the signed return receipt.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us, and we shall deposit the amount of the draft directly into the standby trust fund of [owner or operator] in accordance with your instructions.

We certify that the wording of this letter of credit is identical to the wording specified in § 50199(b), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Signature(s) and title(s) of official(s) of issuing institution]
[Date]

This credit is subject to [insert: "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce," or "the Uniform Commercial Code"].

(c) An owner or operator who uses a letter of credit to satisfy the requirements of § 50193, Guam Administrative Rules and Regulations must also establish a standby trust fund when the letter of credit is acquired. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the Administrator will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Administrator of Guam Environmental Protection Agency under § 501112, Guam Administrative Rules and Regulations. This standby trust fund must meet the requirements specified in § 501103, Guam Administrative Rules and Regulations.

(d) The letter of credit must be irrevocable with a term specified by the issuing institution. The letter of credit must provide that credit be automatically renewed for the same term as the original term, unless, at least one hundred twenty days before the current expiration date, the issuing institution notifies the owner or operator by certified mail of its decision not to renew the letter of credit. Under the terms of the letter of

credit, the one hundred twenty days will begin on the date when the owner or operator receives the notice, as evidenced by the return receipt.

§ 501100 to § 501101. [Reserved.]

§ 501102. Trust Fund.

(a) An owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by establishing a trust fund that conforms to the requirements of this section. The trustee must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal agency or an agency of the state in which the fund is established.

(b) The wording of the trust agreement must be identical to the wording specified in § 501103(b)(1), Guam Administrative Rules and Regulations, and must be accompanied by a formal certification of acknowledgment as specified in § 501103(b)(2), Guam Administrative Rules and Regulations.

(c) The trust fund, when established, must be funded for the full required amount of coverage, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining required coverage.

(d) If the value of the trust fund is greater than the required amount of coverage, the owner or operator may submit a written request to the Administrator for release of the excess.

(e) If other financial assurance as specified in this subchapter is substituted for all or part of the trust fund, the owner or operator may submit a written request to the Administrator for release of the excess.

(f) Within sixty days after receiving a request from the owner or operator for release of funds as specified in subsection (d) or (e), the Administrator will instruct the trustee to release to the owner or operator such funds as the Administrator specifies in writing.

§ 501103. Standby Trust Fund.

a) An owner or operator using any one of the mechanisms authorized by §§ 50196, 50198, or 50199, Guam Administrative Rules and Regulations must establish a standby trust fund when the mechanism is acquired. The trustee of the standby trust fund must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal agency or an agency of the state in which the fund is established.

(b)(l) The standby trust agreement, or trust agreement, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

TRUST AGREEMENT

Trust agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator], a [name of state] [insert: "corporation", "partnership", "association", or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert: "Incorporated in the State of __" or "a national bank"], the "Trustee".

Whereas, Guam Environmental Protection Agency has established certain regulations applicable to the Grantor, requiring that an owner or operator of an underground storage tank shall provide assurance that funds will be available when needed for corrective action and third-party compensation for bodily injury and property damage caused by sudden and nonsudden accidental releases arising from the operation of the underground storage tank. The attached Schedule A lists the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located that are covered by the [insert "standby" where trust agreement is standby trust agreement] trust agreement;

[Whereas, the Grantor has elected to establish [insert either "a guarantee", "surety bond", or "letter of credit"] to

provide all or part of such financial assurance for the underground storage tanks identified herein and is required to establish a standby trust fund able to accept payments from the instrument (This paragraph is only applicable to the standby trust agreement.)];

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee;

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of the Financial Assurance Mechanism. This Agreement pertains to the [identify the financial assurance mechanism, either a guarantee, surety bond, or letter of credit, from which the standby trust fund is established to receive payments (This paragraph is only applicable to the standby trust agreement.)].

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, the "Fund," for the benefit of Guam Environmental Protection Agency. The Grantor and the Trustee intend that no third party have access to the Fund except as herein provided. [The Fund is established initially as a standby to receive payments and shall not consist of any property.] Payments made by the provider of financial assurance pursuant to the Administrator of Guam Environmental Protection Agency's instruction are transferred to the Trustee and are referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee

pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor as provider of financial assurance, any payments necessary to discharge any liability of the Grantor established by Guam Environmental Protection Agency.

Section 4. Payment for ["Corrective Action" or "Third-Party Liability Claims" or both]. The Trustee shall make payments from the Fund as the Administrator of Guam Environmental Protection Agency shall direct, in writing, to provide for the payment of the costs of [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] arising from operating the tanks covered by the financial assurance mechanism identified in this Agreement.

The Fund may not be drawn upon to cover any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum

underground storage tank;

(e) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193 Guam Administrative Rules and Regulations.

The Trustee shall reimburse the Grantor, or other persons as specified by the Administrator of Guam Environmental Protection Agency, from the Fund for corrective action expenditures and/or third-party liability claims, in such amounts as the Administrator shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the Administrator specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of cash and securities acceptable to the Trustee.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his or her duties with respect to the trust fund solely in the interest of the beneficiaries and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(i) Securities or other obligations of the Grantor, or any

other owner or operator of the tanks, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2(a), shall not be acquired or held, unless they are securities or other obligations of the federal or a state government;

(ii) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the federal or state government; and

(iii) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall

be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the federal or state government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund

shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any questions arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 11. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 12. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in writing sent to the Grantor and the present Trustee by certified mail ten days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in

Section 9.

Section 13. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Schedule B or such other designees as the Grantor may designate by amendment to Schedule B. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the Administrator of Guam Environmental Protection Agency to the Trustee shall be in writing, signed by the Administrator, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the Administrator hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or the Administrator of Guam Environmental Protection Agency, except as provided for herein.

Section 14. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor and the Trustee, or by the Trustee and the Administrator of Guam Environmental Protection Agency if the Grantor ceases to exist.

Section 15. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 14, this Trust shall be irrevocable and shall continue until terminated at the written direction of the Grantor and the Trustee, or by the Trustee and the Administrator of Guam Environmental Protection Agency, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration

expenses, shall be delivered to the Grantor.

Section 16. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the Administrator of Guam Environmental Protection Agency issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 17. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of Guam or the Comptroller of the Currency in the case of National Association banks.

Section 18. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

In Witness whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals (if applicable) to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in § 501103(b)(1), Guam Administrative Rules and Regulations, as such regulations were constituted on the date written above.

[Signature of Grantor]
[Name of the Grantor]

[Title]

Attest:
[Signature of Trustee]
[Name of the Trustee]
[Title]
[Seal]

[Signature of Witness]
[Name of the Witness]
[Title]
[Seal]

(2) The standby trust agreement, or trust agreement, must be accompanied by a formal certification of acknowledgment similar to the following:

State of ___
County of ___

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation; and that she/he signed her/his name thereto by like order.

[Signature of Notary Public]
[Name of Notary Public]

(c) The Administrator will instruct the trustee to refund the balance of the standby trust fund to the provider of financial assurance if

the Administrator determines that no additional corrective action costs or third-party liability claims will occur as a result of a release covered by the financial assurance mechanism for which the standby trust fund was established.

(d) An owner or operator may establish one trust fund as the depository mechanism for all funds assured in compliance with this rule.

§ 501104. Local Government Bond Rating Test.

(a) A general purpose local government owner or operator and/or local government serving as a guarantor may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by having a currently outstanding issue or issues of general obligation bonds of $1,000,000 or more, excluding refunded obligations, with a Moody's rating of Aaa, Aa, A, or Baa, or a Standard & Poor's rating of AAA, AA, A, or BBB. Where a local government has multiple outstanding issues, or where a local government's bonds are rated by both Moody's and Standard and Poor's, the lowest rating must be used to determine eligibility. Bonds that are backed by credit enhancement other than municipal bond insurance may not be considered in determining the amount of applicable bonds outstanding.

(b) A local government owner or operator or local government serving as a guarantor that is not a general-purpose local government and does not have the legal authority to issue general obligation bonds may satisfy the requirements of § 50193, Guam Administrative Rules and Regulation by having a currently outstanding issue or issues of revenue bonds of $1,000,000 or more, excluding refunded issues and by also having a Moody's rating of Aaa, Aa, A, or Baa, or a Standard & Poor's rating of AAA, AA, A or BBB as the lowest rating for any rated revenue bond issued by the local government. Where bonds are rated by both Moody's and Standard & Poor's, the lower rating for each bond must be used to determine eligibility. Bonds that are backed by credit enhancement may not be considered in determining the amount of applicable bonds outstanding.

(c) The local government owner or operator and/or guarantor

must maintain a copy of its bond rating published within the last twelve months by Moody's or Standard & Poor's.

(d) To demonstrate that it meets the local government bond rating test, the chief financial officer of a general purpose local government owner or operator and/or guarantor must sign a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM THE CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of local government owner or operator, or guarantor]. This letter is in support of the use of the bond rating test to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s).

Underground storage tanks at the following facilities are assured by this bond rating test: [List for each facility: the name and address of the facility where tanks are assured by the bond rating test].

The details of the issue date, maturity, outstanding amount, bond rating, and bond rating agency of all outstanding bond issues that are being used by [name of local government owner or operator, or guarantor] to demonstrate financial responsibility are as follows: [complete table]

Issue Date	Maturity Date	Outstanding Amount	Bond Rating	Rating Agency*

*[Moody's or Standard & Poor's]

The total outstanding obligation of [insert amount], excluding refunded bond issues, exceeds the minimum amount of $1,000,000. All outstanding general obligation bonds issued by this government that have been rated by Moody's or Standard & Poor's are rated as at least investment grade (Moody's Baa or Standard & Poor's BBB) based on the most recent ratings published within the last twelve months. Neither rating service has provided notification within the last twelve months of downgrading of bond ratings below investment grade or of withdrawal of bond rating other than for repayment of outstanding bond issues.

I hereby certify that the wording of this letter is identical to the wording specified in § 501104(d), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Date]
[Signature]
[Name]
[Title]

(e) To demonstrate that it meets the local government bond rating test, the chief financial officer of local government owner or operator and/or guarantor other than a general purpose government must sign a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM THE CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of local government owner or operator, or guarantor]. This letter is in support of the use of the bond rating test to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence

and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s). This local government is not organized to provide general governmental services and does not have the legal authority under state law or constitutional provisions to issue general obligation debt.

Underground storage tanks at the following facilities are assured by this bond rating test: [List for each facility: the name and address of the facility where tanks are assured by the bond rating test.]

The details of the issue date, maturity, outstanding amount, bond rating, and bond rating agency of all outstanding revenue bond issues that are being used by [name of local government owner or operator, or guarantor] to demonstrate financial responsibility are as follows: [complete table]

Issue Date	Maturity Date	Outstanding Amount	Bond Rating	Rating Agency*

*[Moody's or Standard & Poor's]

The total outstanding obligation of [insert amount], excluding refunded bond issues, exceeds the minimum amount of $1,000,000. All outstanding revenue bonds issued by this government that have been rated by Moody's or Standard & Poor's are rated as at least investment grade (Moody's Baa or Standard & Poor's BBB) based on the most recent ratings published within the last twelve months. The revenue bonds listed are not backed by third-party credit enhancement or insured by a municipal bond insurance company. Neither rating service has provided notification within the last twelve months of downgrading of bond ratings below investment grade or of withdrawal of bond rating other than for repayment of outstanding bond issues.

I hereby certify that the wording of this letter is identical to the wording specified in § 501104 (e), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown

immediately below.

[Date]
[Signature]
[Name]
[Title]

(f) The Administrator may require reports of financial condition at any time from the local government owner or operator and/or local government guarantor. If the Administrator finds, on the basis of such reports or other information, that the local government owner or operator and/or guarantor no longer meets the local government bond rating test requirements of this section, the local government owner or operator must obtain alternative coverage within thirty days after notification of such a finding.

(g) If a local government owner or operator using the bond rating test to provide financial assurance finds that it no longer meets the bond rating test requirements, the local government owner or operator must obtain alternative coverage within one hundred fifty days of the change in status.

(h) If the local government owner or operator fails to obtain alternate assurance within one hundred fifty days of finding that it no longer meets the requirements of the bond rating test or within thirty days of notification by the Administrator that it no longer meets the requirements of the bond rating test, the owner or operator must notify the Administrator of such failure within ten days.

§ 501105. Local Government Financial Test.

(a) A local government owner or operator may satisfy the requirements of § 50193 by passing the financial test specified in this section. To be eligible to use the financial test, the local government owner or operator must have the ability and authority to assess and levy taxes or to freely establish fees and charges. To pass the local government financial test, the owner or operator must meet the criteria of subsection

(b)(2) and (3) based on year-end financial statements for the latest completed fiscal year.

(b) (1) The local government owner or operator must have the following information available, as shown in the year-end financial statements for the latest completed fiscal year:

(A) Total Revenues: Consists of the sum of general fund operating and non-operating revenues including net local taxes, licenses and permits, fines and forfeitures, revenues from use of money and property, charges for services, investment earnings, sales (property, publications, etc.), intergovernmental revenues (restricted and unrestricted), and total revenues from all other governmental funds including enterprise, debt service, capital projects, and special revenues, but excluding revenues to funds held in a trust or agency capacity. For purposes of this test, the calculation of total revenues shall exclude all transfers between funds under the direct control of the local government using the financial test (interfund transfers), liquidation of investments, and issuance of debt.

(B) Total Expenditures: Consists of the sum of general fund operating and non-operating expenditures including public safety, public utilities, transportation, public works, environmental protection, cultural and recreational, community development, revenue sharing, employee benefits and compensation, office management, planning and zoning, capital projects, interest payments on debt, payments for retirement of debt principal, and total expenditures from all other governmental funds including enterprise, debt service, capital projects, and special revenues. For purposes of this test, the calculation of total expenditures shall exclude all transfers between funds under the direct control of

the local government using the financial test (interfund transfers).

(C) Local Revenues: Consists of total revenues (as defined in subparagraph (A)) minus the sum of all transfers from other governmental entities, including all monies received from federal, state, or local government sources.

(D) Debt Service: Consists of the sum of all interest and principal payments on all long-term credit obligations and all interest-bearing short-term credit obligations. Includes interest and principal payments on general obligation bonds, revenue bonds, notes, mortgages, judgments, and interest-bearing warrants. Excludes payments on non-interest-bearing short-term obligations, interfund obligations, amounts owed in a trust or agency capacity, and advances and contingent loans from other governments.

(E) Total Funds: Consists of the sum of cash and investment securities from all funds, including general, enterprise, debt service, capital projects, and special revenue funds, but excluding employee retirement funds, at the end of the local government's financial reporting year. Includes federal securities, federal agency securities, state and local government securities, and other securities such as bonds, notes and mortgages. For purposes of this test, the calculation of total funds shall exclude agency funds, private trust funds, accounts receivable, value of real property, and other non-security assets.

(F) Population consists of the number of people in the area served by the local government.

(2) The local government's year-end financial statements, if independently audited, cannot include an adverse auditor's opinion or a disclaimer of opinion. The local government cannot have outstanding issues of general obligation or

revenue bonds that are rated as less than investment grade.

(3) The local government owner or operator must have a letter signed by the chief financial officer worded as specified in subsection (c).

(c) To demonstrate that it meets the financial test under subsection (b), the chief financial officer of the local government owner or operator, must sign, within one hundred twenty days of the close of each financial reporting year, as defined by the twelve-month period for which financial statements used to support the financial test are prepared, a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of the owner or operator]. This letter is in support of the use of the local government financial test to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating [an] underground storage tank[s].

Underground storage tanks at the following facilities are assured by this financial test [List for each facility: the name and address of the facility where tanks assured by this financial test are located. If separate mechanisms or combinations of mechanisms are being used to assure any of the tanks at this facility, list each tank assured by this financial test by the tank identification number provided in the notification submitted pursuant to 10 GCA Chapter 76, 40 C.F.R. section 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations.

This owner or operator has not received an adverse opinion, or a disclaimer of opinion from an independent auditor on its financial statements for the latest completed fiscal year. Any outstanding issues of

general obligation or revenue bonds, if rated, have a Moody's rating of Aaa, Aa, A, or Baa or a Standard and Poor's rating of AAA, AA, A, or BBB; if rated by both firms, the bonds have a Moody's rating of Aaa, Aa, A or Baa and a Standard and Poor's rating of AAA, AA, A, or BBB.

WORKSHEET FOR MUNICIPAL FINANCIAL TEST

PART I: BASIC INFORMATION

1. Total Revenues
   a. Revenues (dollars)
      Value of revenues excludes liquidation of investments and issuance of debt. Value includes all general fund operating and non-operating revenues, as well as all revenues from all other governmental funds including enterprise, debt service, capital projects, and special revenues, but excluding revenues to funds held in a trust or agency capacity.
   b. Subtract interfund transfers (dollars)
   c. Total Revenues (dollars)
2. Total Expenditures
   a. Expenditures (dollars)
      Value consists of the sum of general fund operating and non-operating expenditures including interest payments on debt, payments for retirement of debt principal, and total expenditures from all other governmental funds including enterprise, debt service, capital projects, and special revenues.
   b. Subtract interfund transfers (dollars)
   c. Total Expenditures (dollars)
3. Local Revenues
   a. Total Revenues (from 1c) (dollars)
   b. Subtract total intergovernmental transfers (dollars)
   c. Local Revenues (dollars)
4. Debt Service

a. Interest and fiscal charges (dollars)
b. Add debt retirement (dollars)
c. Total Debt Service (dollars)

5. Total Funds (Dollars)
(Sum of amounts held as cash and investment securities from all funds, excluding amounts held for employee retirement funds, agency funds, and trust funds)
6. Population (Persons)

PART II: APPLICATION OF TEST

7. Total Revenues to Population
   a. Total Revenues (from 1c)
   b. Population (from 6)
   c. Divide 7a by 7b
   d. Subtract 417
   e. Divide by 5,212
   f. Multiply by 4.095
8. Total Expenses to Population
   a. Total Expenses (from 2c)
   b. Population (from 6)
   c. Divide 8a by 8b
   d. Subtract 524
   e. Divide by 5,401
   f. Multiply by 4.095
9. Local Revenues to Total Revenues
   a. Local Revenues (from 3c)
   b. Total Revenues (from 1c)
   c. Divide 9a by 9b
   d. Subtract 0.695
   e. Divide by 0.205
   f. Multiply by 2.840
10. Debt Service to Population
   a. Debt Service (from 4c)
   b. Population (from 6)

c. Divide 10a by 10b
d. Subtract 51
e. Divide by 1,038
f. Multiply by -1.866

11. Debt Service to Total Revenues
    a. Debt Service (from 4c)
    b. Total Revenues (from 1c)
    c. Divide 11a by 11b
    d. Subtract 0.068
    e. Divide by 0.259
    f. Multiply by -3.533
12. Total Revenues to Total Expenses
    a. Total Revenues (from 1c)
    b. Total Expenses (from 2c)
    c. Divide 12a by 12b
    d. Subtract 0.910
    e. Divide by 0.899
    f. Multiply by 3.458
13. Funds Balance to Total Revenues
    a. Total Funds (from 5)
    b. Total Revenues (from 1c)
    c. Divide 13a by 13b
    d. Subtract 0.891
    e. Divide by 9.156
    f. Multiply by 3.270
14. Funds Balance to Total Expenses
    a. Total Funds (from 5)
    b. Total Expenses (from 2c)
    c. Divide 14a by 14b
    d. Subtract 0.866
    e. Divide by 6.409
    f. Multiply by 3.270
15. Total Funds to Population
    a. Total Funds (from 5)
    b. Population (from 6)

c. Divide 15a by 15b
d. Subtract 270
e. Divide by 4,548
f. Multiply by 1.866

16. Add 7f+8f+9f+10f+11f+12f+13f+14f+15f+4.937

I hereby certify that the financial index shown on line 16 of the worksheet is greater than zero and that the wording of this letter is identical to the wording specified in § 501105(c), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Date]
[Signature]
[Name]
[Title]

(d) If a local government owner or operator using the test to provide financial assurance finds that it no longer meets the requirements of the financial test based on the year-end financial statements, the owner or operator must obtain alternative coverage within one hundred fifty days of the end of the year for which financial statements have been prepared.

(e) The Administrator may require reports of financial condition at any time from the local government owner or operator. If the Administrator finds, on the basis of such reports or other information, that the local government owner or operator no longer meets the financial test requirements of subsections (b) and (c), the owner or operator must obtain alternate coverage within thirty days after notification of such a finding.

(f) If the local government owner or operator fails to obtain alternate assurance within one hundred fifty days of finding that it no longer meets the requirements of the financial test based on the year-end financial statements or within thirty days of notification by the Administrator that it no longer meets the requirements of the financial test, the owner or operator must notify the Administrator of such failure

within ten days.

§ 501106. Local Government Guarantee.

(a) A local government owner or operator may satisfy the requirements of § 50193, by obtaining a guarantee that conforms to the requirements of this section. The guarantor must be a local government having a "substantial governmental relationship" with the owner or operator and issuing the guarantee as an act incident to that relationship. A local government acting, as the guarantor must:

(1) Demonstrate that it meets the bond rating test requirement of § 501104, and deliver a copy of the chief financial officer's letter as contained in § 591104(d) and (e), to the local government owner or operator;

(2) Demonstrate that it meets the worksheet test requirements of § 501105, and deliver a copy of the chief financial officer's letter as contained in § 501105(c), to the local government owner or operator; or

(3) Demonstrate that it meets the local government fund requirements of § 501107(1), (2), or (3), and deliver a copy of the chief financial officer's letter as contained in § 501107, to the local government owner or operator.

(b) If the local government guarantor is unable to demonstrate financial assurance under §§ 501104, 501105, or 501107(1), (2), or (3), at the end of the financial reporting year, the guarantor shall send by certified mail, before cancellation or non-renewal of the guarantee, notice to the owner or operator. The guarantee will terminate no less than one hundred twenty days after the date the owner or operator receives the notification, as evidenced by the return receipt. The owner or operator must obtain alternative coverage as specified in § 501114(e).

(c) The guarantee agreement must be worded as specified in subsection (d) or (e), depending on which of the following alternative guarantee arrangements is selected:

(1) If, in the default or incapacity of the owner or operator, the guarantor guarantees to fund a standby trust as directed by

the Administrator, the guarantee shall be worded as specified in subsection (d).

(2) If, in the default or incapacity of the owner or operator, the guarantor guarantees to make payments as directed by the Administrator for taking corrective action or compensating third parties for bodily injury and property damage, the guarantee shall be worded as specified in subsection (e).

(d) The local government guarantee with standby trust must be worded exactly as follows, except that instructions in brackets are to be replaced with relevant information and the brackets deleted:

LOCAL GOVERNMENT GUARANTEE WITH STANDBY TRUST MADE BY A LOCAL GOVERNMENT

Guarantee made this [date] by [name of guaranteeing entity], a local government organized under the laws of Guam, herein referred to as guarantor, to the Guam Environmental Protection Agency and to any and all third parties, and obliges, on behalf of [local government owner or operator].

Recitals

(1) Guarantor meets or exceeds [select one: the local government bond rating test requirements of § 501104, Guam Administrative Rules and Regulations, the local government financial test requirements of § 501105, Guam Administrative Rules, or the local government fund under § 501107(1),(2) or (3), Guam Administrative Rules and Regulations.

(2) [Local government owner or operator] owns or operates the following underground storage tank(s) covered by this guarantee: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 10 GCA Chapter 76, 40 C.F.R. section 280.22, or in the permit applications submitted under §§ 501324 and

501326, Guam Administrative Rules and Regulations, and the name and address of the facility.] This guarantee satisfies Article 8 requirements for assuring funding for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the above-identified underground storage tank(s) in the amount of [insert dollar amount] per occurrence and [insert: dollar amount] annual aggregate.

(3) Incident to our substantial governmental relationship with [local government owner or operator], guarantor guarantees to the Guam Environmental Protection Agency and to any and all third parties that:

In the event that [local government owner or operator] fails to provide alternative coverage within sixty days after receipt of a notice of cancellation of this guarantee and the Administrator of Guam Environmental Protection Agency has determined or suspects that a release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon instructions from the Administrator shall fund a standby trust fund in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, in an amount not to exceed the coverage limits specified above.

In the event that the Administrator determines that [local government owner or operator] has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with Article 6, the guarantor upon written instructions from the Administrator shall fund a standby trust fund in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, in an amount not to exceed the coverage limits specified above.

If [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by ["sudden" and/or "nonsudden"] accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written

instructions from the Administrator, shall fund a standby trust in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, to satisfy such judgment(s), award(s), or settlement agreement(s) up to the limits of coverage specified above.

(4) Guarantor agrees that, if at the end of any fiscal year before cancellation of this guarantee, the guarantor fails to meet or exceed the requirements of the financial responsibility mechanism specified in paragraph (1), guarantor shall send within one hundred twenty days of such failure, by certified mail, notice to [local government owner or operator], as evidenced by the return receipt.

(5) Guarantor agrees to notify [owner or operator] by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code naming guarantor as debtor, within ten days after commencement of the proceeding.

(6) Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of [owner or operator] pursuant to Article 1.

(7) Guarantor agrees to remain bound under this guarantee for so long as [local government owner or operator] must comply with the applicable financial responsibility requirements of Article 8, for the above identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to [owner or operator], such cancellation to become effective no earlier than one hundred twenty days after receipt of such notice by [owner or operator], as evidenced by the return receipt.

(8) The guarantor's obligation does not apply to any of the following:

(a) Any obligation of [local government owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert: local government owner or operator] arising from, and in the course of, employment by [insert: local government owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert: local government owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily damage or property damage for which [insert: owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

(9) Guarantor expressly waives notice of acceptance of this guarantee by the Guam Environmental Protection Agency, by any or all third parties, or by [local government owner or operator].

I hereby certify that the wording of this guarantee is identical to the wording specified in § 501106(d), Guam Administrative Rules and Regulations, as such regulations were constituted on the effective date shown immediately below.

Effective date:
[Name of guarantor]
[Authorized signature for guarantor]
[Name of person signing]
[Title of person signing]
Signature of witness or notary:

(e) The local government guarantee without standby trust must be worded exactly as follows, except that instructions in brackets are to be replaced with relevant information and the brackets deleted:

LOCAL GOVERNMENT GUARANTEE WITHOUT STANDBY TRUST MADE BY A LOCAL GOVERNMENT

Guarantee made this [date] by [name of guaranteeing entity], a local government organized under the laws of Guam, herein referred to as guarantor, to the Guam Environmental Protection Agency and to any and all third parties, and obliges, on behalf of [local government owner or

operator].

Recitals

(1) Guarantor meets or exceeds [select one: the local government bond rating test requirements of § 501104, Guam Administrative Rules and Regulations, the local government financial test requirements of § 501105, Guam Administrative Rules and Regulations, or the local government fund under § 501107(1),(2) or (3), Guam Administrative Rules and Regulations.

(2) [Local government owner or operator] owns or operates the following underground storage tank(s) covered by this guarantee: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 10 GCA Chapter 76, 40 C.F.R. section 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility.] This guarantee satisfies Article 8, requirements for assuring funding for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the above-identified underground storage tank(s) in the amount of [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate.

(3) Incident to our substantial governmental relationship with [local government owner or operator], guarantor guarantees to the Guam Environmental Protection Agency and to any and all third parties and obliges that:

In the event that [local government owner or operator] fails to provide alternative coverage within sixty days after receipt of a notice of cancellation of this guarantee and the Administrator of Guam

Environmental Protection Agency has determined or suspects that a release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon written instructions from the Administrator shall make funds available to pay for corrective actions and compensate third parties for bodily injury and property damage in an amount not to exceed the coverage limits specified above.

In the event that the Administrator determines that [local government owner or operator] has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with Article 6, the guarantor upon written instructions from the Administrator shall make funds available to pay for corrective actions in an amount not to exceed the coverage limits specified above.

If [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by ["sudden" and/or "nonsudden"] accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written instructions from the Administrator, shall make funds available to compensate third parties for bodily injury and property damage in an amount not to exceed the coverage limits specified above.

(4) Guarantor agrees that if at the end of any fiscal year before cancellation of this guarantee, the guarantor fails to meet or exceed the requirements of the financial responsibility mechanism specified in paragraph (1), guarantor shall send within one hundred twenty days of such failure, by certified mail, notice to [local government owner or operator], as evidenced by the return receipt.

(5) Guarantor agrees to notify [owner or operator] by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code naming guarantor as debtor, within ten days after commencement of the proceeding.

(6) Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of [owner or operator] pursuant to Chapter 50, Guam Administrative Rules and Regulations.

(7) Guarantor agrees to remain bound under this guarantee for so long as [local government owner or operator] must comply with the applicable financial responsibility requirements of Article 8, for the above identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to [owner or operator], such cancellation to become effective no earlier than one hundred twenty days after receipt of such notice by [owner or operator], as evidenced by the return receipt. If notified of a probable release, the guarantor agrees to remain bound to the terms of this guarantee for all charges arising from the release, up to the coverage limits specified above, notwithstanding the cancellation of the guarantee with respect to future releases.

(8) The guarantor's obligation does not apply to any of the following:

(a) Any obligation of [local government owner or operator] under a workers' compensation disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert: local government owner or operator] arising from and in the course of, employment by [insert: local government owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert: local government owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily damage or property damage for which [insert: owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

(9) Guarantor expressly waives notice of acceptance of this guarantee by the Guam Environmental Protection Agency, by any or all third parties, or by [local government owner or operator].

I hereby certify that the wording of this guarantee is identical to the

wording specified in § 501106(e), Guam Administrative Rules and Regulations, as such regulations were constituted on the effective date shown immediately below.

Effective date:
[Name of guarantor]
[Authorized signature for guarantor]
[Name of person signing]
[Title of person signing]
Signature of witness or notary:

§ 501107. Local Government Fund.

A local government owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by establishing a dedicated fund account that conforms to the requirements of this section. Except as specified in paragraph (2), a dedicated fund may not be commingled with other funds or otherwise used in normal operations. A dedicated fund will be considered eligible if it meets one of the following requirements:

(1) The fund is dedicated by state constitutional provision, or local government statute, charter, ordinance, or order to pay for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks or tank systems and is funded for the full amount of coverage required under § 50193, Guam Administrative Rules and Regulations, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage; or

(2) The fund is dedicated by state constitutional provision, or local government statute, charter, ordinance, or order as a contingency fund for general emergencies, including taking corrective action and compensating third parties for bodily

injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks or tank systems, and is funded for five times the full amount of coverage required under § 50193, Guam Administrative Rules and Regulations, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage. If the fund is funded for less than five times the amount of coverage required under § 50193, Guam Administrative Rules and Regulations, the amount of financial responsibility demonstrated by the fund may not exceed one-fifth the amount in the fund; or

(3) The fund is dedicated by state constitutional provision, or local government statute, charter, ordinance or order to pay for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks or tank systems. A payment is made to the fund once every year for seven years until the fund is fully-funded. This seven-year period is hereafter referred to as the "pay-in-period". The amount of each payment must be determined by this formula:

$$\frac{TF - CF}{Y}$$

Where TF is the total required financial assurance for the owner or operator, CF is the current amount in the fund, and Y is the number of years remaining in the pay-in-period, and;

(A) The local government owner or operator has available bonding authority, approved through voter referendum (if such approval is necessary prior to the issuance of bonds), for an amount equal to the difference between the required amount of coverage and the amount held in the dedicated fund. This bonding authority shall be available for taking

corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks or tank systems, or

(B) The local government owner or operator has a letter signed by the appropriate state attorney general stating that the use of the bonding authority will not increase the local government's debt beyond the legal debt ceilings established by the relevant state laws. The letter must also state that prior voter approval is not necessary before use of the bonding authority.

(4) To demonstrate that it meets the requirements of the local government fund, the chief financial officer of the local government owner or operator and/or guarantor must sign a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of local government owner or operator, or guarantor.] This letter is in support of the use of the local government fund mechanism to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s).

Underground storage tanks at the following facilities are assured by this local government fund mechanism: [List for each facility: the name and address of the facility where

tanks are assured by the local government fund].

[Insert: "The local government fund is funded for the full amount of coverage required under section § 50193, Guam Administrative Rules and Regulations, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage." or "The local government fund is funded for five times the full amount of coverage required under § 50193, Guam Administrative Rules and Regulations, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage." or "A payment is made to the fund once every year for seven years until the fund is fully-funded and [name of local government owner or operator] has available bonding authority, approved through voter referendum, of an amount equal to the difference between the required amount of coverage and the amount held in the dedicated fund" or "A payment is made to the fund once every year for seven years until the fund is fully-funded and I have attached a letter signed by the State Attorney General stating that (1) the use of the bonding authority will not increase the local government's debt beyond the legal debt ceilings established by the relevant state laws and (2) that prior voter approval is not necessary before use of the bonding authority"].

The details of the local government fund are as follows:

Amount in Fund (market value of fund at close of last fiscal year):

[If fund balance is incrementally funded as specified in § 501107(3), Guam Administrative Rules and Regulations, insert:

Amount added to fund in the most recently completed fiscal year:

Number of years remaining in the pay-in period:]

A copy of the state constitutional provision, or local government statute, charter, ordinance or order dedicating the fund is attached.

I hereby certify that the wording of this letter is identical to the wording specified in § 501107(4), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Date]
[Signature]
[Name]
[Title]

§ 501108. Substitution of Financial Assurance Mechanisms by Owner or operator.

(a) An owner or operator may substitute any alternate financial assurance mechanisms as specified in this subchapter, provided that at all times the owner or operator maintains an effective financial assurance mechanism or combination of mechanisms that satisfies the requirements of § 50193, Guam Administrative Rules and Regulations.

(b) After obtaining alternate financial assurance as specified in this Article, an owner or operator may cancel a financial assurance mechanism by providing notice to the provider of financial assurance.

§ 501109. Cancellation or Non-renewal by a Provider of Financial Assurance.

(a) Except as otherwise provided, a provider of financial assurance may cancel or fail to renew an assurance mechanism by sending a notice of termination by certified mail to the owner or operator.

(1) Termination of a local government guarantee, a guarantee, a surety bond, or a letter of credit may not occur until one hundred twenty days after the date on which the owner or

operator receives the notice of termination, as evidenced by the return receipt.

(2) Termination of insurance or risk retention coverage, except for non-payment or misrepresentation by the insured, may not occur until sixty days after the date on which the owner or operator receives the notice of termination, as evidenced by the return receipt. Termination for non-payment of premium or misrepresentation by the insured may not occur until a minimum of ten days after the date on which the owner or operator receives the notice of termination, as evidenced by the return receipt.

(b) If a provider of financial responsibility cancels or fails to renew for reasons other than incapacity of the provider as specified in § 501114, Guam Administrative Rules and Regulations, the owner or operator must obtain alternate coverage as specified in this Article within sixty days after receipt of the notice of termination. If the owner or operator fails to obtain alternate coverage within sixty days after receipt of the notice of termination, the owner or operator must notify the Administrator of such failure and submit:

(1) The name and address of the provider of financial assurance;

(2) The effective date of termination; and

(3) The evidence of the financial assurance mechanism subject to the termination maintained in accordance with § 501111(b), Guam Administrative Rules and Regulations.

§ 501110. Reporting by Owner or Operator.

(a) An owner or operator must submit the appropriate forms listed in § 501111(b), Guam Administrative Rules and Regulations documenting current evidence of financial responsibility to the Administrator:

(1) Within thirty days after the owner or operator identifies a release from an underground storage tank or tank system required to be reported under §§ 50153 or 50161, Guam Administrative Rules and Regulations;

(2) If the owner or operator fails to obtain alternate coverage as required by this subchapter, within thirty days after the owner or operator receives notice of:

(A) Commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a provider of financial assurance as a debtor;

(B) Suspension or revocation of the authority of a provider of financial assurance to issue a financial assurance mechanism;

(C) Failure of a guarantor to meet the requirements of the financial test; or

(D) Other incapacity of a provider of financial assurance; or

(3) As required by §§ 50195(g) and 501109(b).

(b) An owner or operator must certify compliance with the financial responsibility requirements of this subchapter as specified in the notification form submitted pursuant to 10 GCA Chapter 76, § 50134, Guam Administrative Rules and Regulations, or the permit applications under §§ 501324 and 501326, Guam Administrative Rules and Regulations.

(c) The Administrator may require an owner or operator to submit evidence of financial assurance as described in § 501111(b), Guam Administrative Rules and Regulations or other information relevant to compliance with this Article at any time.

§ 501111. Record Keeping.

(a) Owners or operators must maintain evidence of all financial assurance mechanisms used to demonstrate financial responsibility under this subchapter for an underground storage tank or tank system until released from the requirements of this Article under § 501113, Guam Administrative Rules and Regulations. An owner or operator must maintain such evidence at the underground storage tank or tank system site or the owner's or operator's place of work. Records maintained off-

site must be made available upon request of the Administrator.

(b) An owner or operator must maintain the following types of evidence of financial responsibility:

(1) An owner or operator using an assurance mechanism specified in §§ 50195 to 50199 or § 501102 or §§ 501104 to 501107, Guam Administrative Rules and Regulations must maintain a copy of the instrument worded as specified.

(2) An owner or operator using a financial test or guarantee, or a local government financial test or a local government guarantee supported by the local government financial test must maintain a copy of the chief financial officer's letter based on year-end financial statements for the most recent completed financial reporting year. Such evidence must be on file no later than one hundred twenty days after the close of the financial reporting year.

(3) An owner or operator using a guarantee, surety bond, or letter of credit must maintain a copy of the signed standby trust fund agreement and copies of any amendments to the agreement.

(4) A local government owner or operator using a local government guarantee under § 501106(d), Guam Administrative Rules and Regulations must maintain a copy of the signed standby trust fund agreement and copies of any amendments to the agreement.

(5) A local government owner or operator using the local government bond rating test under § 501104, Guam Administrative Rules and Regulations must maintain a copy of its bond rating published within the last twelve months by Moody's or Standard & Poor's.

(6) A local government owner or operator using the local government guarantee under § 501106, Guam Administrative Rules and Regulations, where the guarantor's demonstration of financial responsibility relies on the bond rating test under § 501104, Guam Administrative Rules and Regulations must maintain a copy

of the guarantor's bond rating published within the last twelve months by Moody's or Standard & Poor's.

(7) An owner or operator using an insurance policy or risk retention group coverage must maintain a copy of the signed insurance policy or risk retention group coverage policy, with the endorsement or certificate of insurance and any amendments to the agreements.

(8) An owner or operator using a local government fund under § 501107, Guam Administrative Rules and Regulations must maintain the following documents:

(A) A copy of the state constitutional provision or local government statute, charter, ordinance, or order dedicating the fund;

(B) Year-end financial statements for the most recent completed financial reporting year showing the amount in the fund. If the fund is established under § 501107(3), Guam Administrative Rules and Regulations using incremental funding backed by bonding authority, the financial statements must show the previous year's balance, the amount of funding during the year, and the closing balance in the fund; and

(C) If the fund is established under § 501107(3), Guam Administrative Rules and Regulations using incremental funding backed by bonding authority, the owner or operator must also maintain documentation of the required bonding authority, including either the results of a voter referendum (under § 501107(3)(A), Guam Administrative Rules and Regulations, or attestation by the state attorney general as specified under § 501107(3)(B), Guam Administrative Rules and Regulations).

(9) A local government owner or operator using the local government guarantee supported by the local government fund must maintain a copy of the guarantor's year-end

financial statements for the most recent completed financial reporting year showing the amount of the fund.

(10) (A) An owner or operator using an assurance mechanism specified in §§ 50195 to 501107, Guam Administrative Rule and Regulations must maintain an updated copy of a certification of financial responsibility worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CERTIFICATION OF FINANCIAL RESPONSIBILITY

[Owner or operator] hereby certifies that it is in compliance with the requirements of Article 8 of Chapter 50, Guam Administrative Rules and Regulations.

The financial assurance mechanism(s) used to demonstrate financial responsibility under Article 8 of Chapter 50, Guam Administrative Rules and Regulations, is (are) as follows:

[For each mechanism, list the type of mechanism, name of issuer, mechanism number (if applicable), amount of coverage, effective period of coverage and whether the mechanism covers "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases".]

[Signature of owner or operator]
[Name of owner or operator]
[Title]
[Date]
[Signature of witness or notary]
[Name of witness or notary]

[Date]

(B) The owner or operator must update this certification whenever the financial assurance mechanism(s) used to demonstrate financial responsibility change(s).

§ 501112. Drawing of Financial Assurance Mechanisms.

(a) Except as specified in subsection (d), the Administrator shall require the guarantor, surety, or institution issuing a letter of credit to place the amount of funds stipulated by the Administrator, up to the limit of funds provided by the financial assurance mechanism, into the standby trust if:

(1) (A) The owner or operator fails to establish alternate financial assurance within sixty days after receiving notice of cancellation of the guarantee, surety bond, letter of credit, or, as applicable, other financial assurance mechanism; and

(B) The Administrator determines or suspects that a release from an underground storage tank or tank system covered by the mechanism has occurred and so notifies the owner or operator or the owner or operator has notified the Administrator pursuant to Articles 5 or 6 of a release from an underground storage tank or tank system covered by the mechanism; or

(2) The conditions of subsection (b)(1), (b)(2)(A), or (b)(2)(B) are satisfied.

(b) The Administrator may draw on a standby trust fund when:

(1) The Administrator makes a final determination that a release has occurred and immediate or long-term corrective action for the release is needed, and the owner or operator, after appropriate notice and opportunity to comply, has not conducted release response action as required under Article 6; or

(2) The Administrator has received either:

(A) Certification from the owner or operator and the third-party liability claimant(s) and from attorneys representing the owner or operator and the third-party liability claimant(s) that a third-party liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CERTIFICATION OF A VALID CLAIM

The undersigned, as principals and as legal representatives of [insert: owner or operator] and [insert: name and address of third-party claimant], hereby certify that the claim of bodily injury [and/or] property damage caused by an accidental release arising from operating [owner's or operator's] underground storage tank should be paid in the amount of $[___].

[Signatures]
Owner or Operator
Attorney for Owner or Operator
(Notary)
Date
[Signatures]
Claimant(s)
Attorney(s) for Claimant(s)
(Notary)
Date

or;

(B) A valid final court order establishing a judgment against the owner or operator for bodily injury or

property damage caused by an accidental release from an underground storage tank or tank system covered by financial assurance under this subchapter and the Administrator determines that the owner or operator has not satisfied the judgment.

(c) If the Administrator determines that the amount of corrective action costs and third-party liability claims eligible for payment under subsection (b) may exceed the balance of the standby trust fund and the obligation of the provider of financial assurance, the first priority for payment shall be corrective action costs necessary to protect human health and the environment. The Administrator shall pay third-party liability claims in the order in which the Administrator receives certifications under subsection (b)(2)(A), and valid court orders under subsection (b)(2)(B).

(d) A governmental entity acting as guarantor under § 501106(e), Guam Administrative Rules and Regulations, the local government guarantee without standby trust, shall make payments as directed by the Administrator under the circumstances described in subsections (a), (b), and (c).

§ 501113. Release from the Requirements.

An owner or operator is no longer required to maintain financial responsibility under this subchapter for an underground storage tank or tank system after the tank or tank system has been permanently closed or undergoes a change-in-service or, if release response action is required, after release response action has been completed and the tank or tank system has been permanently closed or undergoes a change-in-service as required by Article 7.

§ 501114. Bankruptcy or Other Incapacity of Owner or Operator or Provider of Financial Assurance.

(a) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming

an owner or operator as debtor, the owner or operator must notify the Administrator by certified mail of such commencement and submit the appropriate forms listed in § 501111(b), Guam Administrative Rules and Regulations documenting current financial responsibility.

(b) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a guarantor providing financial assurance as debtor, such guarantor must notify the owner or operator by certified mail of such commencement as required under the terms of the guarantee specified in § 50196, Guam Administrative Rules and Regulations.

(c) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a local government owner or operator as debtor, the local government owner or operator must notify the Administrator by certified mail of such commencement and submit the appropriate forms listed in § 501111(b), Guam Administrative Rules and Regulations documenting current financial responsibility.

(d) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a guarantor providing a local government financial assurance as debtor, such guarantor must notify the local government owner or operator by certified mail of such commencement as required under the terms of the guarantee specified in § 501106, Guam Administrative Rules and Regulations.

(e) An owner or operator who obtains financial assurance by a mechanism other than the financial test of self-insurance will be deemed to be without the required financial assurance in the event of a bankruptcy or incapacity of its provider of financial assurance, or a suspension or revocation of the authority of the provider of financial assurance to issue a guarantee, insurance policy, risk retention group coverage policy, surety bond, or letter of credit. The owner or operator must obtain alternate financial assurance as specified in this Article within thirty days after receiving notice of such an event. If the owner or operator does not obtain alternate coverage within thirty days after such notification, the owner or operator must notify the Administrator.

§ 501115. Replenishment of Guarantee, Letters of Credit, or Surety Bond.

(a) If at any time after a standby trust is funded upon the instruction of the Administrator with funds drawn from a guarantee, local government guarantee with standby trust, letter of credit, or surety bond, and the amount in the standby trust is reduced below the full amount of coverage required, the owner or operator shall by the anniversary date of the financial mechanism from which the funds were drawn:

(1) Replenish the value of financial assurance to equal the full amount of coverage required; or

(2) Acquire another financial assurance mechanism for the amount by which funds in the standby trust have been reduced.

(b) For purposes of this section, the full amount of coverage required is the amount of coverage to be provided by § 50193, Guam Administrative Rule and Regulations. If a combination of mechanisms was used to provide the assurance funds, which were drawn upon, replenishment shall occur by the earliest anniversary date among the mechanisms.

§ 501116 to § 501199. [Reserved.]

ARTICLE 9
LENDER LIABILITY

§ 501200. Definitions
§ 501201 to § 501209. [Reserved.]
§ 501210. Participation in Management
§ 501211 to § 501219. [Reserved.]
§ 501220. Ownership of an Underground Storage Tank or Underground Storage Tank System or Facility or Property on which an Underground Storage Tank or Underground

Storage Tank System is Located
§ 501221 to § 501229. [Reserved.]
§ 501230. Operating an Underground Storage Tank or Underground Storage Tank System
§ 501231 to § 501239. [Reserved.]

§ 501200. Definitions.

(a) UST technical standards, as used in this Article, refers to the UST preventative and operating requirements under Articles 2, 3, 4, 7, and 10 and § 50150, Guam Administrative Rules and Regulations.

(b) Petroleum production, refining, and marketing.

(a) (1) "Petroleum production" means the production of crude oil or other forms of petroleum (as defined in § 50112, Guam Administrative Rules and Regulations) as well as the production of petroleum products from purchased materials.

(2) "Petroleum refining" means the cracking, distillation, separation, conversion, upgrading, and finishing of refined petroleum or petroleum products.

(3) "Petroleum marketing" means the distribution, transfer, or sale of petroleum or petroleum products for wholesale or retail purposes.

(c) "Indicia of ownership" means evidence of a secured interest, evidence of an interest in a security interest, or evidence of an interest in real or personal property securing a loan or other obligation, including any legal or equitable title or deed to real or personal property acquired through or incident to foreclosure. Evidence of such interests include, but are not limited to, mortgages, deeds of trust, liens, surety bonds and guarantees of obligations, title held pursuant to a lease financing transaction in which the lessor does not select initially the leased property (hereinafter "lease financing transaction"), and legal or equitable title obtained pursuant to foreclosure. Evidence of such interests also includes assignments, pledges, or other rights to or other forms of encumbrance against property that are held primarily to protect a security interest. A person is not required to hold title or a security interest in order to

maintain indicia of ownership.

(d) A "holder" is a person who, upon October 13, 2015, or in the future, maintains indicia of ownership (as defined in subsection (c)) primarily to protect a security interest (as defined in subsection (f)(1)) in a petroleum UST or UST system or facility or property on which a petroleum UST or UST system is located. A holder includes the initial holder (such as a loan originator); any subsequent holder (such as a successor-in-interest or subsequent purchaser of the security interest on the secondary market); a guarantor of an obligation, surety, or any other person who holds ownership indicia primarily to protect a security interest; or a receiver or other person who acts on behalf or for the benefit of a holder.

(e) A "borrower, debtor, or obligor" is a person whose UST or UST system or facility or property on which the UST or UST system is located is encumbered by a security interest. These terms may be used interchangeably.

(f) "Primarily to protect a security interest" means that the holder's indicia of ownership are held primarily for the purpose of securing payment or performance of an obligation.

(1) "Security interest" means an interest in a petroleum UST or UST system or in the facility or property on which a petroleum UST or UST system is located, created or established for the purpose of securing a loan or other obligation. Security interests include but are not limited to mortgages, deeds of trusts, liens, and title pursuant to lease financing transactions. Security interests may also arise from transactions such as sale and leasebacks, conditional sales, installment sales, trust receipt transactions, certain assignments, factoring agreements, accounts receivable financing arrangements, and consignments, if the transaction creates or establishes an interest in an UST or UST system or in the facility or property on which the UST or UST system is located, for the purpose of securing a loan or other obligation.

(2) "Primarily to protect a security interest", as used in this

subchapter, does not include indicia of ownership held primarily for investment purposes, nor ownership indicia held primarily for purposes other than as protection for a security interest. A holder may have other, secondary reasons for maintaining indicia of ownership, but the primary reason why any ownership indicia are held must be as protection for a security interest.

(g) "Operation" means, for purposes of this Article, the use, storage, filling, or dispensing of petroleum contained in an UST or UST system.

§ 501201 to § 501209. [Reserved.]

§ 501210. Participation in Management.

(a) The term "participating in the management of an UST or UST system" means that the holder is engaging in decision making control of, or activities related to, operation of the UST or UST system, as defined in this section. Actions that are participation in management:

(1) Participation in the management of an UST or UST system means, for purposes of this subchapter, actual participation by the holder in the management or control of decision making related to the operation of an UST or UST system. Participation in management does not include the mere c capacity or ability to influence or the unexercised right to control UST or UST system operations. A holder is participating in the management of the UST or UST system only if the holder either:

(A) Exercises decision making control over the operational (as opposed to financial or administrative) aspects of the UST or UST system, such that the holder has undertaken responsibility for all or substantially all of the management of the UST or UST system; or

(B) Exercises control at a level comparable to that of a

manager of the borrower's enterprise, such that the holder has assumed or manifested responsibility for the overall management of the enterprise encompassing the day-to-day decision making of the enterprise with respect to all, or substantially all, of the operational (as opposed to financial or administrative) aspects of the enterprise.

(2) Operational aspects of the enterprise relate to the use, storage, filling, or dispensing of petroleum contained in an UST or UST system, and include functions such as that of a facility or plant manager, operations manager, chief operating officer, or chief executive officer. Financial or administrative aspects include functions such as that of a credit manager, accounts payable/receivable manager, personnel manager, controller, chief financial officer, or similar functions. Operational aspects of the enterprise do not include the financial or administrative aspects of the enterprise, or actions associated with environmental compliance, or actions undertaken voluntarily to protect the environment in accordance with applicable requirements in this Article.

(b) Actions that are not participation in management pre-foreclosure:

(1) Actions at the inception of the loan or other transaction. No act or omission prior to the time that indicia of ownership are held primarily to protect a security interest constitutes evidence of participation in management within the meaning of this Article. A prospective holder who undertakes or requires an environmental investigation (which could include a site assessment, inspection, and/or audit) of the UST or UST system or facility or property on which the UST or UST system is located (in which indicia of ownership are to be held), or requires a prospective borrower to clean up contamination from the UST or UST system or to comply or come into compliance (whether prior or subsequent to the time that indicia of ownership are held primarily to protect a security interest) with any applicable law or regulation, is not by such action considered to be participating in

the management of the UST or UST system or facility or property on which the UST or UST system is located.

(2) Loan policing and work out. Actions that are consistent with holding ownership indicia primarily to protect a security interest do not constitute participation in management for purposes of this subchapter. The authority for the holder to take such actions may, but need not, be contained in contractual or other documents specifying requirements for financial, environmental, and other warranties, covenants, conditions, representations or promises from the borrower. Loan policing and work out activities cover and include all such activities up to foreclosure, exclusive of any activities that constitute participation in management.

(A) Policing the security interest or loan.

(i) A holder who engages in policing activities prior to foreclosure will remain within the exemption provided that the holder does not together with other actions participate in the management of the UST or UST system as provided in § 501210(a), Guam Administrative Rules and Regulations. Such policing actions include, but are not limited to, requiring the borrower to clean up contamination from the UST or UST system during the term of the security interest; requiring the borrower to comply or come into compliance with applicable federal, state, and local environmental and other laws, rules, and regulations during the term of the security interest; securing or exercising authority to monitor or inspect the UST or UST system or facility or property on which the UST or UST system is located (including on-site inspections) in which indicia of ownership are maintained, or the borrower's business or financial condition during the term of the

security interest; or taking other actions to adequately police the loan or security interest (such as requiring a borrower to comply with any warranties, covenants, conditions, representations, or promises from the borrower).

(ii) Policing activities also include undertaking by the holder of UST environmental compliance actions and voluntary environmental actions taken in compliance with this chapter, provided that the holder does not otherwise participate in the management or daily operation of the UST or UST system as provided in §§ 501210(a) and 50130, Guam Administrative Rules and Regulations sections. Such allowable actions include, but are not limited to, release detection and release reporting, release response and corrective action, temporary or permanent closure of an UST or UST system, UST upgrading or replacement, and maintenance of corrosion protection. A holder who undertakes these actions must do so in compliance with the applicable requirements in this chapter. A holder may directly oversee these environmental compliance actions and voluntary environmental actions, and directly hire contractors to perform the work, and is not by such action considered to be participating in the management of the UST or UST system.

(B) Loan work out. A holder who engages in work out activities prior to foreclosure will remain within the exemption provided that the holder does not together with other actions participate in the management of

the UST or UST system as provided in § 501210(a) Guam Administrative Rules and Regulations. For purposes of this rule, "work out" refers to those actions by which a holder, at any time prior to foreclosure, seeks to prevent, cure, or mitigate a default by the borrower or obligor; or to preserve, or prevent the diminution of, the value of the security. Work out activities include, but are not limited to, restructuring or renegotiating the terms of the security interest; requiring payment of additional rent or interest; exercising forbearance; requiring or exercising rights pursuant to an assignment of accounts or other amounts owing to an obligor; requiring or exercising rights pursuant to an escrow agreement pertaining to amounts owing to an obligor; providing specific or general financial or other advice, suggestions, counseling, or guidance; and exercising any right or remedy the holder is entitled to by law or under any warranties, covenants, conditions, representations, or promises from the borrower.

(c) Foreclosure on an UST or UST system or facility or property on which an UST or UST system is located, and participation in management activities post-foreclosure.

(1) Foreclosure.

(A) Indicia of ownership that are held primarily to protect a security interest include legal or equitable title or deed to real or personal property acquired through or incident to foreclosure. For purposes of this Article, the term "foreclosure" means that legal, marketable or equitable title or deed has been issued, approved, and recorded, and that the holder has obtained access to the UST, UST system, UST facility, and property on which the UST or UST system is located, provided that the holder acted diligently to acquire marketable title or deed and to gain access to

the UST, UST system, UST facility, and property on which the UST or UST system is located. The indicia of ownership held after foreclosure continue to be maintained primarily as protection for a security interest provided that the holder undertakes to sell, re-release an UST or UST system or facility or property on which the UST or UST system is located, held pursuant to a lease financing transaction (whether by a new lease financing transaction or substitution of the lessee), or otherwise divest itself of the UST or UST system or facility or property on which the UST or UST system is located, in a reasonably expeditious manner, using whatever commercially reasonable means are relevant or appropriate with respect to the UST or UST system or facility or property on which the UST or UST system is located, taking all facts and circumstances into consideration, and provided that the holder does not participate in management (as defined in § 501210(a), Guam Administrative Rules and Regulations prior to or after foreclosure.

(B) For purposes of establishing that a holder is seeking to sell, re-lease pursuant to a lease financing transaction (whether by a new lease financing transaction or substitution of the lessee), or divest in a reasonably expeditious manner an UST or UST system or facility or property on which the UST or UST system is located, the holder may use whatever commercially reasonable means as are relevant or appropriate with respect to the UST or UST system or facility or property on which the UST or UST system is located, or may employ the means specified in § 501210(c)(2), Guam Administrative Rules and Regulations). A holder that outbids, rejects, or fails to act upon a written, bona fide, firm offer of fair consideration for the UST or UST system or facility or

property on which the UST or UST system is located, as provided in § 501210(c)(2), Guam Administrative Rules and Regulations, is not considered to hold indicia of ownership primarily to protect a security interest.

(2) Holding foreclosed property for disposition and liquidation. A holder, who does not participate in management prior to or after foreclosure, may sell, re-lease, pursuant to a lease financing transaction (whether by a new lease financing transaction or substitution of the lessee), an UST or UST system or facility or property on which the UST or UST system is located, liquidate, wind up operations, and take measures, prior to sale or other disposition, to preserve, protect, or prepare the secured UST or UST system or facility or property on which the UST or UST system is located. A holder may also arrange for an existing or new operator to continue or initiate operation of the UST or UST system. The holder may conduct these activities without voiding the security interest exemption, subject to the requirements of this Article.

(A) A holder establishes that the ownership indicia maintained after foreclosure continue to be held primarily to protect a security interest by, within twelve months following foreclosure, listing the UST or UST system or the facility or property on which the UST or UST system is located, with a broker, dealer, or agent who deals with the type of property in question, or by advertising the UST or UST system or facility or property on which the UST or UST system is located, as being for sale or disposition on at least a monthly basis in either a real estate publication or a trade or other publication suitable for the UST or UST system or facility or property on which the UST or UST system is located, or a newspaper of general circulation (defined as one with a circulation over

10,000, or one suitable under any applicable federal, state, or local rules of court for publication required by court order or rules of civil procedure) covering the location of the UST or UST system or facility or property on which the UST or UST system is located. For purposes of this provision, the twelve-month period begins to run from the date that the marketable title or deed has been issued, approved and recorded, and the holder has obtained access to the UST, UST system, UST facility and property on which the UST or UST system is located, provided that the holder acted diligently to acquire marketable title or deed and to obtain access to the UST, UST system, UST facility and property on which the UST or UST system is located. If the holder fails to act diligently to acquire marketable title or deed or to gain access to the UST or UST system, the twelve-month period begins to run from the date on which the holder first acquires either title to or possession of the secured UST or UST system, or facility or property on which the UST or UST system is located, whichever is later.

(B) A holder that outbids, rejects, or fails to act upon an offer of fair consideration for the UST or UST system or the facility or property on which the UST or UST system is located, establishes by such outbidding, rejection, or failure to act, that the ownership indicia in the secured UST or UST system or facility or property on which the UST or UST system is located are not held primarily to protect the security interest, unless the holder is required, in order to avoid liability under federal or state law, to make a higher bid, to obtain a higher offer, or to seek or obtain an offer in a different manner.

(i) Fair consideration, in the case of a holder

maintaining indicia of ownership primarily to protect a senior security interest in the UST or UST system or facility or property on which the UST or UST system is located, is the value of the security interest as defined in this section. The value of the security interest includes all debt and costs incurred by the security interest holder, and is calculated as an amount equal to or in excess of the sum of the outstanding principal (or comparable amount in the case of a lease that constitutes a security interest) owed to the holder immediately preceding the acquisition of full title (or possession in the case of a lease financing transaction) pursuant to foreclosure, plus any unpaid interest, rent, or penalties (whether arising before or after foreclosure). The value of the security interest also includes all reasonable and necessary costs, fees, or other charges incurred by the holder incident to work out, foreclosure, retention, preserving, protecting, and preparing, prior to sale, the UST or UST system or facility or property on which the UST or UST system is located, re-lease, pursuant to a lease financing transaction (whether by a new lease financing transaction or substitution of the lessee), of an UST or UST system or facility or property on which the UST or UST system is located, or other disposition. The value of the security interest also includes environmental investigation costs (which could include a site assessment, inspection, and/or audit of the UST or UST system or facility or property on which the UST or UST system is located), and release

response and corrective action costs incurred under §§ 50151 to 50167, Guam Administrative Rules and Regulations or any other costs incurred as a result of reasonable efforts to comply with any other applicable federal, state or local law or regulation; less any amounts received by the holder in connection with any partial disposition of the property and any amounts paid by the borrower (if not already applied to the borrower's obligations) subsequent to the acquisition of full title (or possession in the case of a lease financing transaction) pursuant to foreclosure. In the case of a holder maintaining indicia of ownership primarily to protect a junior security interest, fair consideration is the value of all outstanding higher priority security interests plus the value of the security interest held by the junior holder, each calculated as set forth in this subsection.

(ii) Outbids, rejects, or fails to act upon an offer of fair consideration means that the holder outbids, rejects, or fails to act upon within ninety days of receipt, a written, bona fide, firm offer of fair consideration for the UST or UST system or facility or property on which the UST or UST system is located received at any time after six months following foreclosure, as defined in § 501210(c), Guam Administrative Rules and Regulations. A "written, bona fide, firm offer" means a legally enforceable, commercially reasonable, cash offer solely for the foreclosed UST or UST system or facility or property on which the UST or UST system is located, including all

material terms of the transaction, from a ready, willing, and able purchaser who demonstrates to the holder's satisfaction the ability to perform. For purposes of this provision, the six-month period begins to run from the date that marketable title or deed has been issued, approved and recorded to the holder, and the holder has obtained access to the UST, UST system, UST facility and property on which the UST or UST system is located, provided that the holder was acting diligently to acquire marketable title or deed and to obtain access to the UST or UST system, UST facility and property on which the UST or UST system is located. If the holder fails to act diligently to acquire marketable title or deed or to gain access to the UST or UST system, the six-month period begins to run from the date on which the holder first acquires either title to or possession of the secured UST or UST system, or facility or property on which the UST or UST system is located, whichever is later.

(3) Actions that are not participation in management post-foreclosure. A holder is not considered to be participating in the management of an UST or UST system or facility or property on which the UST or UST system is located when undertaking actions under this chapter, provided that the holder does not otherwise participate in the management or daily operation of the UST or UST system as provided in §§ 501210(a) and 501230, Guam Administrative Rules and Regulations. Such allowable actions include, but are not limited to, release detection and release reporting, release response and corrective action, temporary or permanent closure of an UST or UST system, UST upgrading or replacement, and maintenance of corrosion protection. A

holder who undertakes these actions must do so in compliance with the applicable requirements in this Article. A holder may directly oversee these environmental compliance actions and voluntary environmental actions, and directly hire contractors to perform the work, and is not by such action considered to be participating in the management of the UST or UST system.

§ 501211 to § 501219. [Reserved.]

§ 501220. Ownership of an Underground Storage Tank or Underground Storage Tank System or Facility or Property on which an Underground Storage Tank or Underground Storage Tank System is Located.

Ownership of an UST or UST system or facility or property on which an UST or UST system is located. A holder is not an "owner" of a petroleum UST or UST system or facility or property on which a petroleum UST or UST system is located for purposes of compliance with the UST technical standards as defined in § 501200(a), Guam Administrative Rules and Regulations, the UST release response and corrective action requirements under §§ 50151 to 50167, Guam Administrative Rules and Regulations, and the UST financial responsibility requirements under §§ 50190 to 501111, Guam Administrative Rules and Regulations, provided the person:

(1) Does not participate in the management of the UST or UST system as defined in § 501210, Guam Administrative Rules and Regulations; and

(2) Does not engage in petroleum production, refining, and marketing as defined in § 501200(b), Guam Administrative Rules and Regulations.

§§ 501221 to 501229. [Reserved.]

§ 501230. Operating an Underground Storage Tank or Underground Storage Tank System.

(a) Operating an UST or UST system prior to foreclosure. A holder, prior to foreclosure, as defined in § 501210(c), Guam Administrative Rules and Regulations, is not an "operator" of a petroleum UST or UST system for purposes of compliance with the UST technical standards as defined in § 501200(a), Guam Administrative Rules and Regulations, the UST corrective action requirements under §§ 50151 to 50167, Guam Administrative Rules and Regulations, and the UST financial responsibility requirements under §§ 50190 to 501111, Guam Administrative Rules and Regulations, provided that the holder is not in control of or does not have responsibility for the daily operation of the UST or UST system.

(b) Operating an UST or UST system after foreclosure. The following provisions apply to a holder who, through foreclosure, as defined in § 501210(c), Guam Administrative Rules and Regulations, acquires a petroleum UST or UST system or facility or property on which a petroleum UST or UST system is located.

(1) A holder is not an "operator" of a petroleum UST or UST system for purposes of compliance with this chapter if there is an operator, other than the holder, who is in control of or has responsibility for the daily operation of the UST or UST system, and who can be held responsible for compliance with applicable requirements of this chapter.

(2) If another operator does not exist, as provided for under paragraph (1), a holder is not an "operator" of the UST or UST system, for purposes of compliance with the UST technical standards as defined in § 501200(a), Guam Administrative Rules and Regulations, the UST corrective action requirements under §§ 50151 to 50167, Guam Administrative Rules and Regulations, and the UST financial responsibility requirements under §§ 50190 to 501111, Guam Administrative Rules and Regulations, provided that the holder:

(A) Empties all of its known USTs and UST systems within sixty calendar days after foreclosure, or

another reasonable time period specified by the agency, so that no more than 2.5 centimeters (one inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remains in the system; leaves vent lines open and functioning; and caps and secures all other lines, pumps, manways, and ancillary equipment; and

(B) Empties those USTs and UST systems that are discovered after foreclosure within sixty calendar days after discovery, or another reasonable time period specified by the agency, so that no more than 2.5 centimeters (one inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remains in the system; leaves vent lines open and functioning; and caps and secures all other lines, pumps, manways, and ancillary equipment.

(3) If another operator does not exist, as provided for under paragraph (1), in addition to satisfying the conditions under paragraph (2), the holder must either:

(A) Permanently close the UST or UST system in accordance with §§ 50171 to 50174, Guam Administrative Rules and Regulations, except § 50172(b), Guam Administrative Rules and Regulations; or

(B) Temporarily close the UST or UST system in accordance with the following applicable provisions of § 50170, Guam Administrative Rules and Regulations:

(i) Continue operation and maintenance of corrosion protection in accordance with § 50131, Guam Administrative Rules and Regulations;

(ii) Report suspected releases to the agency; and

(iii) Conduct a site assessment in accordance with

§ 50172(a), Guam Administrative Rules and Regulations if the UST system is temporarily closed for more than twelve months and the UST system does not meet the applicable system design, construction, and installation requirements in Article 2, except that the spill and overfill equipment requirements do not have to be met. The holder must report any suspected releases to the agency.

For purposes of this provision, the twelve-month period begins to run from the date on which the UST system is emptied and secured under paragraph (2).

(4) The UST system can remain in temporary closure until a subsequent purchaser has acquired marketable title to the UST or UST system or facility or property on which the UST or UST system is located. Once a subsequent purchaser acquires marketable title to the UST or UST system or facility or property on which the UST or UST system is located, the purchaser must decide whether to operate or close the UST or UST system in accordance with applicable requirements in this chapter.

§§ 501231 to 501239. [Reserved.]

ARTICLE 10
OPERATOR TRAINING

§ 501240. General Requirement for All UST Systems
§ 501241. Designation of Class A, B, and C Operators
§ 501242. Requirements for Operator Training
§ 501243. Timing of Operator Training
§ 501244. Retraining
§ 501245. Documentation
§ 501246 to § 501249. [Reserved.]

§ 501240. General Requirement for All UST Systems.

All owners and operators of UST systems must ensure they have designated Class A, Class B, and Class C operators who meet the requirements of this subchapter.

§ 501241. Designation of Class A, B, and C Operators.

(a) UST system owners and operators must designate:

(1) At least one Class A and one Class B operator for each UST or group of USTs at a facility; and

(2) Each individual who meets the definition of Class C operator at the UST facility as a Class C operator.

(b) Separate individuals may be designated for each class of operator or an individual may be designated for more than one of the operator classes.

(c) Owners and operators shall submit written notice to the agency identifying the Class A and Class B operators for each UST or tank system in use or temporarily out of use no later than thirty (30) calendar days after an operator assumes the operator's responsibilities as a Class A or Class B operator. The notification must include the name of each operator, the date training was completed, the name and address of each facility where the USTs or tank systems for which the operator has been designated is located, and written verification from a training program approved or administered by the agency that the Class A and Class B operator for each UST or tank system has successfully completed operator training in the operator's class.

§ 501242. Requirements for Operator Training.

UST system owners and operators must ensure Class A, Class B, and Class C operators meet the requirements of this section. Any individual designated for more than one operator class must successfully complete the required training program or comparable examination according to

the operator classes in which the individual is designated.

(1) Class A operators. Each designated Class A operator must either be trained in accordance with subparagraphs (A) and (B) or pass a comparable examination in accordance with paragraph (5).

(A) At a minimum, the training must teach the Class A operators about the purpose, methods, and function of:

(i) Spill and overfill prevention;

(ii) Release detection;

(iii) Corrosion protection;

(iv) Emergency response;

(v) Product and equipment compatibility and demonstration;

(vi) Financial responsibility;

(vii) Notification and permitting;

(viii) Temporary and permanent closure;

(ix) Reporting, recordkeeping, testing, and inspections;

(x) Environmental and regulatory consequences of releases; and

(xi) Training requirements for Class B and Class C operators.

(B) At a minimum, the training program must evaluate Class A operators to determine these individuals have the knowledge and skills to make informed decisions regarding compliance and determine whether appropriate individuals are fulfilling the operation, maintenance, and recordkeeping requirements for UST systems in accordance with subparagraph (A).

(2) Class B operators. Each designated Class B operator must either receive training in accordance with subparagraphs (A) and (B) or pass a comparable examination, in accordance with paragraph (5).

(A) At a minimum, the training program for Class B

operators must teach the Class B operator about the purpose, methods, and function of:

(i) Operation and maintenance, including components of UST systems, materials of UST system components, and methods of release detection and release prevention applied to UST components;

(ii) Spill and overfill prevention;

(iii) Release detection and related reporting;

(iv) Corrosion protection;

(v) Emergency response;

(vi) Product and equipment compatibility and demonstration;

(vii) Reporting, recordkeeping, testing, and inspections;

(ix) Environmental and regulatory consequences of releases; and

(x) Training requirements for Class C operators.

(B) At a minimum, the training program must evaluate Class B operators to determine these individuals have the knowledge and skills to implement applicable UST regulatory requirements in the field on the components of typical UST systems in accordance with subparagraph (A).

(3) Class C operators. Each designated Class C operator must either: be trained by a Class A or Class B operator in accordance with subparagraphs (A) and (B); complete a training program in accordance with subparagraphs (A) and (B); or pass a comparable examination, in accordance with paragraph (5).

(A) At a minimum, the training program for the Class C operator must teach the Class C operators to take appropriate actions (including notifying appropriate authorities) in response to emergencies or alarms caused by spills or releases resulting from the

operation of the UST system.

(B) At a minimum, the training program must evaluate Class C operators to determine these individuals have the knowledge and skills to take appropriate action (including notifying appropriate authorities) in response to emergencies or alarms caused by spills or releases from an underground storage tank system.

(4) Training program requirements. Any training program must meet the minimum requirements of this section, must incorporate an evaluation of operator knowledge through written examination, a practical demonstration, or other reasonable testing methods acceptable to the agency, and must be approved or administered by the agency. An operator training program may consist of in-class or on-line instruction and may include practical exercises.

(5) Comparable examination. A comparable examination must, at a minimum, test the knowledge of the Class A, Class B, or Class C operators in accordance with the requirements of paragraph (1), (2), or (3), as applicable. The acceptability of a comparable examination to meet the requirements of this section is determined by the agency. The agency may accept operator training verification from other states if the operator training is deemed by the agency to be equivalent to the requirements of this section.

§ 501243. Timing of Operator Training.

(a) An owner and operator must ensure that designated Class A, Class B, and Class C operators meet the requirements in § 501242 not later than October 13, 2015.

(b) Class A and Class B operators designated on or after October 13, 2015, must meet requirements in § 501242 within thirty (30) calendar days of assuming duties.

(c) Class C operators designated after October 13, 2015, must be trained

before assuming duties of a Class C operator.

§ 501244. Retraining.

(a) Class A and class B operators shall be retrained every two (2) years. Class C operators shall be retrained every three hundred sixty-five (365) calendar days.
(b) Class A and Class B operators of UST systems determined by the agency to be out of compliance must complete a training program or comparable examination in accordance with requirements in § 501242. The training program or comparable examination must be developed or administered by the agency or an independent organization. An UST or tank system is out of compliance if the system:

(1) Meets any of the delivery prohibition criteria outlined in § 501429; or
(2) Is in significant violation of other requirements, such as temporary or permanent closure, tank registration, or financial responsibility, as determined by the Administrator.

(c) UST system owners and operators must ensure Class A and Class B operators are retrained as required in subsection (b) no later than thirty (30) calendar days from the date the agency determines the facility is out of compliance except in one of the following situations:

(1) Class A and Class B operators take annual refresher training. Refresher training for Class A and Class B operators must cover all applicable requirements in § 501242;
(2) The agency, at its discretion, waives this retraining requirement for either the Class A or Class B operator or both.

§ 501245. Documentation.

Owners and operators of underground storage tank systems must maintain a list of designated Class A, Class B, and Class C operators and maintain records verifying that training and retraining, as applicable, have been completed, in accordance with § 50134 as follows:

(1) The list must:

(A) Identify all Class A, Class B, and Class C operators currently designated for the facility; and

(B) Include names, class of operator trained, date assumed duties, date each completed initial training, and any retraining.

(2) Records verifying completion of training or retraining must be a paper or electronic record for Class A, Class B, and Class C operators. The records, at a minimum, must identify name of trainee, date trained, operator training class completed, and list the name of the trainer or examiner and the training company name, address, and telephone number. Owners and operators must maintain these records for as long as Class A, Class B, and Class C operators are designated. The following requirements also apply to the following types of training:

(A) Records from classroom or field training programs (including Class C operator training provided by the Class A or Class B operator) or a comparable examination must, at a minimum, be signed by the trainer or examiner;

(B) Records from computer based training must, at a minimum, indicate the name of the training program and web address, if Internet based; and

(C) Records of retraining must include those areas on which the Class A or Class B operator has been retrained.

§ 501246 to § 501249. [Reserved.]

ARTICLE 11
RESERVED

§ 501250 to § 501299. [Reserved.]

ARTICLE 12
PERMITS AND VARIANCES

§ 501300 to § 501322. [Reserved]
§ 501323. Permit Required
§ 501324. Application for Permit
§ 501325. Permit
§ 501326. Permit Renewal
§ 501327. Action On and Timely Approval of Application for Permit
§ 501328. Permit Conditions
§ 501329. Modification of Permit
§ 501330. Revocation or Suspension of Permit
§ 501331. Change in Owner or Operation for a Permit
§ 501332. Variance Allowed
§ 501333. Variance Application
§ 501334. Maintenance of Permit or Variance
§ 501335. Fees
§ 501336 to § 501339. [Reserved.]

§ 501300 to § 501322. [Reserved]

§ 501323. Permit Required.

(a) No person shall install, operate, modify, or close an UST or tank system without first obtaining a permit from the Administrator.
(b) The Administrator shall approve an application for a permit only if the applicant has submitted sufficient information to the satisfaction of the Administrator that the technical, financial, and other requirements of this chapter are or can be met and the installation and operation of the UST or

tank system will be done in a manner that is protective of human health and the environment.
(c) A permit shall be issued only in accordance with 10 GCA Chapter 76, and this Article, and it shall be the duty of the permittee to ensure compliance with the law in the installation, operation, and closure of the UST or tank system.
(d) Issuance of a permit shall not relieve any person of the responsibility to comply fully with all applicable laws

§ 501324. Application for Permit.

(a) Every application for a permit shall be submitted to the agency on the "Application for an Underground Storage Tank Permit" form prescribed by the agency.
(b) A permit fee in accordance with § 501335 shall accompany each application for a permit.
(c) The applicant shall submit sufficient information to enable the Administrator to make a decision on the application. Information submitted shall include but not be limited to the following:

(1) General information on involved parties, including the landowner, UST owner, and UST operator; location of the property; and basic description of the UST or tank system;
(2) Age, size, precise location within the property, and use of each UST;
(3) Other information required in the form prescribed by the Administrator; and
(4) Other information as the agency may require.

(d) Every application shall be signed by the owner and the operator and shall constitute an acknowledgment that the applicants assume responsibility for the installation and operation of the UST or tank system in accordance with this Article and the conditions of the permit, if issued. Each signatory shall be:

(1) In the case of a corporation, a principal executive officer of at least the level of vice president, or a duly authorized

representative if that representative is responsible for the overall operation of the UST or tank system;

(2) In the case of a partnership, a general partner;

(3) In the case of a sole proprietorship, the proprietor; or

(4) In the case of a county, state, or federal entity, either a principal executive officer, ranking elected official, or other duly authorized employee.

§ 501325. Permit.

(a) Upon approval of an application for a permit to install and operate an UST or tank system, the Administrator shall issue a permit for a term of one (1) year.

(b) The owner or operator shall have one (1) year from the issuance of the permit to install an UST or tank system. If the installation is not completed within one (1) year, the permit expires and the owner or operator must apply for a new permit.

(c) The owner or operator must inform the agency at least seven (7) calendar days prior to performing the actual installation. The information shall include the permit number, name and address of the UST or tank system, the contact person, the contact person's phone number, and date and time of actual installation.

(d) The owner or operator must notify the agency within thirty (30) calendar days after the installation of the UST or tank system. The notification shall be submitted on the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator. If information submitted on the form has changed since the original application. The form must certify compliance with the following requirements:

(1) Installation of tanks and piping under § 50120(f);

(2) Cathodic protection of steel tanks and piping under § 50120(b) and (c);

(3) Financial responsibility under Article 8; and

(4) Release detection under §§ 50141 and 50142.

(e) The agency, where practicable and appropriate, may issue one (1)

permit to the owner or operator of an UST system for the purpose of combining all USTs, piping, and any ancillary equipment constituting that UST system under one permit, irrespective of the number of individual USTs, so long as that UST system is part of one reasonably contiguous physical location.

§ 501326. Permit Renewal.

(a) On application, a permit may be renewed for a term of one (1) year.
(b) A renewal fee in accordance with § 501335 shall accompany each application for renewal of a permit.
(c) An application for a renewal shall be received by the agency at least sixty (60) calendar days prior to the expiration of the existing permit and shall be submitted on the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator.

§ 501327. Action On and Timely Approval of Application for Permit.

(a) The Administrator need not act upon nor consider any incomplete application for a permit. An application shall be deemed complete only when:

(1) All required and requested information, including the application form, plans, specifications, and other information required by this Article have been submitted in a timely fashion;
(2) All fees have been paid as prescribed in § 501335; and
(3) The Administrator determines that the application is complete.

(b) The Administrator shall approve, approve with conditions, or deny a complete application for a permit to install or operate an UST or tank system or a permit renewal, or modification, required under this chapter.

§ 501328. Permit Conditions.

The Administrator may impose conditions on a permit that the Administrator deems reasonably necessary to ensure compliance with this Article and any other relevant state requirement, including conditions relating to equipment, work practice, or operation. Conditions may include, but shall not be limited to, the requirement that devices for measurement or monitoring of regulated substances be installed and maintained and the results reported to the Administrator, all costs and expenses to be borne by the applicant.

§ 501329. Modification of Permit.

(a) The Administrator may modify a permit if there is a change that requires a modification to an existing permit. Changes requiring a permit modification shall include but not be limited to:

(1) The addition or removal of an UST from an UST system; and

(2) Any change to or modification of an UST or UST system which would otherwise place the existing UST or UST system out of compliance with this Article or an existing permit.

(b) An application for modification of a permit shall be made in writing to the agency and shall be accompanied by sufficient information on the planned renovation or modification to the UST or tank system to assist the agency in making a determination as to whether the application for modification should be denied or granted.

(c) Applications for a permit modification shall be received by the agency no later than sixty (60) calendar days prior to the occurrence of the event that prompted the application except that applications for change-in-service must be received by the agency at least thirty (30) calendar days before the owner or operator begins the change-in-service. Applications shall be submitted on the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator.

(d) Owners and operators shall submit a permit application to add USTs or tank systems to an existing permit. If the Administrator approves the

addition, the existing permit shall be terminated, and a new permit shall be issued which covers the additional USTs as well as the already-permitted USTs. The term of the new permit shall be for the remaining term of the original permit.

§ 501330. Revocation or Suspension of Permit.

The Administrator may revoke or suspend a permit if the Administrator finds any one of the following:

(1) There is a release or threatened release of regulated substances that the agency deems to pose an imminent and substantial risk to human health or the environment;
(2) The permittee violated a condition of the permit; or
(3) The permit was obtained by misrepresentation, or failure to disclose fully all relevant facts.

§ 501331. Change in Owner or Operator for a Permit.

(a) Should a change in owner or operator of an UST or tank system occur, the new owner or operator shall complete and submit the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator.
(b) The new owner or operator shall submit the completed form to the agency at least thirty (30) calendar days prior to the change in owner or operator.

§ 501332. Variance Allowed.

Provisions pursuant to this Article relating to USTs or tank systems which are more stringent than Title 40, Part 280 of the Code of Federal Regulations, published by the Office of the Federal Register, as amended as of July 1, 2017, may be varied by the Administrator in accordance with this Article. No variance may be less stringent than the federal requirements.

§ 501333. Variance Application.

(a) An application for a variance shall be submitted to the agency on the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator.
(b) A variance fee in accordance with § 501335 shall accompany each application for a variance.
(c) Every application shall be signed by the owner and operator, and the signature shall be by one of the following:

(1) In the case of a corporation, by a principal executive officer of at least the level of vice president, or a duly authorized representative if that representative is responsible for the overall operation of the UST or tank system;
(2) In the case of a partnership, by a general partner;
(3) In the case of a sole proprietorship, by the proprietor; or
(4) In the case of a county, state, or federal entity, by a principal executive officer, ranking elected official or other duly authorized employee.

(d) The Administrator shall approve, approve with conditions, or deny a complete application as required under this Article. The Administrator shall notify the applicant of the agency's decision, within one hundred eighty (180) calendar days of receipt of a complete application. Otherwise, a complete application is deemed approved one hundred eighty (180) calendar days after it is received by the agency.

§ 501334. Maintenance of Permit or Variance.

(a) Permits and variances, including application records, shall be maintained at the location of the UST or tank system for which the permit was issued and shall be made available for inspection upon request of any duly authorized representative of the agency.
(b) No person shall willfully deface, alter, forge, counterfeit, or falsify any permit or variance.

§ 501335. Fees.

(a) Every applicant for a permit or a variance, or applicant for modification or renewal of a permit or variance, shall pay the applicable fees as set forth below:

Type of Application	Permit	Variance
Permit Application Fee per Tank (New Installation)	$500.00	$550.00
Permit to Operate Fee per Tank (Annual)	$250.00	
Permit to Modify	$150.00	$200.00
Permit to Close	$500.00	$550.00
Permit to Install OWS	$500.00	$550.00
Permit to Close OWS	$500.00	
Request for Proposal (Copy)	$25.00	
Installer's Certification (2 years)	$150.00	
Operator's Certification A & B (2 years)	$150.00	
Operator's Re-Certification (2 years)	$100.00	

(b) Fees shall be submitted with the application and are nonrefundable.
(c) Fees shall be made payable to Guam Environmental Protection Agency UST-LUST Fund.
(d) If more than one type of application is combined, the highest applicable fee will be assessed. However, a permit application and a variance application shall not be combined under one fee.

§ 501336 to § 501399. [Reserved.]

ARTICLE 13
ENFORCEMENT

§ 501400 to § 501420. [Reserved.]
§ 501421. Purpose.
§ 501422. Field Citation
§ 501423 to § 501428. [Reserved.]
§ 501429. Delivery, Deposit, and Acceptance Prohibition

§ 501400 to § 501420. [Reserved.]

§ 501421. Purpose.

The purpose of this Article is to create an enforcement program that facilitates the effective and expeditious resolution of violations of 10 GCA Chapter 76 and this Chapter.

§ 501422. Field Citations.

(a) Field citations may be issued for violations of 10 GCA Chapter 76 and this Chapter, that the agency deems appropriate for resolution through the issuance of a field citation. Nothing in this section requires the agency to elect one enforcement mechanism over another and the decision to proceed with one course of action over, or in conjunction with, another is within the discretion of the Administrator.
(b) The field citation is an offer to settle an allegation of noncompliance with this Chapter. If the owner or operator declines to accept the agency's offer to settle within the time period set forth in the field citation, the agency may bring administrative or civil enforcement action under 10 GCA Chapter 76.
(c) The field citation shall set forth sufficient facts to notify the recipient of the alleged violations, the applicable law, the proposed settlement amount, and the time period during which to respond.
(d) By returning the signed settlement agreement attached to the field citation and payment of the proposed settlement amount to the agency, the owner or operator will be deemed to have accepted the terms and

conditions of the settlement offer.
(e) By signing the settlement agreement, the owner or operator waives his or her right to a contested case hearing pursuant to 10 GCA Chapter 76 and 5 GCA Chapter 9.

§ 501423 to § 501428. [Reserved.]

§ 501429. Delivery, Deposit, and Acceptance Prohibition.

(a) No person shall deliver to, deposit into, or accept a regulated substance into an UST or tank system that has been identified by the agency as ineligible for delivery, deposit, or acceptance.
(b) An UST or tank system shall be identified by the agency as ineligible for delivery, deposit, or acceptance by placement of a tag or other notice of ineligibility onto the fill pipe of the ineligible UST or tank system. If an owner or operator is not present at the facility at the time the underground storage tank is identified as ineligible, the agency may notify an employee at the facility at the time of identification in lieu of the owner or operator.
(c) No person shall remove, tamper with, destroy, or damage a tag or other notice of ineligibility affixed to any UST or tank system unless authorized to do so by the agency. Removal of a tag or other notice of ineligibility by the agency or person authorized by the agency shall occur only after the agency confirms that the conditions giving rise to the delivery prohibition have been corrected to the agency's satisfaction. The agency shall make this determination either at a hearing, if one is requested in accordance with this section, or as soon as practicable.
(d) Pursuant to this section, a tag or other notice of ineligibility may immediately be affixed to the fill pipe of an UST or tank system upon finding by the agency of any of the following:

(1) Operating without a permit issued by the agency;
(2) Operating inconsistently with one or more conditions of a permit issued by the agency;
(3) Required spill prevention equipment is not installed or

properly functioning or maintained;

(4) Required overfill protection equipment is not installed or properly functioning or maintained;

(5) Required release detection equipment is not installed or properly functioning or maintained;

(6) Required corrosion protection equipment is not installed or properly functioning or maintained;

(7) Failure to maintain financial responsibility; or

(8) Failure to protect a buried metal flexible connector from corrosion.

(e) An owner or operator of an UST or tank system designated by the agency to be ineligible may request a hearing to contest the agency's determination of ineligibility. The hearing shall modify or affirm the agency's determination of ineligibility and shall be conducted in accordance with 10 GCA Chapter 76 and 5 GCA Chapter 9, and the agency's rules of practice and procedure.

Appendix A

Configuration and Cost Assumptions for Airport Hydrant Fuel Distribution Systems (AHFDSs) and UST Systems with Field-Constructed Tanks (FCTs)

This appendix provides detailed descriptions of the costs of the proposed rule as they pertain to UST systems with field-constructed tanks (FCTs) and airport hydrant fuel distribution systems (AHFDSs). The appendix begins with a broad overview of these two tank types and the costs they will incur as a result of the proposed rule, and then provides a detailed breakdown of cost calculations.

A.1 Description of FCTs and AHFDSs

In addition to conventional underground storage tank (UST) systems, regulatory revisions of the proposed rule would affect two additional classes of tanks:

- Underground storage tank systems and ancillary equipment that are a part of an airport hydrant fuel distribution system used to fuel aircraft (AHFDSs). These systems do not have a dispenser at the end of the piping run, but instead have a pressurized hydrant (fill stand).

- UST systems with field-constructed tanks (FCTs) that have a capacity greater than 50,000 gallons and are constructed onsite.

EPA believes that large commercial and military airports employ AHFDSs, but most commercial systems typically use aboveground storage tanks for these systems. Similarly, existing underground FCTs appear to be used only by federal facilities (primarily Department of Defense); commercial facilities requiring bulk storage appear to use above-ground systems.

A review of existing state regulations suggests that 57 percent of FCTs and 40 percent of AHFDSs are currently located in states that regulate these systems in a manner consistent with the regulatory revisions of the proposed rule (i.e., these state programs already require compliance with state regulations that are roughly consistent with the proposed rule).[1] We therefore assume that 43 percent of FCTs and 60 percent of AHFDSs will incur additional costs due to the removal of deferrals associated with the proposed rule. For simplicity, however, detailed cost discussions in this appendix adjust for baseline regulatory compliance only after calculation of all costs.

A.2 Key Cost Components of the Removal of Deferrals – Preferred Option

Both AHFDSs and FCTs are currently deferred from most of the requirements in 40 CFR Part 280. However, the Spill Prevention, Control, and Countermeasure (SPCC) requirements of 40 CFR Part 112 (as well as some existing state regulations) require these systems and tanks to be subject to structural standards relatively consistent with the regulatory revisions of the proposed rule, and will therefore not require substantial capital upgrades. In addition, the majority of costs associated with the removal of deferrals from both these types of tank systems are associated with meeting the proposed release detection requirements.

[1] Industrial Economics, Inc., "Preliminary Assessment and Scoping of Data Related to Potential Revisions to the UST Regulations," Work Assignment 1-25, Tasks 2-4, February 21, 2009, Appendix A, Exhibits 4 and 5.

Release Detection Requirements

Our analysis assumes that 50 percent of FCTs do not use an automatic tank gauge (ATG) for release detection, and would be required to conduct annual precision testing under the proposed rule. We also assume that those FCTs that do use ATGs do not currently conduct monthly release detection monitoring nor conduct annual operability tests of their ATGs. Therefore, we assume that the proposed rule will impose costs associated with these activities on owners of FCTs. In addition, those FCTs with ATGs currently operating at a leak rate between 0.3 and 1.0 gallon per hour and between 1.0 and 2.0 gallons per hour will be required to conduct tri-annual and bi-annual precision testing, respectively, to achieve the proposed release detection requirements.

Our analysis assumes that no release detection methods are currently installed in the piping associated with FCTs. We assume that all piping associated with FCTs will need to undergo semiannual precision testing to achieve the proposed release detection requirements.

For the tanks associated with AHFDSs, our analysis assumes that 50 percent do not currently have ATGs installed and will need to install them to achieve the proposed release detection requirements. In addition, we assume that those tanks with ATGs installed do not currently conduct monthly release detection monitoring or annual operability tests of their ATGs. The proposed rule will impose costs associated with these activities on all owners and operators of AHFDSs.

Finally, we assume that no release-detection method is currently installed in the piping of AHFDSs. We therefore assume that all AHFDS piping must undergo semiannual precision testing to achieve the proposed release detection requirements.

Other Requirements

Removing deferrals for AHFDSs and FCTs will also require these systems to comply with Subparts B, C, E, G, and H of 40 CFR Part 280.[2] Furthermore, AHFDSs and FCTs will incur costs associated with other requirements of the proposed rule that will apply to all UST systems. These include: walkthrough inspections; overfill prevention equipment tests; spill prevention equipment tests; testing after repairs; notification of ownership change; recordkeeping associated with compatibility; and operator training.[3] Lastly, these systems will have to incur costs with a one-time notification of existence to the implementing agency.

[2] Subpart H requires owners and operators of regulated USTs to demonstrate financial responsibility (FR). EPA assumes that the two commercial airport facilities with AHFDSs will be able to demonstrate FR through the use of the financial test, and would therefore incur no cost to obtain financial assurance. The two commercial facilities would incur reporting and recordkeeping costs associated with filing proof of financial responsibility. EPA estimates this cost to consist of 0.25 technical labor hour (at $73.80/hr) and 0.1 clerical labor hour (at $39.11/hr) per year per facility, for a total of $45 across the two facilities. EPA assumes that the other AHFDSs and FCTs are owned or operated by federal entities, which would exempt them from the requirements of Subpart H.

[3] While EPA plans on requiring secondary containment on new tanks and piping, based on EPA's discussion with various parties, EPA is assuming no new installations of underground FCTs and tanks being installed at AHFDSs are aboveground storage tanks (ASTs). As a result, we assume that there are no costs associated with requiring secondary containment for new tanks (since no new underground tanks are assumed to be

Exhibit A-1 presents a breakdown of costs incurred by AHFDSs and FCTs as a result of the proposed rule.

Exhibit A-1 – Cost Summary, Preferred Option

REQUIREMENT	COSTS ASSOCIATED WITH AHFDSS ($ MILLIONS)	COSTS ASSOCIATED WITH FCTS ($ MILLIONS)	TOTAL COSTS ($ MILLIONS)
Release detection (including management costs)	$22.0	$5.3	$27.2
All other requirements associated with the removal of deferrals (Subparts B, C, E, and G)	$0.1	$0.04	$0.1
Other requirements of the proposed rule (Walkthrough inspections; overfill prevention equipment tests; spill prevention equipment tests; testing after repairs to spill and overfill prevention equipment, and interstices; operator training; one-time notification of existence)	$0.5	$0.4	$0.8
Total	$22.5	$5.7	$28.2

Note: These figures are adjusted for baseline regulatory compliance (i.e., only 43 percent of FCTs and 60 percent of AHFDSs incur costs associated with the removal of deferrals). However, these figures are not discounted to reflect the proposed three-year phase-in period associated with the removal of deferrals. With discounting, the total costs associated with regulating AHFDSs and FCTs under the preferred option are $22.6 million ($18 million for AHFDSs and $4.6 million for FCTs).

Columns and/or rows may not sum exactly due to rounding.

A.3 Key Cost Components of the Removal of Deferrals – Alternative Option 1

Alternative Option 1 imposes more extensive release detection requirements on both FCTs and AHFDSs than the Preferred Option.[4] For FCTs, those tanks utilizing an ATG operating at a leak rate greater than 0.2 gallon per hour, or without an existing ATG, will be required to undergo a

installed for these systems). For AHFDS piping, EPA does not believe secondary containment with interstitial monitoring is appropriate due to the extreme length of AHFDS piping runs, which complicates the need to slope piping back to a containment sump, and the need for steel piping given the high pressures (since corrosion due to water in the interstitial space is hard to prevent or control). As a result, EPA is not requiring secondary containment for piping associated with these systems; therefore, we also assume that there are no costs associated with requirement secondary containment for new piping.

[4] EPA assumes that FCTs and AHFDSs would meet the current release detection requirements by using 40 CFR 280.43(h) *Other methods*. Specifically, EPA assumes that tanks would be required to monthly detect a leak rate of 0.2 gallon per hour, and piping would be required to monthly detect a leak rate of 3 gallon per hour (in lieu of an automatic line leak detector) with an annual test of 0.1 gallon per hour. Furthermore, in estimating costs for these systems, EPA assumes that DoD will have third-party vendors come on-site to conduct the periodic tests.

monthly precision test at 0.2 gallon per hour. In addition, monthly release detection monitoring and annual operability tests of existing ATGs operating at 0.2 gallon per hour. Testing requirements for piping associated with FCTs will also be required, and are assumed to be identical to those required for AHFDSs described below.

For AHFDSs, Alternative Option 1 requires that all piping undergo both a monthly precision test at 3.0 gallons per hour, as well as an annual precision test at 0.1 gallon per hour. Requirements concerning the installation of ATGs, monthly release detection monitoring, and annual operability tests are identical to the Preferred Option. Costs incurred under the other subparts are also identical to the Preferred Option. **Exhibit A-2** presents a breakdown of costs incurred by AHFDSs and FCTs because of the proposed regulatory requirements under Alternative Option 1.

Exhibit A-2 – Cost Summary, Alternative 1

REQUIREMENT	COSTS ASSOCIATED WITH AHFDSS ($ MILLIONS)	COSTS ASSOCIATED WITH FCTS ($ MILLIONS)	TOTAL COSTS ($ MILLIONS)
Release detection (including management costs)	$141.8	$40.4	$182.1
All other requirements associated with the removal of deferrals (Subparts B, C, E, and G)	$0.1	$0.04	$0.1
Other requirements of the proposed rule (Walkthrough inspections; overfill prevention equipment tests; spill prevention equipment tests; testing after repairs to spill and overfill prevention equipment, and interstices; operator training; and one-time notification of existence)	$0.6	$0.6	$1.2
Total	$142.5	$41.0	$183.5

Note: These figures are adjusted for baseline regulatory compliance (i.e., only 43 percent of FCTs and 60 percent of AHFDSs incur costs associated with the removal of deferrals). However, these figures are not discounted to reflect the proposed three-year phase-in period associated with the removal of deferrals. With discounting, the total cost of this requirement under Alternative 1 is $153 million ($120 million for AHFDSs and $33 million for FCTs).

Columns and/or rows may not sum exactly due to rounding.

A.4 Detailed Cost Analysis – Release Detection

Release detection requirements represent a majority of all costs pertaining to FCTs and AHFDSs. It is also the most complex part of the cost calculations, with numerous inputs and parameters. **Exhibit A-3** displays these values as well as the assumptions or basis behind them.[5]

Exhibit A-3

INPUT/PARAMETER	VALUE	SOURCE/BASIS
Number of FCTs	239	See Chapter 2
Percent of FCTs without existing ATGs	50%	EPA assumption
Percent of FCTs with existing ATGs	50%	100% less 50% of FCTs without existing ATGs
Percent of FCTs with existing ATGs operating at 0.2 gallon per hour	25%	EPA assumption
Monthly release detection monitoring cost for ATGs	$5.24	ATG monthly costs, ICR Cost Inputs, Tab 11
Annual operability test cost for ATGs	$72.89	Annualized cost for ATG operability tests, Cost Model Inputs 3-22-10 "Revised Costs" for Operability tests for release detection methods
Percent of FCTs with existing ATGs operating at more than 0.2 gallon per hour	75%	100% less 25% of FCTs with existing ATGs operating at 0.2 gallon per hour
Percent of FCTs with existing ATGs operating at more than 0.2 gallon per hour operating at 0.3 – 1.0 gallon per hour	50%	EPA assumption
Percent of FCTs with ATGs operating at more than 0.2 gallon/ hour operating at 1.0 – 2.0 gallons/hour	50%	100% less 50% of FCTs with existing ATGs operating at more than 0.2 gallon per hour operating at 0.3 – 1.0 gallon per hour
Average FCT size	250,000 gallons	EPA assumption
Percent of FCTs with "long" associated piping of one mile	100%	EPA assumption
Percent of FCTs with "short" associated piping of 300 feet	0%	100% less 100% of FCTs with "long" associated piping of one mile
Percent of FCTs with "short" associated piping using electronic line leak detectors	50%	EPA assumption
Percent of FCTs with "short" associated piping using mechanical line leak detectors	50%	100% less 50% of FCTs with "short" associated piping installing electronic line leak detectors
Electronic line leak detector installation cost	$77	TO 3003 TDD#9, page 8, annualized over 20 years with a 7 percent discount rate
Mechanical line leak detector installation cost	$23	TO 3003 TDD#9, page 8, annualized over 20 years with a 7 percent discount rate

[5] Due to major data limitations, except otherwise indicated, the assumptions used to model these systems are based on EPA's best professional judgment.

INPUT/PARAMETER	VALUE	SOURCE/BASIS
Annual line leak detector line tightness cost	$114	ICR page 63, Exhibit 1
Line leak detector annual operability test cost	$75	Annualized cost for LLD operability tests, Cost Model Inputs 3-22-10 "Revised Costs" for Operability tests for release detection methods
Number of AHFDSs	162	See Chapter 2
Number of tanks per AHFDS	8	See Chapter 2
Percent of tanks associated with AHFDSs with existing ATGs	50%	EPA assumption
Percent of tanks associated with AHFDSs without existing ATGs	50%	100% less 50% of tanks associated with AHFDSs with existing ATGs
Installation cost for an ATG with eight probes (suitable for an AHFDS with eight associated tanks)	$1,276	Conversation with OUST, May 5, 2010: Annualized cost of: $4,051, cost of ATG with one probe (from TO 3003 TDD#9, page 8); plus eight hours of labor at $75/hour for installation; plus $1,352 per probe for seven additional probes
Percent of AHFDSs using precision testing of piping as their release detection mechanism	100%	EPA assumption
Number of miles per AHFDS (piping run)	5	EPA assumption
Number of "sections" per mile of piping in an AHFDS	2	EPA assumption
Percent of AHFDSs using an automatic line leak detector at 3.0 gallons per hour as their release detection mechanism	0%	100% less 100% of AHFDSs using precision test of piping as their release detection mechanism
Average precision test cost – tanks	$8,566	Average of the estimated precision testing costs for a 250,000 gallon tank as provided via three methods: Vista, Mass. Tech., and Varec. Vista costs $6,500 per tank, Mass. Tech. costs $2,000 - $25,000 depending on the size of the tank ($6,839 for a 250,000 gallon tank), and Varec costs $8,200 - $28,000 depending on the size of the tank ($12,358 for a 250,000 gallon tank).
Average precision test cost – piping run	$96,600	Average of the estimated precision testing costs for a piping run of five miles, with two sections per mile, provided via three methods: HCNA, Vista, and Varec. HCNA costs $5,500 per section, Vista costs $5,000 per section, and Varec costs $7 per foot.*
*The proposed rule differentiates release detection requirements by requiring precision testing and ATGs to monitor tanks and piping systems at a certain gallon per hour standard. Although it takes longer to complete a precision test at a lower leak rate, we do not cost out the downtime associated with these precision tests. We do not cost out this downtime because, as virtually all FCTs and AHFDSs are located at Department of Defense (DoD) facilities, it is likely that these facilities both have a plan in place to prevent the loss of essential functions during routine maintenance such as a precision test and that these facilities do not have perpetual operations that would incur costs when forced to stop for a precision test. In addition, we believe that it is		

INPUT/PARAMETER	VALUE	SOURCE/BASIS
reasonable to assume that these DoD facilities will have backup systems in place such that routine maintenance would not impede operations. Similarly, for the few commercial airport facilities with AHFDSs, we assume that the precision testing can be scheduled during facility downtime, so that no additional costs associated with a longer precision test are incurred.		

Release Detection for FCTs – Preferred Option

Release detection costs for FCTs can be broken down into costs related to tanks and costs related to the piping associated with FCTs. Under the proposed release detection requirements for FCTs, FCTs are required to utilize an acceptable release detection method, which entails any of the following:

- an ATG operating at a leak rate of 0.2 gallon per hour;
- annual precision testing at a leak rate of 0.5 gallon per hour;
- an ATG operating at a leak rate of 0.3 to 1.0 gallon per hour, and precision testing at 0.1 gallon per hour every three years; or
- an ATG operating at a leak rate of 1.0 to 2.0 gallons per hour, and precision testing at 0.1 gallon per hour every two years.[6]

We use the assumptions described in Exhibit A-3 to calculate the release detection costs associated with FCTs.

Given the assumptions that 50 percent of all FCTs have existing ATGs, and of these, 25 percent operate at a leak rate of 0.2 gallon per hour, we calculate monthly release detection monitoring costs of $1,879 (239*0.5*0.25*$5.24*12) and annual operability test costs of $2,178 (239*0.5*0.25*$72.89). Thus, FCTs with ATGs currently operating at a leak rate of 0.2 gallon per hour incur a cost of $4,056 annually.

We assume that remaining FCTs with existing ATGs operate at leak rates of either 0.3 to 1.0 gallon per hour or 1.0 to 2.0 gallons per hour, and must therefore also include a tri-annual or bi-annual precision test, respectively. We also assume that the remaining universe of FCTs with existing ATGs is divided evenly between the two groups. For those with existing ATGs operating at a leak rate of 0.3 to 1.0 gallon per hour, we calculate monthly release detection monitoring costs of $2,818 (239*0.5*0.75*0.5*$5.24*12), annual operability test costs of $3,266 (239*0.5*0.75*0.5*$72.89) and bi-annual precision testing costs of $191,927 (239*0.5*0.75*0.5*$8,566/2). Thus, FCTs with ATGs currently operating at a leak rate of 0.3 to 1.0 gallon per hour incur a cost of $198,011 annually.

[6] Under the proposed rule, FCTs can also use any other monitoring method approved by the implementing agency as a method of release detection. For modeling purposes, however, we assume, that owners or operators will only use the methods listed above.

For FCTs with existing ATGs operating at a leak rate of 1.0 to 2.0 gallons per hour, we calculate similar monthly release detection monitoring and annual operability test costs, and tri-annual precision testing costs of $127,951 (239*0.5*0.75*0.5*$8,566/3). Thus, FCTs with ATGs currently operating at a leak rate of 1.0 to 2.0 gallons per hour incur a cost of $134,036 ($127,951+$2,818+$3,266) annually.

For the 50 percent of existing FCTs without ATGs currently installed, we assume that an annual precision test is conducted. The total cost incurred by these FCTs annually is $1,023,612 (239*0.5*$8,566).

We assume that all FCTs have one mile of associated piping, which is subject to the release detection requirements applicable to AHFDSs (see below). The total costs incurred by the piping associated with FCTs is $9,234,960, or 239*$96,600/5 (standard testing costs apply to a five-mile-long piping run)*2 (testing is performed semiannually).

Total FCT release detection costs are $10,594,675, of which over 87 percent are related to the piping associated with these systems.

Release Detection for FCTs – Alternative Option 1

Under Alternative Option 1, for modeling purposes, we assume that FCTs will be able to meet release detection requirements by either using an ATG operating at a leak rate of 0.2 gallon per hour, or by conducting a monthly precision test.

Those FCTs with existing ATGs operating at a leak rate of 0.2 gallon per hour will incur costs similar to those incurred under the Preferred Option: $4,056. However, FCTs with existing ATGs operating at a greater leak rate must undergo monthly precision testing. The total annual costs are $9,212,507 (239*0.5*0.75*$8,566*12). In addition, those FCTs without existing ATGs must also undergo monthly precision testing, which total $12,283,343 annually (239*0.5*$8,566*12). Finally, piping associated with FCTs must undergo the same testing requirements as AHFDSs under Alternative Option 1 (239*$96,600/5 (standard testing costs apply to a five-mile-long piping run)*13 (monthly testing plus an annual test, or $60,027,240).

Under Alternative Option 1, total costs for release detection associated with FCTs are approximately $81,527,000, with over 70 percent of this related to the associated piping.

Release Detection for AHFDSs – Preferred Option

Release detection costs for AHFDSs can be divided into tank costs and associated piping costs.

We assume that all tanks associated with AHFDSs will utilize an ATG operating at a leak rate of 0.2 gallon per hour as the release detection method (i.e., none will use a precision test). Furthermore, we assume that 50 percent of the systems have ATGs already installed on them, while ATGs would have to be installed on the remainder. For those systems with existing ATGs, we calculate monthly release detection monitoring costs to be $40,746 (162*8*0.5*$5.24*12) and annual operability test costs for the ATGs to be $47,233 (162*8*0.5*$72.89). Total annual costs for these tanks are thus $87,979.

For the other 50 percent of existing tanks associated with AHFDSs that lack ATGs, we calculate annualized ATG installation costs to be $103,333 (162*0.5*$1,276). Monthly release detection monitoring and annual operability test costs for the ATGs are identical to those stated above. Total annual costs for these tanks are thus $191,312 ($87,979+$103,333). Overall, total annual costs for all tanks associated with AHFDSs are $279,291 ($87,979+$191,312).

The Preferred Option would require that the piping of AHFDSs undergo semiannual precision testing.[7] Total annual costs for the precision testing of piping associated with AHFDSs are $31,298,400, or 162*2*$96,600.

We calculate total annual release detection costs incurred by AHFDSs to be $31,577,691, of which over 99 percent are related to the piping associated with AHFDSs.

Release Detection for AHFDSs – Alternative Option 1

Under Alternative Option 1, release detection for AHFDSs consists of a monthly precision test at 3.0 gallons per hour as well as an annual precision test at 0.1 gallon per hour. Because we do not differentiate costs for precision tests by their leak rate (see Note 1 in Exhibit A-3), this is the equivalent of 13 precision tests annually. Total costs for tanks associated with AHFDSs do not change between the Preferred Option and Alternative Option 1: they remain $279,291. The cost of 13 precision tests annually for AHFDS piping is $203,439,600, or 162*13*$96,600.

Under Alternative Option 1, total annual costs for release detection associated with AHFDSs are $203,718,891, of which over 99 percent are related to the piping associated with AHFDSs.

Management Costs Associated with Release Detection – Preferred Option

In addition to the direct costs of the proposed release detection requirements, we also estimate management costs associated with the regulation. These management costs consist of five percent overhead costs associated with government/contractor program management, ten percent government contracting costs, and one percent base support costs.[8] Altogether, we estimate a sixteen percent management cost associated with release detection.

Sixteen percent of total FCT release detection costs is $1,695,948. Sixteen percent of total AHFDS release detection costs is $5,052,431. Total annual management costs associated with release detection are thus $6,747,579. In sum, under the Preferred Option, release detection costs for FCTs and AHFDSs, including management costs, are $48,919,945.

[7] The proposed rule also allows owners and operators of AHFDSs to use alternate release detection methods: automatic line leak detector capable of detecting a leak at 3.0 gallons per hour at 10 psi line pressure within 1 hour or equivalent plus quarterly interstitial monitoring; continuous interstitial monitoring; or another method approved by the implementing agency. For modeling purposes, however, we assume that owners or operators will only use the methods listed above.

[8] Bulk Field Construct UST Testing Summary and Pipeline Testing Cost Summary provided by DESC March 8, 2010, in "EPA Cost Summary.xlsx."

Management Costs Associated with Release Detection – Alternative Option 1

Sixteen percent of total FCT release detection costs under Alternative Option 1 is $13,043,678. Sixteen percent of total AHFDS release detection costs under Alternative Option 1 is $32,595,023. Total management costs associated with release detection under Alternative Option 1 are thus $45,638,701. In sum, under Alternative Option 1, release detection costs for FCTs and AHFDSs, including management costs, are $330,885,403.

A.5 Detailed Cost Analysis – Subparts B, C, E, G

Subpart B

Subpart B concerns the design, construction, installation, and notification of new FCTs and AHFDSs. We assume, however, that no new FCTs or AHFDSs will be installed. Thus, the requirements associated with Subpart B incur no costs.[9]

Subpart C

EPA assumes that both FCTs and AHFDs are already equipped with corrosion protection (i.e., constructed of: non-corrodible material, coated and cathodically protected steel according to a code of practice developed by a nationally recognized association or independent testing laboratory, fiberglass reinforced plastic (FRP), or steel tank clad with FRP).[10] EPA assumes continual monthly and annual inspections for corrosion protection. As a result, EPA assumes no incremental costs will occur associated with the cathodic protection inspection of Subpart C. However, we do assume that AHFDSs and FCTs will incur a recordkeeping cost associated with these inspections.

To estimate recordkeeping costs, we assume that each owner/operator will incur approximately $3.91 in labor cost (0.1 clerical hours) and approximately $0.10 in operation and maintenance costs. As each FCT is required to comply with this requirement, the annual cost for FCTs is $958.66 (approximately $4.01*239 FCTs). AHFDSs incur similar costs for maintaining records, which total $649.80 per year ($4.01*162 AHFDSs) (note that minor rounding affects these calculations).

Subpart C also requires owners and operators to maintain repair records. This consists of: (1) gathering information on each repair; (2) conducting a tightness test 30 days after repair; and (3) maintaining records. EPA assumes three percent of FCTs and AHFDSs require repair annually.[11] Gathering information on repair requires one technical hour of labor ($73.80), while maintaining records requires 0.1 clerical hour of labor ($3.91) and $0.10 in operation and maintenance costs.

[9] EPA assumes that existing systems already meet spill, overfill, and corrosion protection requirements (based on meeting with DESC on February 18, 2010).

[10] Based on a meeting between EPA/OUST and Defense Energy Support Center (DESC) on February 18, 2010.

[11] OUST 2007 ICR.

For FCTs, we assume that tightness testing performed after a repair costs $1,750.[12] The total costs for FCTs to test and maintain records are $13,105.39 ($73.80+$1,750+$4.01*7.17, which is three percent of 239 existing FCTs). Total FCT costs for Subpart C are then $14,064.05.

For AHFDSs, tightness testing following a repair must occur for every tank within the system. Given our assumption of an average of eight tanks associated with each AHFDS, we calculate costs associated with this portion of subpart C for AHFDSs to be $68,418.15 ($73.80+$1,750*8+$4.01*4.86, which is three percent of 162 existing AHFDSs). Total AHFDS costs for Subpart C are then $69,067.95.

Subpart E

Subpart E requires owners and operators to report to the implementing agency suspected or actual releases of regulated substances, release investigation and confirmation, and reporting and cleanup of spills and overfills. Gathering information occurs on two levels – the facility level and the contractor level. Facilities are assumed to use one managerial hour and four technical hours on gathering information ($385.94 total), as well as $2,653 in operation and maintenance costs. We assume contractors use five managerial hours, 31 technical hours, and 15 clerical hours ($3,328.13 total) with no operation and maintenance costs. We assume five percent of all FCTs suspect a release each year.[13] In addition, we assume 60 percent of facilities with suspected releases report them, which requires 0.25 managerial hours ($22.69) and $0.43 in operation and maintenance costs. Three percent of all FCTs are assumed to report a fill or overfill, and three percent are also assumed to notify the agency in the event that they are unable to clean up a spill. These notification costs are identical: 0.5 managerial hours ($45.37 and $3.00 in operation and maintenance costs). Total FCT costs for Subpart E are then $76,945.84, or the sum of ($385.94+$2,653+$3,328.13*11.95, or five percent of 239), and ($22.69 + $0.43 + $45.37 + $45.37 + $3.00 + $3.00 * 7.17, or three percent of 239).

AHFDSs incur identical costs to FCTs for compliance with Subpart E, with the only difference that there are 162 existing AHFDSs as compared to 239 existing FCTs. Total AHFDS costs for Subpart E are $52,155,76, or the sum of ($385.94+$2,653+$3,328.13*8.1, or five percent of 162), and ($22.69+$0.43+$45.37+$45.37+$3.00+$3.00*4.86, or three percent of 162).

Subpart G

Subpart G requires that owners and operators conduct a site assessment of the excavation zone, as well as provide notification of the closure or change-in-service. In addition, owners and operators must maintain records after permanent closure or change-in-service for at least three years, and mail records to the implementing agency if they are unable to maintain them on site. We assume that one FCT will close every five years.[14] Notification of closure or change-in-

[12] Email from George Thuemling at Varec, October 23, 2009.

[13] PCCI, "Summary of the Preliminary Assessment of Baseline and Cost Impacts Associated with Deferred UST Systems," July 2008, Attachments 6 and 11, Note 3.

[14] Information provided by OUST, March 17, 2010.

service requires 0.25 managerial hours ($22.69) and $3.00 for operation and maintenance costs. Site assessment of the excavation zone takes place on two levels—the facility level and the contractor level. The facility level requires 2.75 managerial hours ($249.56) and $2,333 for operation and maintenance costs. The contractor level requires 6 managerial hours, 40 technical hours, and 18 clerical hours ($5,113.86). Maintaining records requires 0.1 hours of clerical time ($3.91) and $0.10 for operation and maintenance costs. We assume that records for all FCTs will be maintained on site, and will not be mailed to an implementing agency. Total FCT costs for Subpart G are calculated as $1,545.22. (($22.69+$3.00+$2,333+$249.56+$5,113.86+$4.01)* 0.0008368). Note that this calculation multiplies the costs enumerated above by 0.0008368, or the number of FCTs closing every five years (1/(239*5)).

Subpart G for AHFDSs is similar to that for FCTs. We assume that one AHFDS will close every five years.[15] In addition, unlike FCTs, we assume that closing AHFDSs cannot maintain records on site, and will have to mail them to them implementing agency at a cost of 0.5 clerical hours ($19.56) and $3.00 in operation and maintenance costs. Thus, total AHFDS costs for Subpart G are $1,549.73 (($22.69+$3.00+$2,333+$249.56+$5,113.86+$4.01+$19.56+$3.00)*0.0012346). Note that this calculation multiplies the costs enumerated above by 0.0012346, or the number of AHFDSs closing every five years (1/(162*5)).

A.6 Detailed Cost Analysis – Other New Regulatory Requirements

If deferrals are removed from AHFDS and FCT systems, additional requirements under the proposed regulations also become mandatory for these systems. This section summarizes the methodology for valuing those requirements. Note that the estimates in this section are generally consistent with the timing and costs required for other types of tanks (see Chapter 3), but reflect a different labor rate more consistent with work performed at DoD facilities.

Walkthrough Inspections

The proposed regulation requires monthly walkthrough inspections for all tanks, including FCTs and AHFDSs. For FCTs, the walkthrough inspection, which includes the cost of repairs, if necessary, requires 50 minutes of technical labor ($63.47)[16] plus $0.13 in time value of money costs.[17] In addition, recordkeeping for this requirement costs $4.01 in total (0.1 hour of clerical labor at $3.91 and $0.10 in operation and maintenance costs). As walkthrough inspections are required monthly under both the Preferred Option and Alternative Option 1, the annual cost of this requirement for FCTs is $188,258.71 (($63.47+$0.13+$4.01)*239*12).

For AHFDSs, the walkthrough inspection requires 85 minutes of technical labor ($124.20)[18] as well as $1.32 in time value of money costs.[19] In addition, recordkeeping for walkthrough

[15] Information provided by OUST, March 17, 2010.

[16] Information provided by OUST, December 11, 2009.

[17] This is an annual cost stemming from costs incurred due to finding problems earlier under the regulatory requirements as compared with the baseline. See Appendix D for discussion on the time value of money.

[18] Information provided by OUST, March 22, 2010.

inspections for AHFDSs are identical to those for FCTs. The annual cost of this requirement for AHFDSs is $213,605.82 (($124.20+$1.32+$4.01)*162*12).

Overfill Prevention Equipment Tests

Under the Preferred Option, the proposed regulation requires overfill prevention equipment tests for all tanks, including FCTs and AHFDSs, every three years. The testing component costs $214 annually per tank. In addition, there is a time value of money cost of $11.00.[20] Recordkeeping for this requirement costs $4.01 ($3.91 for 0.1 hours of clerical labor and $0.10 in operation and maintenance costs). We calculate total annual costs for FCTs for the requirement to be $18,244.81 (($214+$11.99+$4.01)*239/3).

Costs for overfill prevention equipment tests are similar for AHFDSs, except that overfill prevention equipment tests take place on a by-tank basis. Since we assume eight tanks per AHFDS, the total testing cost at one AHFDS is approximately $1,800 (($214+$11.00)*8). Correspondingly, total annual costs for AHFDSs for this requirement are $97,418.00 (($1,800+$4.01)*162/3).

Under Alternative Option 1, overfill prevention equipment tests would be required every year. The time value of money cost in this case is $3.92.[21] Total annual costs for overfill prevention equipment tests for FCTs and AHFDSs would be $336,113.37 ((($214+$3.92+$4.01)*239) + ($1,743+$4.01)*162)).

Spill Prevention Equipment Tests

Under the Preferred Option, the proposed regulation requires annual spill prevention equipment tests for all tanks, including FCTs and AHFDSs. The testing component, which does not include the cost of repair, costs $125 per spill prevention equipment unit, as well as $3.34 in time value of money costs.[22] As with the other requirements, there is a $4.01 recordkeeping component ($3.91 for 0.1 hours of clerical labor and $0.10 in operation and maintenance costs). For FCTs, the total annual cost of this requirement is $31,631.67 ($125+$3.34+$4.01*239). We assume that the tanks associated with AHFDSs do not have spill prevention equipment, and therefore do not require any spill prevention equipment tests.[23]

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[19] This is an annual cost stemming from costs incurred due to finding problems earlier under the regulatory requirements as compared with the baseline. See Appendix D for discussion on the time value of money.

[20] This is an annual cost associated with the cost of finding issues requiring repair three years earlier as a result of requiring operability tests every year. See Appendix D for discussion on the time value of money.

[21] The time value of money cost falls since tests are required each year. For more information on how the time value of money is calculated, see Chapter 3 and Appendix D.

[22] This is an annual cost associated with the cost of finding issues requiring repair three years earlier as a result of requiring the tightness test every year. See Appendix D for discussion on the time value of money.

[23] The underground storage tanks associated with AHFDSs are typically intermediate tanks that are fed by larger tanks through permanently connected piping.

Under Alternative Option 1, spill prevention equipment would have to be replaced every three years, rather than being tested annually. The cost of replacing a spill bucket is $2,000 and the recordkeeping component applies for each replacement, so the total annual cost is calculated by annualizing the cost of a $2,000 replacement plus $4.01 in recordkeeping every three years. This cost is $182,508, or $763.63 ($2,004.01 annualized over three years with a seven percent discount rate) times 239.

Testing after Repairs to Spill and Overfill Prevention Equipment

The proposed regulation requires spill prevention equipment testing, overfill prevention equipment testing, and the recordkeeping associated with both of these activities for all tanks that have undergone repairs, including FCTs and AHFDSs. We assume that 15.6 percent of all spill prevention equipment requires repairs every year, as the average spill prevention equipment test pass rate is 84.4 percent.[24] We also assume that 21.4 of all overfills require repairs every year, as the average overfill equipment test pass rate is 78.6 percent.[25] The testing costs associated with these tests are the same as those stated in earlier sections. For FCTs, the total annual cost for testing spill prevention equipment after repairs is $4,810.05 (($125+$4.01)*37.28, or 15.6 percent of 239 FCTs), and the total annual cost for testing overfill prevention equipment after repairs is $11,150.40 (($214+$4.01)*51.15, or 21.4 percent of 239 FCTs). The total cost for this requirement for FCTs comes out to $15.960.45.

The tanks associated with AHFDSs do not have spill prevention equipment. However, since the overfill prevention equipment tests is performed on a per-tank basis, each AHFDS requiring a repair incurs the testing cost for each of its tanks. We assume an average of eight tanks associated with each AHFDS. Thus, for AHFDSs, the total annual cost for testing overfill prevention equipment after repairs is $59,490.67 (($214*8+$4.01)*34.67, or 21.4 percent of 162 AHFDSs).

Ownership Change Notification

The proposed regulation requires notification of ownership changes from all facilities changing ownership. Each of these notifications requires 0.25 managerial hours, or $22.69. We assume that one percent of all FCTs (2.39 FCTs) will change ownership every year. Thus, the total annual cost for FCTs pertaining to this requirement is $54.22 ($22.69*2.39).

The costs incurred under this requirement are identical for AHFDSs. The total annual cost for AHFDSs is $36.75, or $22.69*1.62 (one percent of existing AHFDSs).

Recordkeeping Associated with Compatibility

EPA assumes that existing AHFDSs and FCTs are not storing regulated substances blended with more than ten percent alcohol, and therefore, owners and operators of these systems would not

[24] Based on information on test pass rates for spill bucket sumps.

[25] Based on information on test pass rates for overfill alarms, flow restrictors, and automatic shutoff devices.

choose to demonstrate compatibility with those fuel blends. However, the proposed regulation would require that owners and operators retain equipment records for all new and replaced equipment. EPA assumes that all owners and operators of these systems will incur this cost annually as part of annual maintenance and replacement of UST system components. This recordkeeping cost is $1.88 per record, plus $0.01 to permanently store the record. Total annual recordkeeping costs associated with compatibility are $2,895 ($1.89 * 239 FCTs + $1.89 * 162 AHFDSs * 8 UST systems per AHFDS).

Operator Training

The operator training requirement includes both the costs of testing and training operators, as well as associated recordkeeping. Testing and training costs include both yearly and first-year costs. First-year costs are initial training costs incurred by all facilities. Yearly costs are costs of training new staff necessary to serve as operators. These costs are calculated according to the methodology below.

For modeling purposes, we assume that each facility will require one Class A (managerial labor, facilities), one Class B (technical labor, facilities), and three Class C (military pay grade of E-6) operators.[26] For Class A and B operators, we assume 20 percent "test out" and do not require training.[27] For those testing out, the facility incurs the cost of a test (assumed to be $60), as well as the 1.5 hours necessary to take the test.[28,29] Because only 20 percent of operators "test out," the test costs are, on average, $39.22 for Class A operators and $34.14 for Class B operators, or $60 plus (1.5* the labor rate)*0.2. For the 80 percent that cannot "test out," each operator must take a no-cost online training that culminates in a final exam. The final exam costs $169, and the training process requires ten hours of time.[30] Thus, the cost for operator training for those not testing out is $861.18 for Class A operators and $725.58 for Class B operators, or $169 plus (10* the labor rate)*0.8.

Class C operators are assumed to be trained by Class B operators. This training is assumed to take one hour of time for the Class B operator, as well as one hour each for the Class C operators being trained. Thus, the costs per facility for training Class C operators are $144.83, or $73.80 (Class B operator hourly rate) plus $66.56 (the hourly rate for three Class C operators). The total one-year cost for a facility then, incurred in the first year that the Operator Training requirement

[26] Assumption provided by OUST, September 8, 2009.

[27] Assumption provided by OUST, September 10, 2009.

[28] See Industrial Economics, Inc. "Draft Methodology for Assessing Cost-Effectiveness of Operator Training Options," Work Assignment 1-19, Task 4, December 30, 2008, page 12, Exhibit 2. Tests range from $45 to $75; $60 is the average test cost.

[29] See http://www.iccsafe.org/certification/ust-ast/2009UST-AST.pdf, 1.5 hours is the length of California's test.

[30] See http://www.petroleumtrainingsolutions.com/resources/ColoradoAB.pdf, the Colorado "webinar." The exam requires approximately two hours, and the training consists of two four-hour sessions, for a total of ten hours.

goes into effect, is $1,804.49, which, in its annualized form and including recordkeeping costs, is $170.33.

Yearly costs stem from turnover among operators, and the need to train new operators. Assuming a turnover rate of 22 percent per year for all operators, and that 20 percent of new Class A and Class B operators continue to "test" out while all new Class C operators must receive initial training, we obtain yearly costs of $332.84: (0.2*0.8*$861.18 plus 0.2*Class A labor rate) plus (0.2*0.8*$725.58 plus 0.2*Class B labor rate) plus ($140.35/3*0.66).[31]

For FCTs, operator training incurs a total annual cost of $119,299.92, or $170.33 plus $328.83 *239. For AHFDSs, operator training incurs a total annual cost of $80,864.38, or $170.33 plus $328.83*162.

One-Time Notification of Existence

The proposed rule requires owners and operators of AHFDSs and FCTs to provide a one-time notification to appropriate implementing agencies that their systems exist. EPA assumes that it will take 15 minutes of managerial labor to prepare and submit the notification. For AHFDSs, total annual costs is $3,675 (162 * 0.25 * $90.75). Annualized over a 20-year regulatory horizon, these costs are $347 per year. For FCTs, total annual costs is $5,422 (239 * 0.25 * $90.75). Annualized over a 20-year regulatory horizon, these costs are $512 per year.

[31] We assume turnover rates for all classes to be between 20 and 24 percent per year; 22 percent is the average turnover rate. For Class C operators, this means that there is an annual turnover of 66 percent since we assume three Class C operators per FCT/AHFDS.

GUAM ADMINISTRATIVE RULES AND REGULATIONS (GAR)

TITLE 22

GUAM ENVIRONMENTAL POTECTION AGENCY

CHAPTER 50

GUAM UNDERGROUND STORAGE TANK REGULATIONS

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GUAM ADMINISTRATIVE RULES AND REGULATIONS (GAR)

TITLE 22

GUAM ENVIRONMENTAL PROTECTION AGENCY (Guam EPA)

CHAPTER 50

GUAM UNDERGROUND STORAGE TANK REGULATIONS

Article 1. Scope and Installation Requirements for Partially Excluded UST Systems
Article 2. UST Systems: Design, Construction, and Installation
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Article 4. Release Detection
Article 5. Release Reporting, Investigation, and Confirmation
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Article 9. Lender Liability
Article 10. Operator Training
Article 11. Reserved
Article 12. Permits and Variances
Article 13. Enforcement

ARTICLE 1
SCOPE AND INSTALLATION REQUIREMENTS FOR PARTIALLY EXCLUDED UST SYSTEMS

§ 50101 to § 50109. [Reserved]
§ 50110. Applicability
§ 50111. Installation requirements for partially excluded UST systems

§ 50112. Definitions
§ 50113. Installation requirements for partially excluded UST systems--codes of practice
§ 50114 to § 50119. [Reserved.]

§ 50101 to § 50109. [Reserved]

§ 50110. Applicability.

(a) The requirements of this chapter apply to all owners and operators of an UST system as defined in § 50112 except as otherwise provided in this section.

(1) Airport hydrant fuel distribution systems, UST systems with field-constructed tanks, and UST systems that store fuel solely for use by emergency power generators must meet the requirements of this chapter as follows:

(A) Airport hydrant fuel distribution systems and UST systems with field-constructed tanks must meet all applicable requirements of this chapter, except that those installed before October 13, 2015 must meet the applicable requirements of Articles 4, 8, 10, and 12 no later than one year after October 13, 2015.

(B) UST systems that store fuel solely for use by emergency power generators must meet all applicable requirements of this chapter except that those installed before October 13, 2015 must meet the applicable requirements of Article 4 no later than one year after October 13, 2015.

(2) Any UST system listed in subsection (c) must meet the requirements of § 50111.

(b) Exclusions. The following UST systems are excluded from the requirements of this chapter:

(1) Any UST system holding hazardous wastes listed or identified under 10 Guam Code Annotated (GCA), Chapter 76, Underground Storage of Regulated Substances, or the

rules adopted thereunder, or Subtitle C of the Solid Waste Disposal Act, or a mixture of such hazardous waste and other regulated substances;

(2) Any wastewater treatment tank system that is part of a wastewater treatment facility regulated under Section 402 or 307(b) of the Clean Water Act;

(3) Equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks;

(4) Any UST system that contains a de minimis concentration of regulated substances; and

(5) Any emergency spill or overflow containment UST system that is expeditiously emptied after use.

(c) Partial Exclusions. Articles 2, 3, 4, 5, 7, 10, and 12 do not apply to:

(1) Wastewater treatment tank systems not covered under subsection (b)(2);

(2) Aboveground storage tanks associated with:

(A) Airport hydrant fuel distribution systems; and

(B) UST systems with field-constructed tanks;

(3) Any UST systems containing radioactive material that are regulated under the Atomic Energy Act of 1954 (42 U.S.C. 2011 and following); and

(4) Any UST system that is part of an emergency generator system at nuclear power generation facilities licensed by the Nuclear Regulatory Commission and subject to Nuclear Regulatory Commission requirements regarding design and quality criteria, including but not limited to 10 C.F.R. Part 50.

(5) Owners and operators of oil-water separators and decontamination tanks must notify the Agency and obtain a permit to install a new flow through process and decontamination tank in accordance with Article 2, as applicable. Owners and operators of flow-through process tanks and decontamination tanks are not required to obtain, renew, or pay for an annual fee to operate the tank and are not required to comply with Articles 3, 4, 5, and 10.

(6) Owners and operators of oil-water separators and decontamination tanks shall pay for a fee to install and close the system, and to conduct site assessment upon closure in accordance with §§ 50171 and 50172 of Article 7; and

(7) Owners and operator of oil-water separators and decontamination tanks that are installed after October 13, 2018, must be designed, constructed, and installed in accordance with Article 2, unless directed otherwise by the Agency.

§ 50111. Installation requirements for partially excluded UST systems.

(a) Owners and operators must install an UST system listed in section 50110 (c)(1), (3), or (4) storing regulated substances (whether of single or double wall construction) that meets the following requirements:

(1) Will prevent releases due to corrosion or structural failure for the operational life of the UST system;

(2) Is cathodically protected against corrosion, constructed of non-corrodible material, steel clad with a non-corrodible material, or designed in a manner to prevent the release or threatened release of any stored substance; and

(3) Is constructed or lined with material that is compatible with the stored substance.

(b) Notwithstanding subsection (a), an UST system without corrosion protection may be installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life. Owners and operators must maintain records that demonstrate compliance with the requirements of this subsection for the remaining life of the tank.

§ 50112. Definitions.

When used in this Article, the following terms have the meanings given below:

(a) "Aboveground release" means any release to the surface of the

land or to surface water. This includes, but is not limited to, releases from the aboveground portion of an UST system and aboveground releases associated with overfills and transfer operations as the regulated substance moves to or from an UST system.

(b) "Airport hydrant fuel distribution system" (also called "airport hydrant system") means an UST system which fuels aircraft and operates under high pressure with large diameter piping that typically terminates into one or more hydrants (fill stands). The airport hydrant system begins where fuel enters one or more tanks from an external source such as a pipeline, barge, rail car, or other motor fuel carrier.

(c) "Ancillary equipment" means any devices including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps used to distribute, meter, or control the flow of regulated substances to and from an UST.

(d) "Belowground release" means any release to the subsurface of the land and to groundwater. This includes, but is not limited to, releases from the belowground portions of an underground storage tank system and belowground releases associated with overfills and transfer operations as the regulated substance moves to or from an underground storage tank.

(e) "Beneath the surface of the ground" means beneath the ground surface or otherwise covered with earthen materials.

(f) "Cathodic protection" is a technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell. For example, a tank system can be cathodically protected through the application of either galvanic anodes or impressed current.

(g) "Cathodic protection tester" means a person who can demonstrate an understanding of the principles and measurements of all common types of cathodic protection systems as applied to buried or submerged metal piping and tank systems. At a minimum, such persons must have education and experience in soil resistivity, stray current, structure-to-soil potential, and component electrical isolation measurements of buried metal piping and tank systems.

(h) "Class A operator" means the individual who has primary responsibility to operate and maintain the UST system in accordance with

applicable requirements established by the agency. The Class A operator typically manages resources and personnel, such as establishing work assignments, to achieve and maintain compliance with regulatory requirements.

(i) "Class B operator" means the individual who has day-to-day responsibility for implementing applicable regulatory requirements established by the agency. The Class B operator typically implements in-field aspects of operation, maintenance, and associated recordkeeping for the UST system.

(j) "Class C operator" means the individual responsible for initially addressing emergencies presented by a spill or release from an UST system. The Class C operator typically controls or monitors the dispensing or sale of regulated substances.

(k) "Compatible" means the ability of two or more substances to maintain their respective physical and chemical properties upon contact with one another for the design life of the tank system under conditions likely to be encountered in the UST.

(l) "Connected piping" means all underground piping including valves, elbows, joints, flanges, and flexible connectors attached to a tank system through which regulated substances flow. For the purpose of determining how much piping is connected to any individual UST system, the piping that joins two UST systems should be allocated equally between them.

(m) "Consumptive use" with respect to heating oil means consumed on the premises.

(n) "Containment sump" means a liquid-tight container that protects the environment by containing leaks and spills of regulated substances from piping, dispensers, pumps, and related components in the containment area. Containment sumps may be single walled or secondarily contained and located at the top of tank (tank top or submersible turbine pump sump), underneath the dispenser (under-dispenser containment sump), or at other points in the piping run (transition or intermediate sump).

(o) "Corrosion expert" means a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and

mathematics acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Such a person must be accredited or certified as being qualified by the National Association of Corrosion Engineers or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control of buried or submerged metal piping systems and metal tanks.

(p) "Dielectric material" means a material that does not conduct direct electrical current. Dielectric coatings are used to electrically isolate UST systems from the surrounding soils. Dielectric bushings are used to electrically isolate portions of the UST system (e.g., tank from piping).

(q) "Dispenser" means equipment located aboveground that dispenses regulated substances from the UST system.

(r) "Dispenser system" means the dispenser and the equipment necessary to connect the dispenser to the underground storage tank system. The equipment necessary to connect the dispenser to the underground storage tank system includes check valves, shear valves, unburied risers or flexible connectors, or other transitional components that are underneath the dispenser and connect the dispenser to the underground piping.

(s) "Electrical equipment" means underground equipment that contains dielectric fluid that is necessary for the operation of equipment such as transformers and buried electrical cable.

(t) "EPA" means the United States Environmental Protection Agency.

(u) "Excavation zone" means the volume containing the tank system and backfill material bounded by the ground surface, walls, and floor of the pit and trenches into which the UST system is placed at the time of installation.

(v) "Existing UST system" means an UST system for which installation commenced on or before December 22, 1988.

(w) "Exposure assessment" means a determination regarding the extent of exposure of, or potential for exposure of, individuals to regulated substances from a release from an UST or tank system. An exposure assessment shall be based on factors such as the nature and extent of

contamination, the existence of or potential for pathways of human exposure (including ground or surface water contamination, air emissions, dermal exposure, soil ingestion, and food chain contamination), the size of the community or communities within the likely pathways of exposure, an analysis of expected human exposure levels with respect to short-term and long-term health effects associated with identified contaminants, and any available recommended exposure or tolerance limits for the contaminants.

(x) "Farm tank" is a tank located on a tract of land devoted to the production of crops or raising animals, including fish, and associated residences and improvements. A farm tank must be located on the farm property. Farm includes fish hatcheries, rangeland, and nurseries with growing operations.

(y) "Field-constructed tank" means a tank constructed in the field. For example, a tank constructed of concrete that is poured in the field, or a steel or fiberglass tank primarily fabricated in the field is considered field-constructed.

(z) "Flow-through process tank" is a tank that forms an integral part of a production process through which there is a steady, variable, recurring, or intermittent flow of materials during the operation of the process. Flow-through process tanks do not include tanks used for the storage of materials prior to their introduction into the production process or for the storage of finished products or by-products from the production process.

(aa) "Free product" refers to a regulated substance that is present as a non-aqueous phase liquid (e.g., liquid not dissolved in water).

(bb) "Gathering lines" means any pipeline, equipment, facility, or building used in the transportation of oil or gas during oil or gas production or gathering operations.

(cc) "Hazardous substance" means a hazardous substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 as amended, except any substance regulated as a hazardous waste under Subtitle C of the Solid Waste Disposal Act.

(dd) "Hazardous substance UST system" means an underground storage tank system that contains a hazardous substance or any mixture of

such substances and petroleum, and that is not a petroleum UST system.
(ee) "Heating oil" means petroleum that is No. 1, No. 2, No. 4—light, No. 4—heavy, No. 5—light, No. 5—heavy, and No. 6 technical grades of fuel oil; other residual fuel oils (including Navy Special Fuel Oil and Bunker C); and other fuels when used as substitutes for one of these fuel oils. Heating oil is typically used in the operation of heating equipment, boilers, or furnaces.
(ff) "Hydraulic lift tank" means a tank holding hydraulic fluid for a closed-loop mechanical system that uses compressed air or hydraulic fluid to operate lifts, elevators, and other similar devices.
(gg) "Liquid trap" means sumps, well cellars, and other traps used in association with oil and gas production, gathering, and extraction operations (including gas production plants), for the purpose of collecting oil, water, and other liquids. These liquid traps may temporarily collect liquids for subsequent disposition or reinjection into a production or pipeline stream, or may collect and separate liquids from a gas stream.
(hh) "Maintenance" means the normal operational upkeep to prevent an underground storage tank system from releasing product.
(ii) "Motor fuel" means a complex blend of hydrocarbons typically used in the operation of a motor engine, such as motor gasoline, aviation gasoline, No. 1 or No. 2 diesel fuel, or any blend containing one or more of these substances (e.g., motor gasoline blended with alcohol).
(jj) "Noncommercial purposes" with respect to motor fuel means not for resale.
(kk) "On the premises where stored" with respect to heating oil means UST systems located on the same property where the stored heating oil is used.
(ll) "Operational life" refers to the period beginning when installation of the tank system has commenced until the time the tank system is properly closed under Article 7.
(mm) "Operator" means any person in control of, or having responsibility for, the daily operation of the UST system.
(nn) "Overfill release" is a release that occurs when a tank is filled beyond its capacity, resulting in a discharge of the regulated substance to the environment.

(oo) "Owner" means:

1. In the case of an UST system in use on November 8, 1984, or brought into use after that date, any person who owns an UST system used for storage, use, or dispensing of regulated substances; and
2. In the case of any UST system in use before November 8, 1984, but no longer in use on that date, any person who owned such UST immediately before the discontinuation of its use.

(pp) "Permit" means written authorization, as provided for in 10 GCA, Chapter 76, § 76117, from the Administrator to install or operate an UST or tank system. A permit authorizes owners or operators to install and operate an UST or tank system in a manner, or to do an act, not forbidden by 10 GCA Chapter 76, or by this chapter, but requiring review by the Administrator.

(qq) "Person" means an individual, trust, estate, firm, joint stock company, corporation (including a government corporation), partnership, association, commission, consortium, joint venture, commercial entity, the state or a county, the United States government, federal agency, interstate body, or any other legal entity.

(rr) "Petroleum" means petroleum, including crude oil or any fraction thereof, that is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

(ss) "Petroleum UST system" means an underground storage tank system that contains petroleum or a mixture of petroleum with de minimis quantities of other regulated substances. Such systems include those containing motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

(tt) "Pipe" or "piping" means a hollow cylinder or tubular conduit that is constructed of non-earthen materials.

(uu) "Pipeline facilities" (including gathering lines) means pipe rights-of-way and any associated equipment, facilities, or buildings.

(vv) "Regulated substance" means hazardous substances, petroleum, and any other substance designated by the agency that, when released into the environment, may present substantial danger to human health,

welfare, or the environment. The term regulated substance includes but is not limited to petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons, such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

(ww) "Release" means any spilling, leaking, emitting, discharging, escaping, leaching, or disposing from an UST system into groundwater, surface water, or subsurface soils.

(xx) "Release detection" means determining whether a release of a regulated substance has occurred from the UST system into the environment or a leak has occurred into the interstitial space between the UST system and its secondary barrier or secondary containment around it.

(yy) "Repair" means to restore to proper operating condition a tank, pipe, spill prevention equipment, overfill prevention equipment, corrosion protection equipment, release detection equipment or other UST system component that has caused a release of product from the UST system or has failed to function properly.

(zz) "Replaced" means

(1) For an underground storage tank – to remove an underground storage tank and install another underground storage tank; or

(2) For connected piping – to remove 50 percent or more of connected piping and install other piping, excluding connectors, connected to a single underground storage tank. For underground storage tanks with multiple piping runs, this definition applies independently to each piping run.

(aaa) "Residential tank" is a tank located on property used primarily for dwelling purposes.

(bbb) "Secondary containment" or "secondarily contained" means a release prevention and release detection system for a tank or piping. This system has an inner and outer barrier with an interstitial space that is monitored for leaks. This term includes containment sumps when used for interstitial monitoring of piping.

(ccc) "Septic tank" is a water-tight covered receptacle designed to receive or process, through liquid separation or biological digestion, the sewage discharged from a building sewer. The effluent from such receptacle is distributed for disposal through the soil and settled solids

and scum from the tank are pumped out periodically and hauled to a treatment facility.

(ddd) "Storm water collection system" or "wastewater collection system" means piping, pumps, conduits, and any other equipment necessary to collect and transport the flow of surface water run-off resulting from precipitation, or domestic, commercial, or industrial wastewater to and from retention areas or any areas where treatment is designated to occur. The collection of storm water and wastewater does not include treatment except where incidental to conveyance.

(eee) "Surface impoundment" is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials) that is not an injection well.

(fff) "Tank" is a stationary device designed to contain an accumulation of regulated substances and constructed of non-earthen materials (e.g., concrete, steel, plastic) that provide structural support.

(ggg) "Temporary closure" or "temporarily closed" means that owners and operators do not deposit regulated substances into the UST or tank system nor dispense regulated substances from the UST or tank system for sixty days or longer, except for UST systems that store fuel solely for use by emergency power generators and UST systems with field-constructed tanks. For UST systems that store fuel solely for use by emergency power generators and UST systems with field-constructed tanks, "temporary closure" or "temporarily closed" means that the UST or tank system is empty, as defined in section 50170(a), and owners and operators do not deposit regulated substances into the UST or tank system for sixty (60) calendar days or longer.

(hhh) "Under-dispenser containment" or "UDC" means containment underneath a dispenser system designed to prevent leaks from the dispenser and piping within or above the UDC from reaching soil, groundwater, and surface water.

(iii) "Underground area" means an underground room, such as a basement, cellar, shaft or vault, providing enough space for physical inspection of the exterior of the tank situated on or above the surface of the floor.

(jjj) "Underground release" means any belowground or below water release.

(kkk) "Underground storage tank" or "UST" means any one or combination of tanks (including underground pipes connected thereto) that is used to contain an accumulation of regulated substances, and the volume of which (including the volume of underground pipes connected thereto) is ten (10%) percent or more beneath the surface of the ground. This term does not include any:

(1) Farm or residential tank of one thousand one hundred gallons or less capacity used for storing motor fuel for noncommercial purposes;

(2) Tank used for storing heating oil for consumptive use on the premises where stored;

(3) Septic tank;

(4) Pipeline facility (including gathering lines):

(A) Which is regulated under 49 U.S.C. chapter 601; or

(B) Which is an intrastate pipeline facility regulated under state laws as provided in 49 U.S.C. chapter 601, and which is determined by the Secretary of Transportation to be connected to a pipeline, or to be operated or intended to be capable of operating at pipeline pressure or as an integral part of a pipeline;

(5) Surface impoundment, pit, pond, or lagoon;

(6) Storm water or wastewater collection system;

(7) Liquid trap or associated gathering lines directly related to oil or gas production and gathering operations; or

(8) Storage tank situated in an underground area (such as a basement, cellar, mine working, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

The term underground storage tank or UST does not include any pipes connected to any tank which is described in paragraphs (1) to (8).

(jjj) "Upgrade" means the addition or retrofit of some systems such as cathodic protection, lining, or spill and overfill controls to improve the ability of an underground storage tank system to prevent the release of

product.
(kkk) "UST system" or "tank system" means an underground storage tank, connected underground piping, underground ancillary equipment, and containment system, if any.
(lll) "Variance" means a special written authorization from the Administrator to own, install, or operate an UST or tank system in a manner deviating from, or to do an act that deviates from, the requirements of this chapter that are more stringent than 40 C.F.R. Part 280.
(mmm) "Wastewater treatment tank" means a tank that is designed to receive and treat an influent wastewater through physical, chemical, or biological methods.

§ 50113. Installation requirements for partially excluded UST systems--codes of practice.

(a) The following current codes of practice may be used as guidance for complying with § 50111:

(1) NACE International Standard Practice SP 0285, "External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection";

(2) NACE International Standard Practice SP 0169, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems";

(3) American Petroleum Institute Recommended Practice 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems"; or

(4) Steel Tank Institute Recommended Practice R892, "Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems".

§ 50114 to § 50119. [Reserved.]

ARTICLE 2
UST SYSTEMS: DESIGN, CONSTRUCTION, AND INSTALLATION

§ 50120. Performance Standards for UST Systems
§ 50121. Upgrading of UST Systems
§ 50122. [Reserved.]
§ 50123. Tank and Piping Design for Hazardous Substances UST System
§ 50124. Secondary Containment Design
§ 50125. Under-Dispenser Containment
§ 50126. Performance Standards and Design for UST System – Code of Practice
§ 50127 to § 50129. [Reserved.]

§ 50120. Performance Standards for UST Systems.

(a) In order to prevent releases due to structural failure, corrosion, or spills and overfills for as long as the UST system is used to store regulated substances, owners and operators of UST systems must meet all applicable requirements of this Article. UST systems must meet the requirements of this section as follows:

(1) UST systems installed after December 22, 1988, other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must meet the requirements of this section, except as specified in this Article.

(2) Airport hydrant fuel distribution systems and UST systems with field-constructed tanks installed after October 13, 2015 must meet the requirements of this section.

(b) Tanks. Each tank must be properly designed, constructed, and installed, and any portion underground that routinely contains product must be protected from corrosion, in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

(1) The tank is constructed of fiberglass-reinforced plastic; or

(2) The tank is constructed of steel and cathodically protected in

the following manner:

(A) The tank is coated with a suitable dielectric material;

(B) Field-installed cathodic protection systems are designed by a corrosion expert;

(C) Impressed current systems are designed to allow determination of current operating status as required in § 50131(3); and

(D) Cathodic protection systems are operated and maintained in accordance with § 50131 or according to guidelines established by the agency; or

(3) The tank is constructed of steel and clad or jacketed with a non-corrodible material; or

(4) The tank is constructed of metal without additional corrosion protection measures provided that:

(A) The tank is installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life; and

(B) Owners and operators maintain records that demonstrate compliance with the requirements of subparagraph (A) for the remaining life of the tank; or

(5) The tank construction and corrosion protection are determined by the agency to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than paragraphs (1) to (4).

(c) Piping. The piping that routinely contains regulated substances and is in contact with the ground must be properly designed, constructed, installed, and protected from corrosion in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

(1) The piping is constructed of a non-corrodible material; or

(2) The piping is constructed of steel and cathodically protected in the following manner:

(A) The piping is coated with a suitable dielectric material;

(B) Field-installed cathodic protection systems are designed by a corrosion expert;

(C) Impressed current systems are designed to allow determination of current operating status as required in § 50131(3); and

(D) Cathodic protection systems are operated and maintained in accordance with § 50131 or guidelines established by the agency; or

(3) The piping is constructed of metal without additional corrosion protection measures provided that:

(A) The piping is installed at a site that is determined by a corrosion expert to not be corrosive enough to cause it to have a release due to corrosion during its operating life; and

(B) Owners and operators maintain records that demonstrate compliance with the requirements of subparagraph (A) for the remaining life of the piping; or

(4) The piping construction and corrosion protection are determined by the agency to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than the requirements in paragraphs (1) to (3).

(d) Spill and overfill prevention equipment.

(1) Except as provided in paragraphs (2) and (3), to prevent spilling and overfilling associated with product transfer to the UST system, owners and operators must use the following spill and overfill prevention equipment:

(A) Spill prevention equipment that will prevent release of product to the environment when the transfer hose is detached from the fill

pipe (for example, a spill catchment basin); and

(B) Overfill prevention equipment that will:

(i) Automatically shut off flow into the tank when the tank is no more than ninety-five (95%) percent full;

(ii) Alert the transfer operator when the tank is no more than ninety (90%) percent full by restricting the flow into the tank or triggering a high-level alarm; or

(iii) Restrict flow thirty (30) minutes prior to overfilling, alert the transfer operator with a high-level alarm one minute before overfilling, or automatically shut off flow into the tank so that none of the fittings located on top of the tank are exposed to product due to overfilling.

(2) Owners and operators are not required to use the spill and overfill prevention equipment specified in paragraph (1) if:

(A) Alternative equipment is used that is determined by the agency to be no less protective of human health and the environment than the equipment specified in paragraph (1)(A) or (B); or

(B) The UST system is filled by transfers of no more than twenty-five (25) gallons at one time.

(3) Flow restrictors used in vent lines may not be used to comply with paragraph (1)(B) when overfill prevention is installed or replaced after October 13, 2015.

(4) Overfill prevention methods that rely on the use of alarms must have the alarms clearly labeled "overfill alarm" and located where the delivery person can clearly see and hear the alarm in order to immediately stop delivery of the product.

(5) Spill and overfill prevention equipment must be periodically

tested or inspected in accordance with § 50135.

(e) Installation. The UST system must be properly installed in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and in accordance with the manufacturer's instructions.

(f) Certification of installation. All owners and operators must ensure that one or more of the following methods of certification, testing, or inspection is used to demonstrate compliance with subsection (e) by providing a certification of compliance on the "Certification of Underground Storage Tank Installation" form prescribed by the Administrator and in accordance with § 501325(d).

(1) The installer has been certified by the tank and piping manufacturers;

(2) The installer has been certified or licensed by the agency;

(3) The installation has been inspected and certified by a licensed professional engineer with education and experience in UST system installation;

(4) The installation has been inspected and approved by the agency;

(5) All work listed in the manufacturer's installation checklists has been completed and the checklists maintained; or

(6) The owner and operator have complied with another method for ensuring compliance with subsection (e) that is determined by the agency to be no less protective of human health and the environment.

(g) Secondary containment.

(1) UST systems installed after April 11, 2016, other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must be provided with secondary containment that meets the requirements of § 50124, except for suction piping that meets the requirements of § 50141(b)(6).

(2) Airport hydrant fuel distribution systems and UST systems with field-constructed tanks must be provided with

secondary containment that meets the requirements of § 50124, except for:

(A) Suction piping that meets the requirements of § 50141(b)(6);

(B) Piping associated with UST systems with field constructed tanks greater than 50,000 gallons; and

(C) Piping associated with airport hydrant systems.

§ 50121. Upgrading of UST Systems.

(a) All UST systems must comply with one of the following requirements:

(1) UST system performance standards in § 50120(b) to (d);

(2) For airport hydrant fuel distribution systems and UST systems with field-constructed tanks installed on or before October 13, 2015:

(A) The system performance standards in § 50120(b) and (c); and

(B) Not later than October 13, 2018, the system performance standards under § 50120(d); or

(3) Closure requirements under Article 7.

§ 50122. [Reserved.]

§ 50123. Tank and Piping Design for Hazardous Substances UST System.

Owners and operators of hazardous substance UST systems must provide secondary containment for tanks and underground piping that meets the requirements of § 50124

§ 50124. Secondary Containment Design.

(a) Secondary containment systems must be designed, constructed, and installed to:

(1) Contain regulated substances leaked from the primary

containment until they are detected and removed;

(2) Prevent the release of regulated substances to the environment at any time during the operational life of the UST system; and

(3) Be checked for evidence of a release at least every thirty (30) calendar days.

(b) Double-walled tanks must be designed, constructed, and installed to:

(1) Contain a leak from any portion of the inner tank within the outer wall; and

(2) Detect the failure of the inner wall.

(c) External liners (including vaults) must be designed, constructed, and installed to:

(1) Contain one hundred (100%) percent of the capacity of the largest tank within its boundary;

(2) Prevent precipitation and groundwater intrusion from interfering with the ability to contain or detect a leak or release of regulated substances; and

(3) Surround the UST completely to effectively prevent lateral and vertical migration of regulated substances.

§ 50125. Under-Dispenser Containment.

(a) Dispenser systems installed on or after April 11, 2016, must have under-dispenser containment that meets the requirements in this subsection. Under-dispenser containment requirement must:

A. Be liquid-tight on its sides, bottom, and at any penetrations;

B. Be compatible with the substance conveyed by the piping;

C. Allow for visual inspection and access to the components in the containment system; and

D. Be monitored for leaks from the dispenser system with a sensing device that signals the operator of the presence of regulated substances.

§ 50126. Performance Standards and Design for UST System - Code of Practice.

(a) The following current codes of practice may be used to comply with § 50120(b)(1):

(1) Underwriters Laboratories Standard 1316, "Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures"; or

(2) Underwriter's Laboratories of Canada S615, "Standard for Reinforced Plastic Underground Tanks for Flammable and Combustible Liquids".

(b) The following current codes of practice may be used to comply with § 50120(b)(2):

(1) Steel Tank Institute "Specification STI–P3® Specification and Manual for External Corrosion Protection of Underground Steel Storage Tanks";

(2) Underwriters Laboratories Standard 1746, "External Corrosion Protection Systems for Steel Underground Storage Tanks";

(3) Underwriters Laboratories of Canada S603, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids", and S603.1, "Standard for External Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids", and S631, "Standard for Isolating Bushings for Steel Underground Tanks Protected with External Corrosion Protection Systems";

(4) Steel Tank Institute Standard F841, "Standard for Dual Wall Underground Steel Storage Tanks"; or

(5) NACE International Standard Practice SP 0285, "External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection", and Underwriters Laboratories Standard 58, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids".

(c) The following current codes of practice may be used to comply with § 50120(b)(3):

(1) Underwriters Laboratories Standard 1746, "External

Corrosion Protection Systems for Steel Underground Storage Tanks";

(2) Steel Tank Institute ACT–100® Specification F894, "Specification for External Corrosion Protection of FRP Composite Steel Underground Storage Tanks";

(3) Steel Tank Institute ACT–100–U® Specification F961, "Specification for External Corrosion Protection of Composite Steel Underground Storage Tanks"; or

(4) Steel Tank Institute Specification F922, "Steel Tank Institute Specification for Permatank®".

(d) The following current codes of practice may be used to comply with § 50120(c)(1):

(1) Underwriters Laboratories Standard 971, "Nonmetallic Underground Piping for Flammable Liquids"; or

(2) Underwriters Laboratories of Canada Standard S660, "Standard for Nonmetallic Underground Piping for Flammable and Combustible Liquids".

(e) The following current codes of practice may be used to comply with § 50120(c)(2):

(1) American Petroleum Institute Recommended Practice 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems";

(2) Underwriters Laboratories Subject 971A, "Outline of Investigation for Metallic Underground Fuel Pipe";

(3) Steel Tank Institute Recommended Practice R892, "Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems";

(4) NACE International Standard Practice SP 0169, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems"; or

(5) NACE International Standard Practice SP 0285, "External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection".

(f) Tank and piping system installation practices and procedures

described in the following current codes of practice may be used to comply with the requirements of § 50120(e):

(1) American Petroleum Institute Publication 1615, "Installation of Underground Petroleum Storage System";

(2) Petroleum Equipment Institute Publication RP100, "Recommended Practices for Installation of Underground Liquid Storage Systems"; or

(3) National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code" and Standard 30A, "Code for Motor Fuel Dispensing Facilities and Repair Garages".

(g) When designing, constructing, and installing airport hydrant systems and UST systems with field-constructed tanks, owners and operators may use military construction criteria, such as Unified Facilities Criteria (UFC) 3–460–01, "Petroleum Fuel Facilities".

§ 50127 to § 50129. [Reserved.]

ARTICLE 3
GENERAL OPERATING REQUIREMENTS

§ 50130. Spill and Overfill Control
§ 50131. Operation and Maintenance of Corrosion Protection
§ 50132. Compatibility
§ 50133. Repairs Allowed
§ 50134. Notification, Reporting, and Recordkeeping
§ 50135. Periodic Testing of Spill Prevention Equipment and Containment Sumps Used for Interstitial Monitoring of Piping and Periodic Inspection of Overfill Prevention Equipment
§ 50136. Periodic Operation and Maintenance Walkthrough Inspections
§ 50137. Periodic Inspection and Maintenance of Under-Dispenser Containment Sensing Devices
§ 50138. General Operating Requirement – Codes of Practice

§ 50139. [Reserved.]

§ 50130. Spill and Overfill Control.

(a) Owners and operators must ensure that releases due to spilling or overfilling do not occur. The owner and operator must ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling.
(b) The owner and operator must report, investigate, and clean up any spills and overfills in accordance with § 50153.

§ 50131. Operation and Maintenance of Corrosion Protection.

All owners and operators of metal UST systems with corrosion protection must comply with the following requirements to ensure that releases due to corrosion are prevented until the UST system is permanently closed or undergoes a change-in-service pursuant to § 50171:

(1) All corrosion protection systems must be operated and maintained to continuously provide corrosion protection to the metal components of that portion of the tank and piping that routinely contain regulated substances and are in contact with the ground.

(2) All UST systems equipped with cathodic protection systems must be inspected for proper operation by a qualified cathodic protection tester in accordance with the following requirements:

(A) Frequency. All cathodic protection systems must be tested within six (6) months of installation and at least every three (3) years thereafter; and

(B) Inspection criteria. The criteria that are used to determine that cathodic protection is adequate as required by this section must be in accordance with a code of practice developed by a nationally recognized association.

(3) UST systems with impressed current cathodic protection systems must also be inspected every sixty (60) calendar days to ensure the equipment is operating properly.

(4) For UST systems using cathodic protection, records of the operation of the cathodic protection must be maintained, in accordance with § 50134, to demonstrate compliance with the performance standards in this section. These records must provide the following:

(A) The results of the last three (3) inspections required in paragraph (3); and

(B) The results of testing from the last two (2) inspections required in paragraph (2).

§ 50132. Compatibility.

(a) Owners and operators must use an UST system made of or lined with materials that are compatible with the substance stored in the UST system.
(b) Owners and operators must notify the agency at least thirty (30) days prior to switching to a regulated substance containing greater than ten (10%) percent ethanol, greater than twenty (20%) percent biodiesel, or any other regulated substance identified by the agency. In addition, owners and operators with UST systems storing these regulated substances must meet one of the following:

(1) Demonstrate compatibility of the UST system (including the tank, piping, containment sumps, pumping equipment, release detection equipment, spill equipment, and overfill equipment). Owners and operators may demonstrate compatibility of the UST system by using one of the following options:

(A) Certification or listing of UST system equipment or components by a nationally recognized, independent testing laboratory for use with the regulated substance stored; or

(B) Equipment or component manufacturer approval. The manufacturer's approval must be in writing,

indicate an affirmative statement of compatibility, specify the range of biofuel blends the equipment or component is compatible with, and be from the equipment or component manufacturer; or

(2) Use another option determined by the agency to be no less protective of human health and the environment than the options listed in paragraph (1).

(c) Owners and operators must maintain records in accordance with § 50134(d) documenting compliance with subsection (b) for as long as the UST system is used to store the regulated substance.

§ 50133. Repairs Allowed.

(a) Owners and operators of UST systems must ensure that repairs will prevent releases due to structural failure or corrosion as long as the UST system is used to store regulated substances. The repairs must meet the following requirements:

(1) Repairs to UST systems must be properly conducted in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory;

(2) Repairs to fiberglass-reinforced plastic tanks may be made by the manufacturer's authorized representatives or in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory;

(3) Metal pipe sections and fittings that have released product as a result of corrosion or other damage must be replaced. Non-corrodible pipes and fittings may be repaired in accordance with the manufacturer's specifications;

(4) Prior to the return to use of a repaired UST system, any repaired USTs must pass a tank tightness test in accordance with § 50143(3);

(5) Prior to the return to use of a repaired UST system, any repaired piping that routinely contains product must pass a line tightness test in accordance with § 50144(2);

(6) Prior to return to use of a repaired UST system, repairs to

secondary containment areas of tanks and piping used for interstitial monitoring, containment sumps used for interstitial monitoring of piping, and containment walls must have the secondary containment tested for integrity using vacuum, pressure, or liquid methods in accordance with requirements developed by the manufacturer, a code of practice developed by a nationally recognized association or independent testing laboratory, or requirements established by the agency;

(7) Within six (6) months following the repair of any cathodically protected UST system, the cathodic protection system must be tested in accordance with § 50131(2) and(3) to ensure that it is operating properly; and

(8) Prior to the return to use of repaired spill or overfill prevention equipment, the repaired spill or overfill prevention equipment must be tested or inspected, as appropriate, in accordance with § 50135 to ensure it is operating properly.

(b) UST system owners and operators must maintain records, in accordance with § 50134, of each repair until the UST system is permanently closed or undergoes a change-in-service pursuant to § 50171.

§ 50134. Notification, Reporting, and Recordkeeping.

(a) Notification. Owners and operators shall notify the agency of any of the following changes in information relating to an UST or tank system by submitting the "Notification for Underground Storage Tanks" form prescribed by the Administrator:

(1) Planned permanent closure or change-in-service, scheduled excavation work for permanent closure or change-in-service, or completed closure or change-in-service;

(2) Temporary closure or the return to currently-in-use status;

(3) Changes in product dispensing method, dispenser, or under dispenser containment;

(4) Changes in financial responsibility mechanism;

(5) Changes in leak detection method;
(6) Changes in spill and overfill prevention method;
(7) Changes in piping;
(8) Changes in type of regulated substances stored;
(9) Changes in corrosion protection mechanism; and
(10) Installation of or changes in secondary containment.

(b) Timing of notification. Owners and operators shall submit the notifications required in subsection (a) within thirty (30) calendar days following any of the changes requiring notification, except that:

(1) Notification of planned permanent closure or change-in-service must be received by the agency at least thirty (30) calendar days before commencement of excavation work for closure or change-in-service;
(2) Notification of scheduled excavation work for permanent closure or change-in-service must be received by the agency at least seven (7) calendar days before the scheduled work date;
(3) Notification of change in type of regulated substance stored to a regulated substance containing greater than ten (10%) percent ethanol or greater than twenty (20%) percent biodiesel must be received by the agency at least thirty (30) calendar days before the change; and
(4) Notification of temporary closure must be received by the agency within thirty (30) calendar days of the UST system having met the definition of temporary closure in § 50112.

(c) Reporting. Owners and operators must submit the following information to the agency:

(1) Reports of all releases including suspected releases § 50150 and § 50152, spills and overfills § 50153, and confirmed releases § 50161;
(2) Release response actions planned or taken, including initial abatement measures § 50162, initial site characterization § 50163, free product removal § 50164, investigation of soil and groundwater cleanup § 50165, and corrective action plan § 50166.

(3) Quarterly release response reports § 50165.2;
(4) Current evidence of financial responsibility as required in § 501110; and
(5) Notice of changes in Designated Class A or B Operators § 501241(c).

(d) Recordkeeping. Owners and operators must maintain the following information:

(1) A corrosion expert's analysis of site corrosion potential if corrosion protection equipment is not used § 50120(b)(4); § 50120(c)(3);
(2) Documentation of operation of corrosion protection equipment § 50131(4);
(3) Documentation of compatibility for UST systems § 50132(c);
(4) Documentation of UST system repairs § 50133(b);
(5) Documentation of compliance for spill and overfill prevention equipment and containment sumps used for interstitial monitoring of piping § 50135(b);
(6) Documentation of periodic walkthrough inspections § 50136(b);
(7) Documentation of compliance with under-dispenser containment sensing device requirements § 50137(b);
(8) Documentation of compliance with release detection requirements § 50145;
(9) Results of the site investigation conducted at permanent closure or change-in-service § 50174;
(10) Documentation of operator training § 501245;
(11) Permits or variances or both, including all documentation, as specified in § 501334(a); and
(12) Evidence of current financial assurance mechanisms used to demonstrate financial responsibility § 501111.

(e) Availability and maintenance of records.

(1) Owners and operators must keep the required records at the UST site or an alternative location approved by the agency.
(2) Owners and operators must make the records immediately available for inspection by the agency at the UST site.

(3) Permanent closure records required under § 50174 may be maintained or submitted to the agency as provided in § 50174.

(f) Owners and operators of UST systems must cooperate fully with inspections, monitoring, and testing conducted by the agency, as well as requests by the agency for document submission, testing, and monitoring by the owner or operator pursuant to 10 GCA, Chapter 76.

§ 50135. Periodic Testing of Spill Prevention Equipment and Containment Sumps Used for Interstitial Monitoring of Piping and Periodic Inspection of Overfill Prevention Equipment.

(a) Owners and operators of UST systems with spill and overfill prevention equipment and containment sumps used for interstitial monitoring of piping must meet these requirements by October 13, 2018 to ensure the equipment is operating properly and will prevent releases to the environment:

(1) Spill prevention equipment (such as a catchment basin, spill bucket, or other spill containment device) must prevent releases to the environment by meeting one of the following:

(A) The equipment is double walled and the integrity of both walls is periodically monitored at a frequency not less than once every thirty (30) calendar days. Owners and operators must begin meeting the requirements of subparagraph (B) and conduct a test within thirty (30) calendar days of discontinuing periodic monitoring of this equipment; or

(B) The spill prevention equipment is tested at least once every three hundred sixty-five (365) calendar days to ensure the equipment is liquid tight by using vacuum, pressure, or liquid testing in accordance with one of the following criteria:

(i) Requirements developed by the manufacturer. (Note: Owners and operators may use this option only if the manufacturer has developed

requirements.);

(ii) Code of practice developed by a nationally recognized association or independent testing laboratory; or

(iii) Requirements determined by the agency to be no less protective of human health and the environment than the requirements listed in clauses (i) and (ii).

(2) Containment sumps used for interstitial monitoring of piping must prevent releases to the environment by meeting one of the following:

(A) The equipment is double walled and the integrity of both walls is periodically monitored at a frequency not less than annually. Owners and operators must begin meeting the requirements of subparagraph (B) and conduct a test within thirty (30) calendar days of discontinuing periodic monitoring of this equipment; or

(B) The containment sumps used for interstitial monitoring of piping are tested at least once every three (3) years to ensure the equipment is liquid tight by using vacuum, pressure, or liquid testing in accordance with one of the criteria in paragraph (1)(B)(i) to (iii).

(3) Overfill prevention equipment must be inspected at least once every three years. At a minimum, the inspection must ensure that overfill prevention equipment is set to activate at the correct level specified in § 50120(d) and will activate when regulated substance reaches that level. Inspections must be conducted in accordance with one of the criteria in paragraph (1)(B)(i) to (iii).

(b) Owners and operators must maintain records as follows (in accordance with § 50134 for spill prevention equipment, containment sumps used for interstitial monitoring of piping, and overfill prevention equipment:

(1) All records of testing or inspection must be maintained for three (3) years; and

(2) For spill prevention equipment not tested every three hundred sixty-five (365) calendar days and containment sumps used for interstitial monitoring of piping not tested every three (3) years, documentation showing that the prevention equipment is double walled and the integrity of both walls is periodically monitored must be maintained for as long as the equipment is periodically monitored.

§ 50136. Periodic Operation and Maintenance Walkthrough Inspections.

(a) To properly operate and maintain UST systems, not later than October 13, 2018, owners and operators must conduct walkthrough inspections that, at a minimum, check the following equipment as specified below:

(1) Every thirty (30) calendar days:

(A) Spill prevention equipment:

(i) Visually check for damage;

(ii) Remove liquid or debris;

(iii) Check for and remove obstructions in the fill pipe;

(iv) Check the fill cap to make sure it is securely on the fill pipe; and

(v) For double walled spill prevention equipment with interstitial monitoring, check for a leak in the interstitial area; and

(B) Release detection equipment:

(i) Check to make sure the release detection equipment is operating with no alarms or other unusual operating conditions present; and

(ii) Ensure records of release detection testing are reviewed and current;

(2) Annually:

(A) Containment sumps:

(i) Visually check for damage, leaks to the containment area, or releases to the

environment;

(ii) Remove liquid (in contained sumps) or debris; and

(iii) For double walled sumps with interstitial monitoring, check for a leak in the interstitial area; and

(B) Hand held release detection equipment: Check devices such as tank gauge sticks or groundwater bailers for operability and serviceability;

(3) For UST systems receiving deliveries at intervals greater than every thirty (30) calendar days, spill prevention equipment may be checked in accordance with paragraph (1)(A) prior to each delivery; and

(4) For airport hydrant systems, at least once every thirty (30) days if confined space entry according to the Occupational Safety and Health Administration is not required or at least annually if confined space entry is required (see 29 C.F.R. Part 1910):

A. Hydrant pits:

(i) Visually check for any damage;

(ii) Remove any liquid or debris; and

(iii) Check for any leaks; and

B. Hydrant piping vaults: Check for any hydrant piping leaks.

(b) Owners and operators must maintain records, in accordance with § 50134, of operation and maintenance walkthrough inspections for three (3) years. Records must include a list of each area checked, whether each area checked was acceptable or needed action taken, a description of actions taken to correct an issue, and delivery records if spill prevention equipment is checked less frequently than every thirty (30) calendar days due to infrequent deliveries.

§ 50137. Periodic Inspection and Maintenance of Under-Dispenser Containment Sensing Devices.

(a) Sensing devices for under-dispenser containment required by § 50125

must:

(1) Be operated and maintained in accordance with one of the following:
  (A) The manufacturer's instructions;
  (B) A code of practice developed by a nationally recognized association or independent testing laboratory; or
  (C) Requirements determined by the agency to be no less protective of human health and the environment than those in subparagraphs (A) and (B).

(2) Be inspected for proper operation, and electronic and mechanical components tested, at least annually.

(b) UST system owners and operators must maintain records in accordance with § 50134 demonstrating compliance with subsection (a). Written documentation of all inspection, testing, and maintenance must be maintained for at least three (3) years. All records that the UDC sensor and connected equipment are designed to produce must be maintained for at least three (3) years after the record is generated.

§ 50138. General Operating Requirements - Codes of Practice.

(a) The following current codes of practice may be used to comply with § 50130(a):

(1) the transfer procedures described in National Fire Protection Association Standard 385;

(2) "Standard for Tank Vehicles for Flammable and Combustible Liquids" or American Petroleum Institute Recommended Practice 1007;

(3) "Loading and Unloading of MC 306/DOT 406 Cargo Tank Motor Vehicles"; or

(4) Further guidance on spill and overfill prevention appears in American Petroleum Institute Recommended Practice 1621, "Bulk Liquid Stock Control at Retail Outlets".

(b) The following current codes of practice may be used to comply with § 50131(2):

(1) NACE International Test Method TM 0101, "Measurement Techniques Related to Criteria for Cathodic Protection of Underground Storage Tank Systems";

(2) NACE International Test Method TM0497, "Measurement Techniques Related to Criteria for Cathodic Protection on Underground or Submerged Metallic Piping Systems";

(3) Steel Tank Institute Recommended Practice R051, "Cathodic Protection Testing Procedures for STI–P3® USTs";

(4) NACE International Standard Practice SP 0285, "External Control of Underground Storage Tank Systems by Cathodic Protection"; or

(5) NACE International Standard Practice SP 0169, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems".

(c) The following current code of practice may be useful in complying with § 50132:

(1) American Petroleum Institute Recommended Practice 1626, "Storing and Handling Ethanol and Gasoline-Ethanol Blends at Distribution Terminals and Filling Stations".

(d) The following current codes of practice may be used to comply with § 50133(a)(1):

(1) National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code";

(2) American Petroleum Institute Recommended Practice RP 2200, "Repairing Crude Oil, Liquified Petroleum Gas, and Product Pipelines";

(3) American Petroleum Institute Recommended Practice RP 1631, "Interior Lining and Periodic Inspection of Underground Storage Tanks";

(4) National Fire Protection Association Standard 326, "Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair";

(5) National Leak Prevention Association Standard 631, Chapter A, "Entry, Cleaning, Interior Inspection, Repair, and Lining of Underground Storage Tanks";

(6) Steel Tank Institute Recommended Practice R972, "Recommended Practice for the Addition of Supplemental Anodes to STI–P3® Tanks";

(7) NACE International Standard Practice SP 0285, "External Control of Underground Storage Tank Systems by Cathodic Protection"; or

(8) Fiberglass Tank and Pipe Institute Recommended Practice T–95–02, "Remanufacturing of Fiberglass Reinforced Plastic (FRP) Underground Storage Tanks".

(e) The following current codes of practice may be used to comply with § 50133(a)(6):

(1) Steel Tank Institute Recommended Practice R012, "Recommended Practice for Interstitial Tightness Testing of Existing Underground Double Wall Steel Tanks";

(2) Fiberglass Tank and Pipe Institute Protocol, "Field Test Protocol for Testing the Annular Space of Installed Underground Fiberglass Double and Triple-Wall Tanks with Dry Annular Space"; or

(3) Petroleum Equipment Institute Recommended Practice RP1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities".

(f) The following current code of practice may be used to comply with § 50135(a)(1),(2),(3) and 50137(a)(1)(B):

(1) Petroleum Equipment Institute Publication RP1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities".

§ 50139. [Reserved.]

ARTICLE 4
RELEASE DETECTION

§ 50140. General Requirements for all UST Systems

§ 50141. Requirements for Petroleum UST Systems
§ 50142. Requirements for Hazardous Substance UST Systems
§ 50143. Methods of Release Detection for Tanks
§ 50144. Methods of Release Detection for Piping
§ 50145. Release Detection Recordkeeping
§ 50146. Release Detection – Code of Practice
§ 50147 to § 50149. [Reserved.]

§ 50140. **General Requirements for all UST Systems.**

(a) Owners and operators of UST systems must provide a method, or combination of methods, of release detection that:

(1) Can detect a release from any portion of the tank and the connected underground piping that routinely contains product;

(2) Utilizes equipment compatible with the regulated substances being stored;

(3) Is installed, calibrated, operated, and maintained in accordance with the manufacturer's instructions;

(4) Is operated and maintained, and electronic and mechanical components are tested for proper operation, in accordance with one of the following: manufacturer's instructions; a code of practice developed by a nationally recognized association or independent testing laboratory; or requirements determined by the agency to be no less protective of human health and the environment than the requirements of paragraphs (a)(1) to (3) of this section. All maintenance and service of the release detection equipment must be conducted by a technician with current certification or training appropriate to the equipment serviced. A test of the proper operation must be performed at least every three hundred sixty-five (365) calendar days, or in a time frame recommended by the equipment manufacturer, whichever is more frequent. Beginning October 13, 2018, as applicable to the facility, the test must cover at a minimum the following

components and criteria:

(A) Automatic tank gauge and other controllers: test alarm; verify system configuration; test battery backup;

(B) Probes and sensors: inspect for residual buildup; ensure floats move freely; ensure shaft is not damaged; ensure cables are free of kinks and breaks; test alarm operability and communication with controller;

(C) Automatic line leak detector: test operation to meet criteria in § 50144(1) by simulating a leak;

(D) Vacuum pumps and pressure gauges: ensure proper communication with sensors and controller; and

(E) Hand-held electronic sampling equipment associated with groundwater and vapor monitoring: ensure proper operation; and

(5) Meets the performance requirements in § 50143 or § 50144, as applicable, with any performance claims and their manner of determination described in writing by the equipment manufacturer or installer. In addition, the methods listed in § 50143 (2), (3), (4), (8), (9), and (10) and § 50144(1), (2), and (4) must be capable of detecting the leak rate or quantity specified for that method in the corresponding section of the rule with a probability of detection of 0.95 and a probability of false alarm of 0.05.

(b) When a release detection method operated in accordance with the performance standards in § 50143 or § 50144 indicates a release may have occurred, owners and operators must notify the agency in accordance with Article 5.

(c) Any UST system that cannot apply a method of release detection that complies with the requirements of this Article must complete the change-in-service or closure procedures in Article 7.

§ 50141. Requirements for Petroleum UST Systems.

(a) Tanks. Owners and operators of petroleum UST systems must provide release detection for tanks as follows:

(1) UST systems other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks:

(A) Tanks installed on or before April 11, 2016, must be monitored for releases at least every thirty (30) calendar days using one of the methods listed in § 50143(4) to (9), except that:

(i) UST systems that meet the performance standards in § 50120, and the monthly inventory control requirements in § 50143(1) or (2), may use tank tightness testing (conducted in accordance with § 50143(3) at least every five (5) years until ten (10) years after the tank was installed; and

(ii) Tanks with capacity of 550 gallons or less and tanks with a capacity of 551 to 1,000 gallons that meet the tank diameter criteria in § 50143(2) may use manual tank gauging (conducted in accordance with § 50143(2).

(B) Tanks installed after April 11, 2016 must be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7).

(2) Airport hydrant fuel distribution systems and UST systems with field-constructed tanks with a capacity less than or equal to 50,000 gallons:

(A) Tanks installed before October 13, 2015 must be monitored for releases at least every thirty (30) calendar days using one of the methods listed in § 50143(4) to (9), except that:

(i) UST systems that meet the performance standards in § 50120 and the monthly inventory control requirements in § 50143(1) or (2), may use tank tightness testing (conducted in accordance with § 50143(3) at least every

five (5) years until ten (10) years after the tank was installed; and

(ii) Tanks with capacity of 550 gallons or less and tanks with a capacity of 551 to 1,000 gallons that meet the tank diameter criteria in § 50143(2) may use manual tank gauging (conducted in accordance with § 50143(2).

(B) Tanks installed on or after October 13, 2015 must be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7).

(3) UST systems with field-constructed tanks with a capacity greater than 50,000 gallons:

(A) Tanks installed before October 13, 2015 must be monitored for releases at least every thirty (30) calendar days using one of the methods listed in § 50143(4), (7), (8), and (9) or use one or a combination of the methods of release detection listed in § 50143(10); and

(B) Tanks installed on or after October 13, 2015 must be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7).

(b) Piping. Underground piping that routinely contains regulated substances must be monitored for releases as follows:

(1) Piping installed on or before April 11, 2016, for UST systems other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must meet one of the following:

(A) Pressurized piping. Underground piping that conveys regulated substances under pressure must:

(i) Be equipped with an automatic line leak detector conducted in accordance with § 50144(1); and

(ii) Have an annual line tightness test conducted in accordance with § 50144(2) or have monthly monitoring conducted in accordance with §

50144(3).

(B) Suction piping. Underground piping that conveys regulated substances under suction must:

(i) Have a line tightness test conducted at least every three (3) years and in accordance with § 50144(2);

(ii) Use a monthly monitoring method conducted in accordance with § 50144(3); or

(iii) Meet the standards in paragraph (6)(A) to (E).

(2) Piping installed or replaced after April 11, 2016, for UST systems other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must meet one of the following:

(A) Pressurized piping. Underground piping that conveys regulated substances under pressure must:

(i) Be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7); and

(ii) Be equipped with an automatic line leak detector in accordance with § 50144(1).

(B) Suction piping. Underground piping that conveys regulated substances under suction must:

(i) Be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7); or

(ii) Meet the standards in paragraph (6)(A) to (E).

(3) Piping installed on or after October 13, 2015, for UST systems other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must meet the technical specifications in paragraph (2)(A) or (B).

(4) Piping for UST systems with field-constructed tanks with a capacity less than or equal to 50,000 gallons and not part of an airport hydrant fuel distribution system:

(A) Piping installed before October 13, 2015 must meet the technical specifications in paragraph (1)(A) or (B).

(B) Piping installed on or after October 13, 2015 must meet the technical specifications in paragraph (2)(A) or (B).

(5) Piping for airport hydrant fuel distribution systems and UST systems with field-constructed tanks with a capacity greater than 50,000 gallons must meet one of the following:

(A) Pressurized piping. Underground piping that conveys regulated substances under pressure must:

(i) Be equipped with an automatic line leak detector conducted in accordance with § 50144(1); and

(ii) Have an annual line tightness test conducted in accordance with § 50144(2) or have monthly monitoring conducted in accordance with any of the methods in § 50143(7) to (9) designed to detect a release from any portion of the underground piping that routinely contains regulated substances; or

(iii) Use one or a combination of the methods of release detection listed in § 50144(4).

(B) Suction piping. Underground piping that conveys regulated substances under suction must:

(i) Have a line tightness test conducted at least every three (3) years and in accordance with § 50144(2);

(ii) Use a monthly monitoring method conducted in accordance with § 50143(7) to (9) designed to detect a release from any portion of the underground piping that routinely contains

regulated substances;

(iii) Use one or a combination of the methods of release detection listed in § 50144(4); or

(iv) Meet the standards in paragraph (6)(A) to (E).

(6) No release detection is required for suction piping that is designed and constructed to meet the following standards:

(A) The below-grade piping operates at less than atmospheric pressure;

(B) The below-grade piping is sloped so that the contents of the pipe will drain back into the storage tank if the suction is released;

(C) Only one check valve is included in each suction line;

(D) The check valve is located directly below and as close as practical to the suction pump; and

(E) A method is provided that allows compliance with subparagraphs (B) to (D) to be readily determined.

§ 50142. Requirements for Hazardous Substance UST Systems.

Owners and operators of hazardous substance UST systems must monitor these systems in accordance with § 50143(7) at least every thirty (30) calendar days. In addition, underground piping that conveys hazardous substances under pressure must be equipped with an automatic line leak detector in accordance with § 50144(1).

§ 50143. Methods of Release Detection for Tanks.

Each method of release detection for tanks used to meet the requirements of § 50140 to § 50142 must be conducted in accordance with the following:

(1) Inventory control. Product inventory control (or another test of equivalent performance) must be conducted monthly to

detect a release of at least one (1%) percent of flow-through plus one hundred thirty (130) gallons on a monthly basis in the following manner:

(A) Inventory volume measurements for regulated substance inputs, withdrawals, and the amount still remaining in the tank are recorded each operating day;

(B) The equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest one-eighth of an inch;

(C) If a manual measuring device is used (e.g., a gauge stick), the measurements must be made through a drop tube that extends to within one foot of the tank bottom. Level measurements shall be to the nearest one-eighth of an inch;

(D) The regulated substance inputs are reconciled with delivery receipts by measurement of the tank inventory volume before and after delivery;

(E) Deliveries are made through a drop tube that extends to within one foot of the tank bottom;

(F) Product dispensing is metered and recorded within the state standards for meter calibration or an accuracy of six cubic inches for every five (5) gallons of product withdrawn, and the meter is calibrated every three hundred sixty-five (365) calendar days; and

(G) The measurement of any water level in the bottom of the tank is made to the nearest one-eighth of an inch at least once a month.

(2) Manual tank gauging. Manual tank gauging must meet the following requirements:

(A) Tank liquid level measurements are taken at the beginning and ending of a period using the appropriate minimum duration of test value in the table below during which no liquid is added

to or removed from the tank;

(B) If a manual measuring device is used (e.g., a gauge stick), the measurements must be made through a drop tube that extends to within one foot of the tank bottom. Level measurements shall be to the nearest one-eighth of an inch;

(C) Level measurements are based on an average of two (2) consecutive stick readings at both the beginning and ending of the period;

(D) The equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest one-eighth of an inch;

(E) A release is suspected and subject to the requirements of Article 5 if the variation between beginning and ending measurements exceeds the weekly or monthly standards in the following table:

Nominal tank capacity	Minimum duration of test	Weekly standard (one test)	Monthly standard (four test average)
550 gallons or less	36 hours	10 gallons	5 gallons
551–1,000 gallons (when tank diameter is 64 inches)	44 hours	9 gallons	4 gallons
551–1,000 gallons (when tank diameter is 48 inches)	58 hours	12 gallons	6 gallons
551–1,000 gallons (also requires periodic tank tightness testing)	36 hours	13 gallons	7 gallons
1,001–2,000 gallons (also requires periodic tank tightness testing)	36 hours	26 gallons	13 gallons

(F) Tanks of five hundred fifty (550) gallons or less nominal capacity and tanks with a nominal capacity of five hundred fifty-one (551) to one thousand (1,000) gallons that meet the tank diameter criteria in the table in subparagraph (E) may use manual tank gauging as the sole method of release detection. All other tanks with a nominal capacity of five hundred fifty-one (551) to two thousand (2,000) gallons may

use manual tank gauging in place of inventory control in paragraph (1), combined with tank tightness testing as indicated in the table. Tanks of greater than two thousand (2,000) gallons nominal capacity may not use this method to meet the requirements of this Article.

(3) Tank tightness testing. Tank tightness testing (or another test of equivalent performance) must be capable of detecting a 0.1 gallon per hour leak rate from any portion of the tank that routinely contains product while accounting for the effects of thermal expansion or contraction of the product, vapor pockets, tank deformation, evaporation or condensation, and the location of the water table.

(4) Automatic tank gauging. Equipment for automatic tank gauging that test for the loss of product and conducts inventory control must meet the following requirements:

(A) The automatic product level monitor test can detect a 0.2 gallon per hour leak rate from any portion of the tank that routinely contains product;

(B) The automatic tank gauging equipment must meet the inventory control (or other test of equivalent performance) requirements of paragraph (1); and

(C) The test must be performed with the system operating in one of the following modes:

(i) In-tank static testing conducted at least once every thirty (30) calendar days; or

(ii) Continuous in-tank leak detection operating on an uninterrupted basis or operating within a process that allows

the system to gather incremental measurements to determine the leak status of the tank at least once every thirty (30) calendar days.

(5) Vapor monitoring. Testing or monitoring for vapors within the soil gas of the excavation zone must meet the following requirements:

(A) The materials used as backfill are sufficiently porous (e.g., gravel, sand, crushed rock) to readily allow diffusion of vapors from releases into the excavation area;

(B) The stored regulated substance, or a tracer compound placed in the tank system, is sufficiently volatile (e.g., gasoline) to result in a vapor level that is detectable by the monitoring devices located in the excavation zone in the event of a release from the tank;

(C) The measurement of vapors by the monitoring device is not rendered inoperative by the groundwater, rainfall, or soil moisture or other known interferences so that a release could go undetected for more than thirty (30) calendar days;

(D) The level of background contamination in the excavation zone will not interfere with the method used to detect releases from the tank;

(E) The vapor monitors are designed and operated to detect any significant increase in concentration above background of the regulated substance stored in the tank system, a component or components of that substance, or a tracer compound placed in the tank system;

(F) In the UST excavation zone, the site is assessed to ensure compliance with the requirements in subparagraphs (A) to (D) and to establish the number and positioning of monitoring wells that will detect

releases within the excavation zone from any portion of the tank that routinely contains product; and

(G) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(6) Groundwater monitoring. Testing or monitoring for liquids on the groundwater must meet the following requirements:

(A) The regulated substance stored is immiscible in water and has a specific gravity of less than one;

(B) Groundwater is never more than twenty (20) feet from the ground surface and the hydraulic conductivity of the soils between the UST system and the monitoring wells or devices is not less than 0.01 cm/sec (e.g., the soil should consist of gravels, coarse to medium sands, coarse silts or other permeable materials);

(C) The slotted portion of the monitoring well casing must be designed to prevent migration of natural soils or filter pack into the well and to allow entry of regulated substance on the water table into the well under both high and low groundwater conditions;

(D) Monitoring wells shall be sealed from the ground surface to the top of the filter pack;

(E) Monitoring wells or devices intercept the excavation zone or are as close to it as is technically feasible;

(F) The continuous monitoring devices or manual methods used can detect the presence of at least one-eighth of an inch of free product on top of the groundwater in the monitoring wells;

(G) Within and immediately below the UST system excavation zone, the site is assessed to ensure compliance with the requirements in

subparagraphs (A) to (E) and to establish the number and positioning of monitoring wells or devices that will detect releases from any portion of the tank that routinely contains product; and

(H) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(7) Interstitial monitoring. Interstitial monitoring between the UST system and a secondary barrier immediately around or beneath it may be used, but only if the system is designed, constructed, and installed to detect a leak from any portion of the tank that routinely contains product and also meets one of the following requirements:

(A) For double walled UST systems, the sampling or testing method can detect a leak through the inner wall in any portion of the tank that routinely contains product;

(B) For UST systems with a secondary barrier within the excavation zone, the sampling or testing method used can detect a leak between the UST system and the secondary barrier;

(i) The secondary barrier around or beneath the UST system consists of artificially constructed material that is sufficiently thick and impermeable (at least 10^{-6} cm/sec for the regulated substance stored) to direct a leak to the monitoring point and permit its detection;

(ii) The barrier is compatible with the regulated substance stored so that a leak from the UST system will not cause a deterioration of the barrier allowing a

release to pass through undetected;

(iii) For cathodically protected tanks, the secondary barrier must be installed so that it does not interfere with the proper operation of the cathodic protection system;

(iv) The groundwater, soil moisture, or rainfall will not render the testing or sampling method used inoperative so that a release could go undetected for more than thirty (30) calendar days;

(v) The site is assessed to ensure that the secondary barrier is always above the groundwater and not in a twenty-five-year flood plain, unless the barrier and monitoring designs are for use under such conditions; and,

(vi) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(C) For tanks with an internally fitted liner, an automated device can detect a leak between the inner wall of the tank and the liner, and the liner is compatible with the substance stored.

(8) Statistical inventory reconciliation. Release detection methods based on the application of statistical principles to inventory data similar to those described in paragraph (1) must meet the following requirements:

(A) Report a quantitative result with a calculated leak rate;

(B) Be capable of detecting a leak rate of 0.2 gallon per hour or a release of one hundred fifty (150) gallons within thirty (30) calendar days; and

(C) Use a threshold that does not exceed one-half the minimum detectible leak rate.

(9) Other methods. Any other type of release detection method, or combination of methods, can be used if:

(A) It can detect a 0.2 gallon per hour leak rate or a release of one hundred fifty (150) gallons within a month with a probability of detection of 0.95 and a probability of false alarm of 0.05; or

(B) The owner and operator can demonstrate to the agency that the method can detect a release as effectively as any of the methods allowed in paragraphs (3) to (8), and the agency approves the method. In comparing methods, the agency shall consider the size of release that the method can detect and the frequency and reliability with which it can be detected. If the method is approved, the owner and operator must comply with any conditions imposed by the agency on its use to ensure the protection of human health and the environment.

(10) Methods of release detection for field-constructed tanks. One or a combination of the following methods of release detection for tanks may be used when allowed by § 50141.

(A) Conduct an annual tank tightness test that can detect a 0.5 gallon per hour leak rate;

(B) Use an automatic tank gauging system to perform release detection at least every thirty (30) calendar days that can detect a leak rate less than or equal to one (1) gallon per hour. This method must be combined with a tank tightness test that can detect a 0.2 gallon per hour leak rate performed at least every three (3) years;

(C) Use an automatic tank gauging system to perform release detection at least every thirty (30) calendar days that can detect a leak rate less than or equal to two (2) gallons per hour. This method must be combined with a tank tightness test that can detect a 0.2 gallon per hour leak rate performed at least every

two (2) years;

(D) Perform vapor monitoring (conducted in accordance with paragraph (5) for a tracer compound placed in the tank system) capable of detecting a 0.1 gallon per hour leak rate at least every two (2) years;

(E) Perform inventory control (conducted in accordance with Department of Defense Directive 4140.25, ATA Airport Fuel Facility Operations and Maintenance Guidance Manual, or equivalent procedures) at least every thirty (30) calendar days that can detect a leak equal to or less than 0.5 percent of flow-through; and

(i) Perform a tank tightness test that can detect a 0.5 gallon per hour leak rate at least every two (2) years; or

(ii) Perform vapor monitoring or groundwater monitoring (conducted in accordance with paragraph (5) or (6), respectively, for the stored regulated substance) at least every thirty (30) calendar days; or

(F) Another method approved by the agency if the owner and operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in subparagraphs (A) to (E). In comparing methods, the agency shall consider the size of release that the method can detect and the frequency and reliability of detection.

§ 50144. Methods of Release Detection for Piping.

Each method of release detection for piping used to meet the requirements of § 50140 to § 50142 must be conducted in accordance with the following:

(1) Automatic line leak detectors. Methods which alert the operator to the presence of a leak by restricting or shutting off the flow of regulated substances through piping may be used only if they detect leaks of three (3) gallons per hour at

ten (10) pounds per square inch line pressure within one hour. An annual test of the operation of the leak detector must be conducted in accordance with § 50140(a)(4).

(2) Line tightness testing. A periodic test of piping may be conducted only if it can detect a 0.1 gallon per hour leak rate at one and one-half times the operating pressure.

(3) Applicable tank methods. Any of the methods in § 50143(5) to (9) may be used if they are designed to detect a release from any portion of the underground piping that routinely contains regulated substances.

(4) Methods of release detection for piping associated with airport hydrant systems and field-constructed tanks. One or a combination of the following methods of release detection for piping may be used when allowed by § 50141.

(A) (i) Perform a semiannual or annual line tightness test at or above the piping operating pressure in accordance with the table below.

MAXIMUM LEAK DETECTION RATE PER TEST SECTION VOLUME

Test section volume (gallons)	Semiannual test—leak detection rate not to exceed (gallons per hour)	Annual test—leak detection rate not to exceed (gallons per hour)
<50,000	1.0	0.5
□50,000 to <75,000	1.5	0.75
□75,000 to <100,000	2.0	1.0
□100,000	3.0	1.5

(ii) Piping segment volumes ≥100,000 gallons not capable of meeting the maximum 3.0 gallon per hour leak rate for the semiannual test may be tested at a leak rate up to 6.0 gallons per hour according to the following schedule:

PHASE IN FOR PIPING SEGMENTS ≥100,000 GALLONS IN VOLUME

First test	Not later than three years after the effective date of these rules (may use up to 6.0 gph leak rate).
Second test	Between three and six years after the effective date of these rules (may use up to 6.0 gph leak rate).
Third test	Between six and seven years after the effective date of these rules (must use 3.0 gph for leak rate).
Subsequent tests..	Not later than seven years after the effective date of these rules, begin using semiannual or annual line testing according to the Maximum Leak Detection Rate Per Test Section Volume table above.

(B) Perform vapor monitoring (conducted in accordance with § 50143(5) for a tracer compound placed in the tank system) capable of detecting a 0.1 gallon per hour leak rate at least every two (2) years;

(C) Perform inventory control (conducted in accordance with Department of Defense Directive 4140.25, ATA Airport Fuel Facility Operations and Maintenance Guidance Manual, or equivalent procedures) at least every thirty (30) calendar days that can detect a leak equal to or less than 0.5 percent of flow-through; and

(i) Perform a line tightness test (conducted in accordance with subparagraph (A) using the leak rates for the semiannual test) at least every two (2) years; or

(ii) Perform vapor monitoring or groundwater monitoring (conducted in accordance with § 50143(5) or (6), respectively, for the stored regulated substance) at least every thirty (30) calendar days; or

(D) Another method approved by the agency if the owner and operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in subparagraphs (A) to (C). In comparing

methods, the agency shall consider the size of release that the method can detect and the frequency and reliability of detection.

§ 50145. Release Detection Recordkeeping.

All UST system owners and operators must maintain records in accordance with § 50134 demonstrating compliance with all applicable requirements of this subchapter. These records must include the following:

(1) All written performance claims pertaining to any release detection system used, and the manner in which these claims have been justified or tested by the equipment manufacturer or installer, must be maintained for the operating life of the UST system. Records of site assessments required under § 50143(5)(F) and (6)(G) must be maintained for as long as the methods are used. Records of site assessments developed after October 13, 2015, must be signed by a professional engineer or professional geologist, or equivalent licensed professional with experience in environmental engineering, hydrogeology, or other relevant technical discipline acceptable to the agency;

(2) The results of any sampling, testing, or monitoring must be maintained for at least three (3) years, except as follows:

(A) The results of annual operation tests conducted in accordance with § 50140(a)(4) must be maintained for three (3) years. At a minimum, the results must list each component tested, indicate whether each component tested meets criteria in § 50140(a)(4) or needs to have action taken, and describe any action taken to correct an issue;

(B) The results of tank tightness testing conducted in accordance with § 50143(3) must be retained until the next test is conducted; and

(C) The results of tank tightness testing, line tightness

testing, and vapor monitoring using a tracer compound placed in the tank system conducted in accordance with § 50143(10) or § 50144(4) must be retained until the next test is conducted;

(3) All records that the equipment being utilized to monitor or maintain the UST system is designed to produce must be maintained for at least three (3) years after the record is generated; and

(4) Written documentation of all calibration, maintenance, and repair of release detection equipment permanently located on-site must be maintained for at least three (3) years. Any schedules of required calibration and maintenance provided by the release detection equipment manufacturer must be retained for five (5) years from the date of installation.

§ 50146. Release Detection - Code of Practice.

The following current code of practice may be used to comply with § 50140(a)(4):

(1) Petroleum Equipment Institute Publication RP1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities"; and

(2) Practices described in the American Petroleum Institute Recommended Practice RP 1621, "Bulk Liquid Stock Control at Retail Outlets" may be used, where applicable, as guidance in meeting the requirements of § 50143(1).

§ 50147 to § 50149. [Reserved;]

ARTICLE 5
RELEASE REPORTING, INVESTIGATION, AND CONFIRMATION

§ 50150. Reporting of Suspected Release

§ 50151. Investigation of Off-site Impacts
§ 50152. Release Investigation and Confirmation Steps
§ 50153. Reporting and Cleanup of Spills and Overfill
§ 50154 to § 50159. [Reserved.]

§ 50150. Reporting of Suspected Release.

Owners and operators of UST systems must notify the agency within twenty-four (24) hours and follow the procedures in § 50152 for any of the following conditions:

(1) The discovery by any person of evidence of released regulated substances at the UST site or in the surrounding area (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface water).

(2) Unusual UST or tank system operating conditions observed or experienced by owners and operators (such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST system, an unexplained presence of water in the tank, or liquid in the interstitial space of secondarily contained systems), unless:

(A) The system equipment or component is found not to be releasing regulated substances to the environment;

(B) Any defective system equipment or component is immediately repaired or replaced; and

(C) For secondarily contained systems, except as provided for in § 50143(7)(B)(iv), any liquid in the interstitial space not used as part of the interstitial monitoring method (for example, brine filled) is immediately removed.

(3) Monitoring results, including investigation of an alarm, from a release detection method required under § 50141 and § 50142 that indicate a release may have occurred unless:

(A) The monitoring device is found to be defective, and is

immediately repaired, recalibrated or replaced, and additional monitoring does not confirm the initial result;

(B) The leak is contained in the secondary containment and:

(i) Except as provided for in § 50143(7)(B)(iv), any liquid in the interstitial space not used as part of the interstitial monitoring method (for example, brine filled) is immediately removed; and

(ii) Any defective system equipment or component is immediately repaired or replaced;

(C) In the case of inventory control described in § 50143(1), a second month of data does not confirm the initial result or the investigation determines no release has occurred; or

(D) The alarm was investigated and determined to be a non-release event (for example, from a power surge or caused by filling the tank during release detection testing).

§ 50151. Investigation of Off-site Impacts.

When required by the agency, owners and operators of UST systems must follow the procedures in § 50152 to determine if the UST system is the source of off-site impacts. These impacts include the discovery of regulated substances (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface and drinking waters) that has been observed by the agency or brought to the agency's attention by any person.

§ 50152. Release Investigation and Confirmation Steps.

(a) Unless release response action is initiated in accordance with Article 6, owners and operators must immediately investigate and

confirm all suspected releases of regulated substances requiring reporting under § 50150 within seven (7) calendar days following the discovery of the suspected release, unless a written request for extension of time is granted by the Administrator.

(b) Investigations and confirmations required in subsection (a) must use the following steps or another procedure approved by the agency:

(1) System test. Owners and operators must conduct tests (according to the requirements for tightness testing in § 50143(3) and § 50144(2) or, as appropriate, secondary containment testing described in § 50133(a)(6).

(A) The test must determine whether:

(i) A leak exists in that portion of the tank that routinely contains product, or the attached delivery piping; or

(ii) A breach of either wall of the secondary containment has occurred.

(B) If the system test confirms a leak into the interstice or a release, owners and operators must repair, replace, or close the UST system. In addition, owners and operators must begin release response action in accordance with Article 6 if the test results for the system, tank, or delivery piping indicate that a release exists.

(C) Further investigation is not required if the test results for the system, tank, and delivery piping do not indicate that a release exists and if environmental contamination is not the basis for suspecting a release.

(D) Owners and operators must conduct a site assessment as described in paragraph (2) if the test results for the system, tank, and delivery piping do not indicate that a release exists but environmental contamination is the basis for suspecting a release.

(2) Site assessment. Owners and operators must measure for

the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the nature of the stored substance, the type of initial alarm or cause for suspicion, the type of backfill and surrounding soil, the depth and flow of groundwater, and other factors as appropriate for identifying the presence and source of the release.

(A) If the test results for the excavation zone or the UST site indicate that a release has occurred, owners and operators must begin release response action in accordance with Article 6;

(B) If the test results for the excavation zone or the UST site do not indicate that a release has occurred, further investigation is not required.

(c) If it is determined that a release has not occurred, owners and operators must report the results of the investigation in writing to the agency within thirty (30) calendar days following discovery of the suspected release. The report shall include, but not be limited to, results of the tests required by subsection (b) as well as performance claims pursuant to § 50140(a)(5).

§ 50153. Reporting and Cleanup of Spills and Overfill.

(a) Owners and operators of UST systems must contain and immediately clean up all spills and overfills in a manner which is protective of human health and the environment as set forth in § 50165.3.

(b) Owners and operators must notify the agency within twenty-four (24) hours and begin release response action in accordance with Article 6 in the following cases:

(1) Spill or overfill of petroleum that results in a release to the environment that exceeds twenty-five (25) gallons or that causes a sheen on nearby surface waters; and

(2) Spill or overfill of hazardous substances that result in a release to the environment that equals or exceeds its reportable quantity under CERCLA (40 CFR part 302).

(c) Owners and operators of UST systems must contain and immediately clean up a spill or overfill of petroleum that is less than twenty-five (25) gallons or a spill or overfill of a hazardous substance that is less than the reportable quantity. If cleanup cannot be accomplished within twenty-four (24) hours, then the owners and operators must immediately notify the agency of the incident and continue cleaning up the spill or overfill. Owners and operators must also complete and submit to the agency a written report of the actions taken in response to the spill or overfill within twenty (20) calendar days.

(d) An owner or operator must submit the appropriate forms listed in § 501111(b) documenting current evidence of financial responsibility to the Administrator within thirty (30) days after identifying a release from an underground storage tank or tank system required to be reported under this section.

§ 50154 to § 50159. [Reserved.]

ARTICLE 6
RELEASE RESPONSE ACTION

§ 50160. General
§ 50161. Immediate Response Action
§ 50161.1. Posting of Signs
§ 50162. Initial Abatement Measures and Site Assessment
§ 50163. Initial Site Characterization
§ 50164. Free Product Removal
§ 50165. Investigation for Soil and Groundwater Cleanup
§ 50165.1. Notification of Confirmed Release
§ 50165.2. Release Response Reporting
§ 50165.3. Site Cleanup Criteria
§ 50166. Corrective Action

§ 50167. Public Participation for Corrective Action Plans
§ 50168 to § 50169. [Reserved.]

§ 50160. General.

Owners and operators of petroleum or hazardous substance UST systems must, in response to a confirmed release from the UST system, comply with the requirements of this Article, except for USTs excluded under § 50110(b) and UST systems subject to RCRA Subtitle C corrective action requirements under section 3004(u) of the Resource Conservation and Recovery Act, as amended.

§ 50161. Immediate Response Action.

(a) Upon confirmation of a release in accordance with § 50152 or after a release from the UST system is identified in any other manner, owners and operators must perform the following response actions within twenty-four (24) hours:

(1) Report the release to the agency by telephone;
(2) Take necessary actions to prevent any further release of the regulated substance into the environment, including removal of as much of the regulated substance from the UST or tank system as possible;
(3) Identify and mitigate any safety hazards (such as fire, explosion, and vapor hazards) posed by the release of the regulated substance; and
(4) Take necessary action to minimize the spread of contamination.

(b) Within seven (7) days of confirmation, owners and operators must submit to the agency a written notice of confirmation. The notice shall include, but not be limited to, the following information: source of the release, method of discovery and confirmation, estimated quantity of substance released, type of substance released, immediate hazards, release impact, migration pathways, and actions taken.
(c) An owner or operator must submit the appropriate forms listed in §

501111(b) documenting current evidence of financial responsibility to the Administrator within thirty (30) calendar days after identifying a release from an underground storage tank or tank system required to be reported under this section.

§ 50161.1. Posting of Signs.

(a) If the agency determines that posting of signs is appropriate, owners and operators shall post signs around the perimeter of the site informing passersby of the potential hazards. In this instance, "site" means an area where contamination poses an immediate health risk or an area where contaminated media is exposed to the surface.
(b) Signs shall be placed at each entrance to the site and at other locations in sufficient numbers to be seen from any approach to the site.
(c) Signs shall be legible and readable from a distance of at least twenty-five (25) feet. The sign legend shall read, "Caution Petroleum/Hazardous Substance Contamination - Unauthorized Personnel Keep Out". Other sign legends may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the site and that entry onto the site may be dangerous. A contact person and telephone number shall be listed on the sign.
(d) The sign may be removed upon determination by the agency that no further release response action is necessary or that posting of signs is no longer appropriate.

§ 50162. Initial Abatement Measures and Site Assessment.

(a) Unless directed to do otherwise by the agency, owners and operators must perform the following abatement measures:

(1) Continue to remove as much of the regulated substance from the UST system as is necessary to prevent further release to the environment;

(2) Visually inspect the area around the UST or tank system for evidence of any aboveground releases or exposed belowground releases and continue to take necessary

actions to minimize the spread of contamination and to prevent further migration of the released substance into surrounding soils, air, surface water, and groundwater;

(3) Continue to monitor and mitigate any additional fire and safety hazards posed by vapors or free product that have migrated from the UST excavation zone and entered into subsurface structures (such as sewers or basements);

(4) Remedy hazards (such as dust and vapors and the potential for leachate generation) posed by contaminated soils and debris that are excavated or exposed as a result of release confirmation, site investigation, abatement, or release response action activities;

(5) Conduct an assessment of the release by measuring for the presence of a release where contamination is most likely to be present at the UST site, unless the presence and source of the release have been confirmed in accordance with the site assessment required by § 50152(b) or the site assessment required for change-in-service or permanent closure in § 50172(a). In selecting sample types, sample locations, and measurement methods, the owner and operator must consider the nature of the stored substance, the type of backfill and surrounding soil, depth and flow of groundwater and other factors as appropriate for identifying the presence and source of the release;

(6) Investigate to determine the possible presence of free product, and begin free product removal in accordance with § 50164;

(7) Remove or remediate contaminated soil at the site to the extent necessary to prevent the spread of free product; and

(8) If any of the remedies in this section include treatment or disposal of contaminated soils, owners or operators must comply with all applicable local, state, and federal requirements.

(b) Within twenty (20) calendar days after release confirmation, or within another reasonable period of time determined by the agency, owners and

operators must submit a report to the agency summarizing the initial abatement steps taken under subsection (a) and any resulting information or data.

§ 50163. Initial Site Characterization.

(a) Owners and operators must assemble information about the site and the nature of the release, including information gained while confirming the release or completing the initial abatement measures in § 50160 and § 50161. This information must include, but is not necessarily limited to the following:

(1) Data on the nature and estimated quantity of release;

(2) Data from available sources and all previous site investigations concerning the following factors: surrounding populations, water quality, use and approximate locations of wells potentially affected by the release, subsurface soil conditions, locations of subsurface sewers, climatological conditions, and land use;

(3) Results of the site assessment required under § 50162(a)(5); and

(4) Results of the free product investigations required under § 50162(a)(6), to be used by owners and operators to determine whether free product must be recovered under § 50164.

(b) Within forty-five (45) calendar days of release confirmation, or another reasonable period of time determined by the agency, owners and operators must submit the information collected in compliance with subsection (a) to the agency in a manner that demonstrates its applicability and technical adequacy.

§ 50164. Free Product Removal.

(a) At sites where investigations under § 50162(a)(6) indicate the presence of free product, owners and operators must remove free product to the maximum extent practicable as determined by the agency while continuing, as necessary, any actions initiated under §§ 50161 to 50163, or

preparing for actions required under §§ 50165 to 50166. In meeting the requirements of this section, owners and operators must:

(1) Conduct free product removal in a manner that minimizes the spread of contamination into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site, and that properly treats, discharges or disposes of recovery byproducts in compliance with applicable local, state, and federal regulations;

(2) Use abatement of free product migration as a minimum objective for the design of the free product removal system;

(3) Handle any flammable products in a safe and competent manner to prevent fires or explosions; and

(4) Prepare and submit to the agency, within forty-five (45) calendar days after confirming a release, a free product removal report that provides at least the following information:

(A) The name of the person responsible for implementing the free product removal measures;

(B) The estimated quantity, type, and thickness of free product observed or measured in wells, boreholes, and excavations;

(C) The type of free product recovery system used;

(D) Whether any discharge will take place on-site or off-site during the recovery operation and where this discharge will be located;

(E) The type of treatment applied to, and the effluent quality expected from, any discharge;

(F) All actions already performed or currently underway to remove free product, including steps that have been or are being taken to obtain necessary permits for any discharge;

(G) The disposition of the recovered free product; and
(H) Schedule for completion of free product removal.

(b) Owners and operators shall initiate free product removal as soon as practicable but no later than thirty (30) calendar days following confirmation of a release, or sooner if directed by the agency.

§ 50165. Investigation for Soil and Groundwater Cleanup.

(a) In order to determine the full extent and location of soils contaminated by the release and the presence and concentrations of dissolved product contamination in the groundwater and surface water, owners and operators must conduct investigations of the release, the release site, and the surrounding area possibly affected by the release if any of the following conditions exist:

(1) There is evidence that groundwater wells have been affected by the release (e.g., as found during release confirmation or previous release response actions);
(2) Free product is found to need recovery in compliance with § 50164;
(3) There is evidence that contaminated soils may be in contact with groundwater (e.g., as found during conduct of the initial response measures or investigations required under §§ 50160 to 50164; and
(4) The agency requests an investigation, based on the potential effects of contaminated soil or groundwater on nearby surface water and groundwater resources.

(b) Owners and operators must include information collected in accordance with this section with each quarterly report required pursuant to § 50165.2.

§ 50165.1. Notification of Confirmed Release.

(a) Within ninety (90) calendar days following confirmation of a release, the owner and operator shall notify those members of the public directly affected by the release in writing of the release and the proposed response to the release, including a historical account of actions performed since the discovery of the release. Members of the public directly affected by the release shall include:

(1) Persons who own, hold a lease for, or have easements at, any property on which the regulated substance released from the UST was discovered; and

(2) Other persons identified by the director.

(b) The owner and operator shall send a letter to all members of the public directly affected by the release. Model language for the letter shall be provided by the agency and shall include at least the following information:

(1) Name and address of the UST or UST system;

(2) Statement that a release of regulated substance has been confirmed at the UST or UST system;

(3) Name of a contact person at the agency; and

(4) Reference to an attached factsheet pursuant to subsection (c).

(c) The letter to the members of the public directly affected by the release shall include a factsheet which contains the following information:

(1) Name and address of the UST or UST system;

(2) Name and address of the owner and operator of the UST or UST system;

(3) Name, address, and telephone contact of the party performing the cleanup activities;

(4) Date of the confirmed release;

(5) Nature and extent of the confirmed release;

(6) Summary of measures taken to assess the release and extent of contamination; and

(7) Summary of the proposed response to the release.

(d) The factsheet shall be updated on a quarterly basis and sent to all members of the public directly affected by the release. If additional members of the public directly affected by the release are identified in the

course of release response actions, then the owner and operator shall provide those persons with all previous and future letters and factsheets.
(e) The owner and operator shall include in the quarterly report required pursuant to § 50165.2 the following information:

(1) Copy of the letter pursuant to subsection (b);
(2) List of the members of the public directly affected by the release and to whom the letter was sent; and
(3) Copies of the factsheet and amended factsheets pursuant to subsections (c) and (d).

§ 50165.2. Release Response Reporting.

(a) No later than ninety (90) calendar days following the confirmation of a release, owners and operators must submit to the agency a written report in the format specified by the agency. The report must include:

(1) All release response actions taken pursuant to this Article during the first ninety-day (90) period (first quarter); and
(2) A plan for future release response actions to be taken.

(b) Beginning one hundred eighty (180) calendar days following confirmation of a release, owners and operators must submit to the agency written quarterly progress reports and an electronic copy of the written report in a format specified by the agency. The reports must document:

(1) All response actions taken pursuant to this subchapter after the last reported date;
(2) A plan for future release response actions to be taken; and
(3) Information required pursuant to § 50165.1.

(c) Quarterly progress reports are not required if:

(1) Response actions have met the requirements of § 50165.3; and
(2) A final quarterly report has been submitted.

§ 50165.3. Site Cleanup Criteria.

(a) Owners and operators must remediate soil, surface water, and groundwater, and materials contaminated by releases from USTs or tank systems in a manner that is protective of human health and the environment and achieves cleanup as described in subsection (b).
(b) Owners and operators must remediate contaminated soil, groundwater, and surface water at the site to residual concentrations that meet one of the following criteria:

(1) Default Tier 1 Screening Levels as presented in Table 1 in subsection (e); or

(2) Site-specific action levels as approved by the agency.

Owners and operators should consult with the agency on how the standards in this paragraph can be met. Site-specific action levels must take into account the following factors:

(A) For systemic toxicants, acceptable levels shall represent concentration levels to which the human population may be exposed without adverse effect during a lifetime or part of a lifetime, and incorporating an adequate margin of safety;

(B) For known or suspected carcinogens, acceptable levels are generally concentration levels in soil, groundwater and vapor that represent an excess upper bound lifetime cancer risk to an individual of between 10^{-4} and 10^{-6} using information on the relationship between dose and response. The 10^{-6} excess risk level shall be used as the point of departure for determining acceptable levels for alternatives when chemical-specific state or federal requirements are not available or are not sufficiently protective because of the presence of multiple contaminants at the site or multiple pathways of exposure;

(C) Impacts to ecological receptors, including but not limited to plants and animals; and

(D) Other applicable requirements, including but not

limited to nuisance concerns for odor and taste, if applicable.

(c) The agency may require the owners and operators to modify cleanup activities being performed at a site if the agency determines that the activities are not being carried out in accordance with this subchapter, or are not achieving cleanup levels that are protective of human health and the environment. The agency may impose modifications to cleanup activities by written notice to the owners and operators, and the owners and operators must implement necessary changes to the cleanup activities in response to the agency's notice by a time schedule established by the agency.

(d) A schedule for estimated completion of site cleanup shall be included in each fourth quarter report required pursuant to § 50165.2(b).

(e) The figure labeled "Table 1. Tier 1 Screening Levels of Soil and Groundwater" is made a part of this subsection.

Table 1. Tier 1 Screening Levels for Soil and Groundwater

Contaminant	DRINKING WATER SOURCE THREATENED				DRINKING WATER SOURCE NOT THREATENED			
	Groundwater (ug/l)	Basis[1]	Soil (mg/kg)	Basis[2]	Groundwater (ug/l)	Basis[3]	Soil (mg/kg)	Basis[2]
Acenaphthene	15	-	120	L/VI	15	-	40	L/VI
Benzene	5.0	DWP	0.30	L	71	CAT	0.77	VI
Benzo(a)pyrene	0.05	-	3.6	DE	0.05	-	3.6	DE
Dichloroethylene, cis 1,2-	70	DWP	0.36	VI	620	CAT	0.36	VI
Dichloroethylene, trans 1,2-	100	DWP	3.6	VI	560	CAT	3.6	VI
Ethylbenzene	7.3	CAT	0.90	L	7.3	CAT	0.90	L
Fluoranthene	0.05	-	87	L	0.05	-	87	L
Lead	2.5	CAT	200	DE	2.5	CAT	200	DE
Methyl Tert Butyl Ether (MTBE)	5.0	DWS	0.028	L	730	CAT	2.3	VI
Naphthalene	12	CAT	3.1	L	12	CAT	3.1	L
Polychlorinated Biphenyls (PCBs)	0.014	-	1.2	DE	0;014	-	1.2	DE
Tetrachloethylene (PCE)	5.0	DWP	0.098	VI	53	CAT	0.098	VI
Toluene	9.8	CAT	0.78	L	9.8	CAT	0.78	L
TPH-gasolines	300	DWP	100	GC	500	CAT	100	GC
TPH-middle distillates	400	DWP	220	DE	640	CAT	220	DE
TPH-residual fuels	500	DWS	500	GC	640	CAT	500	GC
Trichloroethylene	5.0	DWP	0.089	VI	47	CAT	0.089	VI
Vinyl Chloride	2.0	DWP	0.036	VI	18	VI	0.036	VI
Xylenes	13	CAT	1.4	L	13	CAT	1.4	L

Notes to Table 1.

1. Drinking water screening levels are the lowest of screening levels for: drinking water primary maximum contaminant levels based on toxicity ("DWP"), drinking water secondary maximum contaminant levels based on taste and odor concerns ("DWS"), vapor intrusion ("VI"), and chronic aquatic toxicity ("CAT").

2. Soil screening levels are the lowest of screening levels for: direct exposure ("DE"), vapor intrusion ("VI"), leaching ("L"), and gross contamination ("GC").

3. Non-drinking water screening levels are the lowest of screening levels vapor intrusion ("VI"), chronic aquatic toxicity ("CAT"), and gross contamination ("GC").

§ 50166. Corrective Action.

(a) The agency may require that the owner and operator submit a written corrective action plan for responding to a release, if one or more of the following minimum threshold criteria are met:

(1) Actual or probable release to groundwater which is a drinking water supply;
(2) Actual or probable release to surface water which is a drinking water supply;
(3) Actual or probable release to air that poses a threat to public health;
(4) Actual or probable release to and extensive contamination of soil that poses a direct contact hazard due to uncontrolled access;
(5) Actual or probable existence of uncontrolled regulated substances that pose a direct contact hazard due to uncontrolled access;
(6) Actual or probable adverse impact to natural resources;
(7) Actual or probable imminent danger of fire or explosion; or

(8) A determination by the Administrator that a release poses a substantial endangerment to public health or welfare, the environment, or natural resources.

(b) If a plan is required, owners and operators must submit the plan to the agency in a format established by the agency within thirty (30) calendar days of the agency's request, unless an extension of time is granted by the agency.

(c) Corrective action plans which are required to be submitted to the agency shall be subject to the review and discretionary approval of the agency in accordance with the procedures set forth in this section. Owners and operators are responsible for submitting a corrective action plan that provides for adequate protection of human health and the environment as determined by the agency and must make necessary modifications to the plan when directed to do so by the agency.

(d) The agency will approve the corrective action plan only after ensuring that implementation of the plan will adequately protect human health, safety, and the environment. In making this determination, the agency will consider the following factors as appropriate:

(1) Physical and chemical characteristics of the regulated substance, including its toxicity, persistence, and potential for migration;

(2) Hydrogeologic characteristics of the facility and the surrounding area;

(3) Proximity, quality, and current and future uses of nearby surface water and groundwater;

(4) Potential effects of residual contamination on nearby surface water and groundwater;

(5) An exposure assessment; and

(6) All other information assembled in compliance with this subchapter.

(e) The public participation procedures set forth in § 50167 apply to all corrective action plans submitted under this section.

(f) Upon approval of a corrective action plan, owners and operators must implement the plan, including any modifications to the plan made by the agency. Owners and operators must monitor, evaluate, and report

quarterly to the agency the results of implementing the corrective action plan pursuant to this section and § 50165.2.
(g) Owners and operators who have been requested by the agency to submit a corrective action plan are encouraged to begin cleanup of contaminated soils, surface water, groundwater, and materials before the plan is approved by the agency provided that they:

(1) Notify the agency of their intention to begin cleanup;
(2) Ensure that cleanup measures undertaken are consistent with the cleanup actions required pursuant to § 50165.3;
(3) Comply with any conditions imposed by the agency, including halting cleanup or mitigating adverse consequences from cleanup activities; and
(4) Incorporate self-initiated cleanup measures in the corrective action plan that is submitted to the agency for approval.

§ 50167. Public Participation for Corrective Action Plans.

(a) The agency shall conduct public participation activities in accordance with subsections (c) through (h) when:

(1) A corrective action plan required pursuant to § 50166(a) has been submitted and the agency has made a tentative decision concerning the proposed plan; or
(2) Implementation of any previously approved corrective action plan has not achieved the cleanup levels established in the plan and termination of the plan is under consideration by the agency.

(b) The agency will provide notice to the public of the release and the applicable response as required in subsections (c) and (d). Costs for all public participation activities described in subsections (c) through (h) shall be borne by the owner and operator of the UST or UST system, including the costs of making copies of materials to the public under subsection (f).
(c) Notice to members of the public directly affected by the release, as defined in § 50165.1(a), shall be given in the form of a letter from the agency and shall include at least the following information:

(1) Name and address of the UST or UST system;

(2) Name and address of the owner and operator of the UST or UST system;
(3) Summary of the release information and the proposed or previously approved corrective action plan;
(4) The agency's tentative decision concerning the proposed corrective action plan or concerning the termination of the previously approved corrective action plan;
(5) Announcement that an informational meeting will be held in accordance with subsection (g);
(6) Request for comments on the corrective action plan and the agency's tentative decision; and
(7) Availability of information on the release and the agency's tentative decision.

(d) Notice to the general public shall be given in the form of a notice in a local newspaper and shall include at least the information required in subsection (c)(1) to (7).

(e) Comments shall be received by the agency no later than thirty (30) calendar days after the notice provided in subsections (c) and (d) or after the end of the public meeting held pursuant to subsection (g), if any, whichever occurs later.

(f) Information on the release, the proposed corrective action plan, and the agency's tentative decision on the plan shall be made available to the public for inspection upon request.

(g) Before approving a corrective action plan, the agency may conduct a public meeting to provide information and receive comments on the proposed plan. A meeting will be held if there is sufficient public interest. Public interest shall be indicated by written request to the agency.

(h) At the Administrator's discretion, a notice of final decision may be issued.

§ 50168 to § 50169. [Reserved.]

ARTICLE 7
OUT-OF-SERVICE UST SYSTEMS AND CLOSURE

§ 50170. Temporary Closure
§ 50171. Permanent Closure and Change-in-Service
§ 50172. Assessing the Site at Closure or Change-in-Service
§ 50173. Applicability to Previously Closed UST Systems
§ 50174. Closure Records
§ 50175. Closure--Code of Practice
§ 50176 - § 50189. [Reserved.]

§ 50170. Temporary Closure.

(a) When an UST system is temporarily closed, owners and operators must continue operation and maintenance of corrosion protection in accordance with § 50131, and applicable release detection in accordance with Article 4. Articles 5 and 6 must be complied with if a release is suspected or confirmed. Spill and overfill operation and maintenance testing and inspections in Article 3 are not required during temporary closure. If the UST system is empty, release detection and release detection operation and maintenance testing and inspections in Articles 3 and 4 are not required. The UST system is empty when all materials have been removed using commonly employed practices so that no more than 2.5 centimeters (one inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remain in the system.
(b) When an UST system is temporarily closed for ninety (90) calendar days or more, owners and operators must also comply with the following requirements:

(1) Leave vent lines open and functioning; and
(2) Cap and secure all other lines, pumps, manways, and ancillary equipment.

(c) When an UST system is temporarily closed for more than twelve (12) months, owners and operators must permanently close the UST system if it does not meet the applicable design, construction, and installation requirements in Article 2, except that the spill and overfill equipment requirements do not have to be met. Owners and operators must

permanently close the substandard UST systems at the end of this twelve-month period in accordance with §§ 50171 to 50174, unless the agency provides an extension of the twelve-month temporary closure period. Owners and operators must complete a site assessment in accordance with § 50172 before such an extension can be applied for.

§ 50171. Permanent Closure and Change-in-Service.

(a) At least thirty (30) calendar days before beginning either permanent closure or a change-in-service of an UST or tank system under subsections (c) and (d), owners and operators must notify the agency in writing of their intent to permanently close or make the change-in-service, unless such action is in response to a confirmed release. The required assessment of the excavation zone under § 50172 must be performed after notifying the agency but before completion of the permanent closure or change-in-service.

(b) At least seven (7) calendar days before excavation work for a permanent closure or change-in-service, owners or operators must notify the agency of the exact date that the work will occur.

(c) To permanently close an UST or tank system, owners and operators must:

(1) Empty and clean the UST and tank system by removing all liquids and accumulated sludge;

(2) Remove the UST or tank system from the ground, fill the UST or tank system with an inert solid material, or close the tank in place in a manner approved by the agency; and

(3) Conduct a site assessment in accordance with § 50172.

(d) Continued use of an UST system to store a non-regulated substance is considered a change-in-service. Before a change-in-service, owners and operators must:

(1) Empty and clean the UST and tank system by removing all liquids and accumulated sludge; and

(2) Conduct a site assessment in accordance with § 50172.

(e) Within thirty (30) calendar days of completing a permanent closure or change-in-service, owners and operators must submit a notification to the

agency indicating completion of the closure or change-in-service.

§ 50172. Assessing the Site at Closure or Change-in-Service.

(a) Before permanent closure or a change-in-service is completed, owners and operators must measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the method of closure, the nature of the stored substance, the types of backfill and surrounding soil, the depth and flow of groundwater, and other factors appropriate for identifying the presence of a release.
(b) If contaminated soils, contaminated groundwater, or free product as a liquid or vapor is discovered under subsection (a), or by any other manner, owners and operators must begin release response action in accordance with Article 6.

§ 50173. Applicability to Previously Closed UST Systems.

(a) When directed by the agency, the owner and operator of an UST system permanently closed before December 22, 1988 must assess the excavation zone and close the UST system in accordance with this Article if releases from the UST may, in the judgment of the agency, pose a current or potential threat to human health and the environment.
(b) When directed by the agency, the owner and operator of an UST system with field-constructed tanks or an airport hydrant fuel distribution system permanently closed before October 13, 2015, must assess the excavation zone and close the UST system in accordance with this Article if releases from the UST may, in the judgment of the agency, pose a current or potential threat to human health and the environment.

§ 50174. Closure Records.

Owners and operators must maintain records in accordance with § 50134 that are capable of demonstrating compliance with closure requirements

under this Article. The results of the excavation zone assessment required in § 50172 must be maintained for at least three (3) years after completion of permanent closure or change-in-service in one of the following ways:

(1) By the owners and operators who took the UST system out of service;
(2) By the current owners and operators of the UST system site; or
(3) By mailing these records to the agency if they cannot be maintained at the closed facility.

§ 50175. Closure--Code of Practice.

The following current cleaning and closure procedures may be used to comply with § 50171:

(1) American Petroleum Institute Recommended Practice RP 1604, "Closure of Underground Petroleum Storage Tanks";
(2) American Petroleum Institute Standard 2015, "Safe Entry and Cleaning of Petroleum Storage Tanks, Planning and Managing Tank Entry From Decommissioning Through Recommissioning";
(3) American Petroleum Institute Recommended Practice 2016, "Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks";
(4) American Petroleum Institute Recommended Practice RP 1631, "Interior Lining and Periodic Inspection of Underground Storage Tanks", may be used as guidance for compliance with this section;
(5) National Fire Protection Association Standard 326, "Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair"; and
(6) National Institute for Occupational Safety and Health Publication 80–106, "Criteria for a Recommended Standard...Working in Confined Space", may be used as guidance for conducting safe closure procedures at some

tanks containing hazardous substances.

§§ 50176 to 50189. [Reserved.]

ARTICLE 8
FINANCIAL RESPONSIBILITY

§ 50190. Applicability
§ 50191. [Reserved]
§ 50192. Definition of Terms
§ 50193. Amount and Scope of Required Financial Responsibility
§ 50194. Allowable Mechanism and Combinations of Mechanisms
§ 50195. Financial Test of Self-Insurance
§ 50196. Guarantee
§ 50197. Insurance and Risk Retention Group Coverage
§ 50198. Surety Bond
§ 50199. Letter of Credit
§ 501100 to § 501101. [Reserved]
§ 501102. Trust Fund
§ 501103. Standby Trust Fund
§ 501104. Local Government Bond Rating Test
§ 501105. Local Government Financial Test
§ 501106. Local Government Guarantee
§ 501107. Local Government Fund
§ 501108. Substitution of Financial Assurance Mechanisms by Owner or Operator
§ 501109. Cancellation or Non-renewal by a Provider of Financial Assurance
§ 501110. Reporting by Owner or Operator
§ 501111. Record Keeping
§ 501112. Drawing of Financial Assurance Mechanisms
§ 501113. Release from the Requirements
§ 501114. Bankruptcy or Other Incapacity of Owner or Operator or Provider of Financial Assurance

§ 501115. Replenishment of Guarantee, Letters of Credit, or Surety Bond
§ 501116. to § 501199 [Reserved]

§ 50190. Applicability.

(a) This Article applies to owners and operators of all petroleum underground storage tank (UST) systems except as otherwise provided in this section.
(b) State and federal government entities whose debts and liabilities are the debts and liabilities of a state or the United States are exempt from the requirements of this Article.
(c) The requirements of this Article do not apply to owners and operators of any UST system described in § 50110(b), (c)(1), (c)(3), or (c)(4).
(d) If the owner and operator of a petroleum underground storage tank system are separate persons, only one person is required to demonstrate financial responsibility; however, both parties are liable in the event of noncompliance.

§ 50191. [Reserved.]

§ 50192. Definition of Terms.

When used in this Article, the following terms have the meanings given below:

"Accidental release" means any sudden or nonsudden release of petroleum arising from operating an underground storage tank system that results in a need for release response action and/or compensation for bodily injury or property damage neither expected nor intended by the tank system owner or operator.

"Bodily injury" shall have the meaning given to this term by applicable state law; however, this term shall not include those liabilities which, consistent with standard insurance industry practices, are excluded from coverage in liability insurance policies for bodily injury.

"Chief financial officer" in the case of local government owners and

operators, means the individual with the overall authority and responsibility for the collection, disbursement, and use of funds by the local government.

"Controlling interest" means direct ownership of at least fifty percent of the voting stock of another entity.

"Financial reporting year" means the latest consecutive twelve-month period for which any of the following reports used to support a financial test is prepared:

(1) A 10-K report submitted to the U.S. Securities and Exchange Commission;

(2) An annual report of tangible net worth submitted to Dun and Bradstreet; or

(3) Annual reports submitted to the Energy Information Administration or the Rural Utilities Service.

"Financial reporting year" may thus comprise a fiscal or a calendar year period.

"Legal defense cost" is any expense that an owner or operator or provider of financial assurance incurs in defending against claims or actions brought:

(1) By EPA or the state to require release response action or to recover the costs of release response action;

(2) By or on behalf of a third party for bodily injury or property damage caused by an accidental release; or

(3) By any person to enforce the terms of a financial assurance mechanism.

"Occurrence" means an accident, including continuous or repeated exposure to conditions, which results in a release from an underground storage tank system. This definition is intended to assist in the understanding of these regulations and is not intended either to limit the meaning of "occurrence" in a way that conflicts with standard insurance usage or to prevent the use of other standard insurance terms in place of "occurrence".

"Owner or operator", when the owner or operator is separate parties, refers to the party that is obtaining or has obtained financial assurances.

"Petroleum marketing facilities" include all facilities at which petroleum is produced or refined and all facilities from which petroleum is sold or transferred to other petroleum marketers or to the public.

"Property damage" shall have the meaning given this term by applicable state law. This term shall not include those liabilities which, consistent with standard insurance industry practices, are excluded from coverage in liability insurance policies for property damage. However, such exclusions for property damage shall not include response actions associated with releases from USTs or tank systems which are covered by the policy.

"Provider of financial assurance" means an entity that provides financial assurance to an owner or operator of an underground storage tank system through one of the financial mechanisms listed in §§ 50195 through 501107, including a guarantor, insurer, risk retention group, surety, issuer of a letter of credit, issuer of a state-required mechanism, or a state.

"Substantial business relationship" means the extent of a business relationship necessary under applicable state law to make a guarantee contract issued incident to that relationship valid and enforceable. A guarantee contract is issued "incident to that relationship" if it arises from and depends on existing economic transactions between the guarantor and the owner or operator.

"Substantial governmental relationship" means the extent of a governmental relationship necessary under applicable state law to make an added guarantee contract issued incident to that relationship valid and enforceable. A guarantee contract is issued "incident to that relationship" if it arises from a clear commonality of interest in the event of an UST or tank system release such as coterminous boundaries, overlapping constituencies, common groundwater aquifer, or other relationship other than monetary compensation that provides a motivation for the guarantor to provide a guarantee.

"Tangible net worth" means the tangible assets that remain after deducting liabilities; such assets do not include intangibles such as goodwill and rights to patents or royalties. For purposes of this definition, "assets" means all existing and all probable future economic benefits

obtained or controlled by a particular entity as a result of past transactions.

"Termination" under § 50197(b)(1) and (2) means only those changes that could result in a gap in coverage as where the insured has not obtained substitute coverage or has obtained substitute coverage with a different retroactive date than the retroactive date of the original policy.

§ 50193. Amount and Scope of Required Financial Responsibility.

(a) Owners or operators of petroleum USTs or tank systems must demonstrate financial responsibility for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum USTs or tank systems in at least the following per-occurrence amounts:

(1) For owners or operators of petroleum USTs or tank systems that are located at petroleum marketing facilities, or that handle an average of more than ten thousand gallons of petroleum per month based on annual throughput for the previous calendar year: $1,000,000; and

(2) For all other owners or operators of petroleum USTs or tank systems: $500,000.

(b) Owners or operators of petroleum USTs or tank systems must demonstrate financial responsibility for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum USTs or tank systems in at least the following annual aggregate amounts:

(1) For owners or operators of one to one hundred petroleum USTs: $1,000,000; and

(2) For owners or operators of one hundred one or more petroleum USTs: $2,000,000.

(c) For the purposes of subsections (b) and (f) only, "a petroleum underground storage tank" or "a petroleum UST" means a single containment unit and does not mean combinations of single containment units.

(d) Except as provided in subsection (e), if the owner or

operator uses separate mechanisms or separate combinations of mechanisms to demonstrate financial responsibility for:

(1) Taking corrective action;

(2) Compensating third parties for bodily injury and property damage caused by sudden accidental releases; or

(3) Compensating third parties for bodily injury and property damage caused by nonsudden accidental releases, the amount of assurance provided by each mechanism or combination of mechanisms must be in the full amount specified in subsections (a) and (b).

(e) If an owner or operator uses separate mechanisms or separate combinations of mechanisms to demonstrate financial responsibility for different petroleum underground storage tanks, the annual aggregate required shall be based on the number of tanks covered by each such separate mechanism or combination of mechanisms.

(f) Owners or operators shall review the amount of aggregate assurance provided whenever additional petroleum underground storage tanks are acquired or installed. If the number of petroleum underground storage tanks for which assurance must be provided exceeds one hundred, the owner or operator shall demonstrate financial responsibility in the amount of at least $2,000,000 of annual aggregate assurance by the anniversary of the date on which the mechanism demonstrating financial responsibility became effective. If assurance is being demonstrated by a combination of mechanisms, the owner or operator shall demonstrate financial responsibility in the amount of at least $2,000,000 of annual aggregate assurance by the first-occurring effective date anniversary of any one of the mechanisms combined (other than a financial test or guarantee) to provide assurance.

(g) The amounts of assurance required under this section exclude legal defense costs.

(h) The required per-occurrence and annual aggregate coverage amounts do not in any way limit the liability of the owner or operator.

§ 50194. Allowable Mechanism and Combinations of Mechanisms.

(a) Subject to the limitations of subsections (b) and (c):

(1) An owner or operator, including a local government owner or operator, may use any one or combination of the mechanisms listed in §§ 50195 through 501103 to demonstrate financial responsibility under this Article for one or more USTs or tank systems; and

(2) A local government owner or operator may use any one or combination of the mechanisms listed in §§ 501104 through 501107 to demonstrate financial responsibility under this subchapter for one or more USTs or tank systems.

(b) An owner or operator may use a guarantee under § 50196 or surety bond under § 50198 to establish financial responsibility only if the State Attorney General has submitted a written statement to the administrator that a guarantee or surety bond executed as described in this section is a legally valid and enforceable obligation in the State.

(c) An owner or operator may use self-insurance in combination with a guarantee only if, for the purpose of meeting the requirements of the financial test under this rule, the financial statements of the owner or operator are not consolidated with the financial statements of the guarantor.

§ 50195. Financial Test of Self-Insurance.

(a) An owner or operator, and/or guarantor, may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by passing a financial test as specified in this section. To pass the financial test of self-insurance, the owner or operator, and/or guarantor, must meet the criteria of subsection (b) or (c) based on year-end financial statements for the latest completed fiscal year.

(b) (1) The owner or operator, and/or guarantor, must have a tangible net worth of at least ten times:

(A) The total of the applicable aggregate amount required by § 50193, Guam Administrative Rules and Regulations, based on the number of underground storage tanks for which a financial test is used to

demonstrate financial responsibility to the agency, to EPA, or to a state implementing agency under a state program approved by EPA under 40 C.F.R. part 281;

(B) The sum of the RCRA subtitle C corrective action cost estimates, the current closure and post-closure care cost estimates, and amount of liability coverage for which a financial test is used to demonstrate financial responsibility to demonstrate financial responsibility to the agency under 40 C.F.R. sections 261.143 and 261.147, as incorporated and amended in section 11-261.1-1, 40 C.F.R. sections 264.101, 264.143, 264.145, and 264.147, as incorporated and amended in section 11-264.1-1, and 40 C.F.R. sections 265.143, 265.145, and 265.147, as incorporated and amended in section 11-265.1-1, to EPA under 40 C.F.R. sections 261.143, 261.147, 264.101, 264.143, 264.145, 264.147, 265.143, 265.145, and 265.147, or to a state implementing agency under a state program authorized by EPA under 40 C.F.R. part 271; and

(C) The sum of current plugging and abandonment cost estimates for which a financial test is used to demonstrate financial responsibility to EPA under 40 C.F.R. section 144.63 or to a state implementing agency under a state program authorized by EPA under 40 C.F.R. part 145.

(2) The owner or operator, and/or guarantor, must have a tangible net worth of at least $10,000,000.

(3) The owner or operator, and/or guarantor, must have a letter signed by the chief financial officer worded as specified in subsection (d).

(4) The owner or operator, and/or guarantor, must either:

(A) File financial statements annually with the U.S. Securities and Exchange Commission, the Energy Information Administration, or the Rural Utilities Service; or

(B) Report annually the firm's tangible net worth to Dun and Bradstreet, and Dun and Bradstreet must have assigned the firm a financial strength rating of 4A or 5A.

(5) The firm's year-end financial statements, if independently audited, cannot include an adverse auditor's opinion, a disclaimer of opinion, or a "going concern" qualification.

(c) (1) The owner or operator, and/or guarantor, must meet the financial test requirements of 40 C.F.R. section 264.147(f)(1), substituting the appropriate amounts specified in § 50193(b)(1) and (2), Guam Administrative Rules and Regulations for the "amount of liability coverage" each time specified in that section.

(2) The fiscal year-end financial statements of the owner or operator, and/or guarantor, must be examined by an independent certified public accountant and be accompanied by the accountant's report of the examination.

(3) The firm's year-end financial statements cannot include an adverse auditor's opinion, a disclaimer of opinion, or a "going concern" qualification.

(4) The owner or operator, and/or guarantor, must have a letter signed by the chief financial officer, worded as specified in subsection (d).

(5) If the financial statements of the owner or operator, and/or guarantor, are not submitted annually to the U.S. Securities and Exchange Commission, the Energy Information Administration or the Rural Utilities Service, the owner or operator, and/or guarantor, must obtain a special report by an independent certified public accountant stating that:

(A) The accountant has compared the data that the letter from the chief financial officer specifies as having been derived from the latest year-end financial statements of the owner or operator, and/or guarantor, with the amounts in such financial statements; and

(B) In connection with that comparison, no matters came

to the accountant's attention, which caused the accountant to believe that the specified data should be adjusted.

(d) To demonstrate that it meets the financial test under subsection (b) or (c), the chief financial officer of the owner or operator, or guarantor, must sign, within one hundred twenty days of the close of each financial reporting year, as defined by the twelve-month period for which financial statements used to support the financial test are prepared, a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of the owner or operator, or guarantor]. This letter is in support of the use of [insert: "the financial test of self-insurance" or "guarantee" or both] to demonstrate financial responsibility for [insert: "taking corrective action" or "compensating third parties for bodily injury and property damage" or both] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s).

Underground storage tanks at the following facilities are assured by this financial test, or a corresponding financial test under EPA or another authorized state program, by this [insert: "owner or operator" or "guarantor"]:

[List for each facility: the name and address of the facility where tanks assured by this financial test are located, and whether tanks are assured by this financial test or a corresponding financial test under EPA or under a state program approved under 40 C.F.R. part 281. If separate mechanisms or combinations of mechanisms are being used to assure any of the tanks at this facility, list each tank assured by this financial test by the tank identification number provided in the notification submitted pursuant to 40 C.F.R. section 280.22, or in the permit applications submitted under §§ 501324 and

501326, Guam Administrative Rules and Regulations

A [insert: "financial test" and/or "guarantee"] is also used by this [insert: "owner or operator" or "guarantor"] to demonstrate evidence of financial responsibility in the following amounts under other EPA regulations or state programs authorized by EPA under 40 C.F.R. parts 271 and 145:

	Amount
EPA Regulations:	
Closure (§§261.143, 264.143, and 265.143)	$
Post-Closure Care (§§264.145 and 265.145)	
Liability Coverage (§§261.147, 264.147, and 265.147)	$
Corrective Action (§264.101(b))	
Plugging and Abandonment (§144.63)	$
	$
	$
Authorized State Programs:	
Closure	$
Post-Closure Care	$
Liability Coverage	$
Corrective Action	$
Plugging and Abandonment	$
TOTAL	$

This [insert: "owner or operator" or "guarantor"] has not received an adverse opinion, a disclaimer of opinion, or a "going concern" qualification from an independent auditor on his or her financial statements for the latest completed fiscal year.

[Fill in the information for Alternative I if the criteria of subsection (b) are being used to demonstrate compliance with the financial test requirements. Fill in the information for Alternative II if the criteria of

subsection (c) are being used to demonstrate compliance with the financial test requirements.]

ALTERNATIVE I

	Amount		
1. Amount of annual UST aggregate coverage being assured by a financial test, or guarantee or both	$		
2. Amount of corrective action, closure and post-closure care costs, liability coverage, and plugging and abandonment costs covered by a financial test, or guarantee or both	$		
3. Sum of lines 1 and 2	$		
4. Total tangible assets	$		
5. Total liabilities [if any of the amount reported on line 3 is included in total liabilities, you may deduct that amount from this line and add that amount to line 6]	$		
6. Tangible net worth [subtract line 5 from line 4]	$		
7. Is line 6 at least $10,000,000?		Yes	No
8. Is line 6 at least ten times line 3?		Yes	No
9. Have financial statements for the latest fiscal year been filed with the U.S. Securities and Exchange Commission?		Yes	No
10. Have financial statements for the latest fiscal year been filed with the federal Energy Information Administration?		Yes	No
11. Have financial statements for the latest fiscal year been filed with the federal Rural Utilities Service?		Yes	No
12. Has financial information been provided to Dun and Bradstreet, and has Dun and Bradstreet provided a financial strength rating of 4A or 5A? [Answer "Yes" only if both criteria have been met.]		Yes	No

ALTERNATIVE II

	Amount	
1. Amount of annual UST aggregate coverage being assured by a financial test, or guarantee or both	$	
2. Amount of corrective action, closure and post-closure care costs, liability coverage, and plugging and abandonment costs covered by a financial test, or guarantee or both	$	
3. Sum of lines 1 and 2	$	
4. Total tangible assets	$	
5. Total liabilities [if any of the amount reported on line 3 is included in total liabilities, you may deduct that amount from this line and add that amount to line 6]	$	
6. Tangible net worth [subtract line 5 from line 4]	$	
7. Total assets in the U.S. [required only if less than ninety per cent of assets are located in the U.S.]	$	
8. Is line 6 at least $10,000,000?	Yes	No
9. Is line 6 at least six times line 3?	Yes	No
10. Are at least ninety per cent of assets located in the U.S.? [If "No," complete line 11]	Yes	No
11. Is line 7 at least six times line 3?	Yes	No
[Fill in either lines 12-15 or lines 16-18:]		
12. Current assets	$	
13. Current liabilities	$	
14. Net working capital [subtract line 13 from line 12]	$	
15. Is line 14 at least six times line 3?	Yes	No
16. Current bond rating of most recent bond issue		

17. Name of rating service

18. Date of maturity of bond

19. Have financial statements for the latest fiscal year been filed with the U.S. Securities and Exchange Commission, the federal Energy Information Administration, or the federal Rural Utilities Service? Yes No

[If "No," please attach a report from an independent certified public accountant certifying that there are no material differences between the data as reported in lines 4-18 above and the financial statements for the latest fiscal year.]

[For both Alternative II and I complete the certification with this statement.]

I hereby certify that the wording of this letter is identical to the wording specified in § 50195(d), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Signature]
[Name]
[Title]
[Date]

(e) If an owner or operator using the test to provide financial assurance finds that he or she no longer meets the requirements of the financial test based on the year-end financial statements, the owner or operator must obtain alternative coverage within one hundred fifty days of the end of the year for which financial statements have been prepared.

(f) The Administrator may require reports of financial condition at any time from the owner or operator, and/or guarantor. If the director finds, on the basis of such reports or other information, that the owner or operator, and/or guarantor, no longer meets the financial test requirements of subsections (b) or (c) and (d), the owner or operator must

obtain alternate coverage within thirty days after notification of such a finding.

(g) If the owner or operator fails to obtain alternate assurance within one hundred fifty days of finding that he or she no longer meets the requirements of the financial test based on the year-end financial statements, or within thirty days of notification by the Administrator that he or she no longer meets the requirements of the financial test, the owner or operator must notify the director of such failure within ten days.

§ 50196. Guarantee.

(a) An owner or operator may satisfy the requirements of § 50193 by obtaining a guarantee that conforms to the requirements of this section. The guarantor must be:

(1) A firm that:

(A) Possesses a controlling interest in the owner or operator;

(B) Possesses a controlling interest in a firm described under subparagraph (A); or

(C) Is controlled through stock ownership by a common parent firm that possesses a controlling interest in the owner or operator; or

(2) A firm engaged in a substantial business relationship with the owner or operator and issuing the guarantee as an act incident to that business relationship.

(b) Within one hundred twenty days of the close of each financial reporting year the guarantor must demonstrate that it meets the financial test criteria of § 50195, Guam Administrative Rules and Regulations based on year-end financial statements for the latest completed financial reporting year by completing the letter from the chief financial officer described in § 50195(d), Guam Administrative Rules and Regulations and must deliver the letter to the owner or operator. If the guarantor fails to meet the requirements of the financial test at the end of any financial reporting year, within one hundred twenty days of the end of that financial reporting year the guarantor shall send by certified mail,

before cancellation or nonrenewal of the guarantee, notice to the owner or operator. If the Administrator notifies the guarantor that it no longer meets the requirements of the financial test of § 50195(b) or (c) and (d), Guam Administrative Rules and Regulations, the guarantor must notify the owner or operator within ten days of receiving such notification from the Administrator. In both cases, the guarantee will terminate no less than one hundred twenty days after the date the owner or operator receives the notification, as evidenced by the return receipt. The owner or operator must obtain alternative coverage as specified in § 501114(e), Guam Administrative Rules and Regulations.

(c) The guarantee must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

GUARANTEE

Guarantee made this [date] by [name of guaranteeing entity], a business entity organized under the laws of the State of [name of state], herein referred to as guarantor, to Guam Environmental Protection Agency and to any and all third parties, and obligees, on behalf of [owner or operator] of [business address].

Recitals.

(1) Guarantor meets or exceeds the financial test criteria of § 50195(b) or (c) and (d), Guam Administrative Rules and Regulations , and agrees to comply with the requirements for guarantors as specified in § 50196(b), Guam Administrative Rules and Regulations.

(2) [Owner or operator] owns or operates the following underground storage tank(s) covered by this guarantee: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. section 280.22, or in the permit

applications submitted under §§ 501324 and 501326 and the name and address of the facility.] This guarantee satisfies Article 8 of Guam Administrative Rules and Regulations, requirements for assuring funding for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the above-identified underground storage tank(s) in the amount of [insert dollar amount] per occurrence and [insert dollar amount] annual aggregate.

(3) [Insert appropriate phrase: "On behalf of our subsidiary" (if guarantor is corporate parent of the owner or operator); "On behalf of our affiliate" (if guarantor is a related firm of the owner or operator); or "Incident to our business relationship with" (if guarantor is providing the guarantee as an incident to a substantial business relationship with owner or operator)] [owner or operator], guarantor guarantees to Guam Environmental Protection Agency and to any and all third parties that:

In the event that [owner or operator] fails to provide alternative coverage within sixty days after receipt of a notice of cancellation of this guarantee and the Administrator of Guam Environmental Protection Agency has determined or suspects that a release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon instructions from the Administrator of Guam Environmental Protection Agency, shall fund a standby trust fund in accordance with the provisions of § 501112 Guam Administrative Rules and Regulations, in an amount not to exceed the coverage limits specified above.

In the event that the Administrator of Guam Environmental Protection Agency determines that [owner or operator] has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with Article 6 Guam Administrative Rules and Regulations, the guarantor, upon written instructions from the Administrator of Guam Environmental Protection Agency, shall fund a standby trust in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, in an amount not to

exceed the coverage limits specified above.

If [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by ["sudden" and/or "nonsudden"] accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written instructions from the Administrator of Guam Environmental Protection Agency, shall fund a standby trust in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, to satisfy such judgment(s), award(s), or settlement agreement(s) up to the limits of coverage specified above.

(4) Guarantor agrees that if, at the end of any fiscal year before cancellation of this guarantee, the guarantor fails to meet the financial test criteria of § 50195(b) or (c) and (d), Guam Administrative Rules and Regulations, guarantor shall send within one hundred twenty days of such failure, by certified mail, notice to [owner or operator]. The guarantee will terminate one hundred twenty days from the date of receipt of the notice by [owner or operator], as evidenced by the return receipt.

(5) Guarantor agrees to notify [owner or operator] by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within ten days after commencement of the proceeding.

(6) Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of [owner or operator] pursuant to Title 22, Guam Administrative Rules and Regulations, Chapter 50.

(7) Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] must comply with the applicable financial responsibility requirements of Article 8, Guam Administrative Rules and Regulations, for the above-identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to [owner or operator], such cancellation to become effective no earlier than one hundred twenty days after receipt of such notice by [owner or operator],

as evidenced by the return receipt.

(8) The guarantor's obligation does not apply to any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily damage or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

(9) Guarantor expressly waives notice of acceptance of this guarantee by the Guam Environmental Protection Agency, by any or all third parties, or by [owner or operator].

I hereby certify that the wording of this guarantee is identical to the wording specified in § 50196(c) Guam Administrative Rules and Regulations, as such regulations were constituted on the effective date shown immediately below.

Effective date:
[Name of guarantor]
[Authorized signature for guarantor]
[Name of person signing]
[Title of person signing]

Signature of witness or notary:

(d) An owner or operator who uses a guarantee to satisfy the requirements of § 50193 Guam Administrative Rules and Regulations must establish a standby trust fund when the guarantee is obtained. Under the terms of the guarantee, all amounts paid by the guarantor under the guarantee will be deposited directly into the standby trust fund in accordance with instructions from the Administrator of Guam Environmental Protection Agency under § 501112. This standby trust fund must meet the requirements specified in § 501103.

§ 50197. Insurance and Risk Retention Group Coverage.

(a) An owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by obtaining liability insurance that conforms to the requirements of this section from a qualified insurer or risk retention group. Such insurance may be in the form of a separate insurance policy or an endorsement to an existing insurance policy.

(b) Each insurance policy must be amended by an endorsement worded as specified in paragraph (l) or evidenced by a certificate of insurance worded as specified in paragraph (2), except that instructions in brackets must be replaced with the relevant information and the brackets deleted:

(1) ENDORSEMENT

Name: [name of each covered location]
Address: [address of each covered location]
Policy Number:
Period of Coverage: [current policy period]
Name of [Insurer or Risk Retention Group]:
Address of [Insurer or Risk Retention Group]:
Name of Insured:
Address of Insured:

Endorsement:

1. This endorsement certifies that the policy to which the endorsement is attached provides liability insurance covering the following underground storage tanks:

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility.] for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; in accordance with and subject to the limits of liability, exclusions, conditions, and other terms of the policy; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tank(s) identified above.

The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's or Group's liability; if the amount of coverage is different for different types of coverage or for different underground storage tanks or locations, indicate the amount of coverage for each type of coverage, and/or for each underground storage tank or location], exclusive of legal defense costs, which are subject to a separate limit under the policy. This coverage is provided under [policy number]. The effective date of said policy is [date].

2. The insurance afforded with respect to such

occurrences is subject to all of the terms and conditions of the policy; provided, however, that any provisions inconsistent with subsections (a) to (e) of this paragraph are hereby amended to conform with subsections (a) to (e);

a. Bankruptcy or insolvency of the insured shall not relieve the ["Insurer" or "Group"] of its obligations under the policy to which this endorsement is attached.

b. The ["Insurer" or "Group"] is liable for the payment of amounts within any deductible applicable to the policy to the provider of corrective action or a damaged third-party, with a right of reimbursement by the insured for any such payment made by the ["Insurer" or "Group"]. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated under another mechanism or combination of mechanisms as specified in §§ 50195 to 501102 and §§ 501104 to 501107, Guam Administrative Rules and Regulations.

c. Whenever requested by the Administrator of Guam Environmental Protection Agency, the ["Insurer" or "Group"] agrees to furnish to the Administrator of Guam Environmental Protection Agency a signed duplicate original of the policy and all endorsements.

d. Cancellation or any other termination of the insurance by the ["Insurer" or "Group"], except for non-payment of premium or misrepresentation by the insured, will be effective only upon written notice and only after the expiration of sixty days after a copy of such written notice is received by the insured. Cancellation for non-payment of premium or misrepresentation by the insured will be effective only upon written notice and only after expiration of a minimum of ten days after a copy of such written notice is received by the insured. Insert for claims-

made policies:

e. The insurance covers claims otherwise covered by the policy that are reported to the ["Insurer" or "Group"] within six months of the effective date of cancellation or non-renewal of the policy except where the new or renewed policy has the same retroactive date or a retroactive date earlier than that of the prior policy, and which arise out of any covered occurrence that commenced after the policy retroactive date, if applicable, and prior to such policy renewal or termination date. Claims reported during such extended reporting period are subject to the terms, conditions, limits, including limits of liability, and exclusions of the policy.]

I hereby certify that the wording of this instrument is identical to the wording in § 50197(b)(1) , Guam Administrative Rules and Regulations, and that the ["Insurer" or "Group"] is ["licensed to transact the business of insurance or eligible to provide insurance as an excess or surplus lines insurer in Guam"].

[Signature of authorized representative of Insurer or Risk Retention Group]
[Name of person signing]
[Title of person signing], Authorized Representative of [name of Insurer or Risk Retention Group]
[Address of Representative]

(2) CERTIFICATE OF INSURANCE

Name: [name of each covered location]
Address: [address of each covered location]
Policy Number:

Endorsement (if applicable):
Period of Coverage: [current policy period]
Name of [Insurer or Risk Retention Group]:
Address of [Insurer or Risk Retention Group]:
Name of Insured:
Address of Insured:

Certification:

1. [Name of Insurer or Risk Retention Group], [the "Insurer" or "Group"], as identified above, hereby certifies that it has issued liability insurance covering the following underground storage tank(s):

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility.] for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; in accordance with and subject to the limits of liability, exclusions, conditions, and other terms of the policy; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tank(s) identified above.

The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's or Group's liability; if the amount of coverage is different for different types of coverage or for different

underground storage tanks or locations, indicate the amount of coverage for each type of coverage and/or for each underground storage tank or location], exclusive of legal defense costs, which are subject to a separate limit under the policy. This coverage is provided under [policy number]. The effective date of said policy is [date].

2. The ["Insurer" or "Group"] further certifies the following with respect to the insurance described in Paragraph 1:

a. Bankruptcy or insolvency of the insured shall not relieve the ["Insurer" or "Group"] of its obligations under the policy to which this certificate applies.

b. The ["Insurer" or "Group"] is liable for the payment of amounts within any deductible applicable to the policy to the provider of corrective action or a damaged third-party, with a right of reimbursement by the insured for any such payment made by the ["Insurer" or "Group"]. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated under another mechanism or combination of mechanisms as specified in §§ 50195 to 501102 and 501104 to 501107, Guam Administrative Rules and Regulations.

c. Whenever requested by the Administrator of Guam Environmental Protection Agency, the ["Insurer" or "Group"] agrees to furnish to the director a signed duplicate original of the policy and all endorsements.

d. Cancellation or any other termination of the insurance by the ["Insurer" or "Group"], except for non-payment of premium or misrepresentation by the insured, will be effective only upon written notice and only after the expiration of sixty days after a copy of such written notice is received by the insured. Cancellation for non-payment of premium or misrepresentation by the insured will be effective

only upon written notice and only after expiration of a minimum of ten days after a copy of such written notice is received by the insured. Insert for claims-made policies:

e. The insurance covers claims otherwise covered by the policy that are reported to the ["Insurer" or "Group"] within six months of the effective date of cancellation or non-renewal of the policy except where the new or renewed policy has the same retroactive date or a retroactive date earlier than that of the prior policy, and which arise out of any covered occurrence that commenced after the policy retroactive date, if applicable, and prior to such policy renewal or termination date. Claims reported during such extended reporting period are subject to the terms, conditions, limits, including limits of liability, and exclusions of the policy.]

I hereby certify that the wording of this instrument is identical to the wording in § 50197(b)(2), Guam Administrative Rules and Regulations, and that the ["Insurer" or "Group"] is ["licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in Guam"].

[Signature of authorized representative of Insurer]
[Type Name]
[Title], Authorized Representative of [name of Insurer or Risk Retention Group]
[Address of Representative]

(c) Each insurance policy must be issued by an insurer or a risk retention group that, at a minimum, is licensed to transact the business of insurance or eligible to provide insurance as an excess or surplus lines

insurer in Guam.

§ 50198. Surety Bond.

(a) An owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by obtaining a surety bond that conforms to the requirements of this section. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in the latest Circular 570 of the U.S. Department of the Treasury.

(b) The surety bond must be worded as follows, except that instructions in brackets must be replaced with the relevant information and the brackets deleted:

PERFORMANCE BOND

Date bond executed:
Period of coverage:
Principal: [legal name and business address of owner or operator]
Type of organization: [insert: "individual", "joint venture", "partnership", or "corporation"]
State of incorporation (if applicable):
Surety(ies): [name(s) and business address(es)]
Scope of Coverage: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility. List the coverage guaranteed by the bond: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases" "arising from operating the underground storage tank"].

Penal sums of bond:
Per occurrence $
Annual aggregate $
Surety's bond number:

Know All Persons by These Presents, that we, the Principal and Surety(ies), hereto are firmly bound to the Guam Environmental Protection Agency, in the above penal sums for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sums jointly and severally only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sums only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sums.

Whereas said Principal is required under Article 8, Guam Administrative Rules and Regulations, to provide financial assurance for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tanks identified above, and

Whereas said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

Now, therefore, the conditions of the obligation are such that if the Principal shall faithfully ["take corrective action, in accordance with Article 6, Guam Administrative Rules and Regulations, and the Administrator of Guam Environmental Protection Agency instructions for," and/or "compensate injured third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "sudden and nonsudden accidental releases"] arising from operating the tank(s) identified above, or if the

Principal shall provide alternate financial assurance, as specified in Article 8, Guam Administrative Rules and Regulations, within one hundred twenty days after the date the notice of cancellation is received by the Principal from the Surety(ies), then this obligation shall be null and void; otherwise it is to remain in full force and effect.

Such obligation does not apply to any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by the Administrator of Guam Environmental Protection Agency that the Principal has failed to ["take corrective action, in accordance with Article 6, Guam Administrative Rules and Regulations and the Administrator of Guam Environmental Protection Agency's instructions," and/or "compensate injured third parties"] as guaranteed by this bond, the Surety(ies) shall either perform ["corrective action in accordance with Chapter 50, Guam Administrative Rules and Regulations and the Administrator of Guam Environmental Protection Agency's

instructions," and/or "third party liability compensation"] or place funds in an amount up to the annual aggregate penal sum into the standby trust fund as directed by the Administrator of Guam Environmental Protection Agency under § 501112 , Guam Administrative Rules and Regulations.

Upon notification by the Administrator of Guam Environmental Protection Agency that the Principal has failed to provide alternate financial assurance within sixty days after the date the notice of cancellation is received by the determined or suspects that a release has occurred, the Surety(ies) shall place funds in an amount not exceeding the annual aggregate penal sum into the standby trust fund as directed by the Administrator of Guam Environmental Protection Agency and § 501112, Guam Administrative Rules and Regulations.

The Surety(ies) hereby waive(s) notification of amendments to applicable laws, statutes, rules, and regulations and agrees that no such amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the annual shall the obligation of the Surety(ies) hereunder exceed the amount of said annual aggregate penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal, provided, however, that cancellation shall not occur during the one hundred twenty days beginning on the date of return receipt.

The Principal may terminate this bond by sending written notice to the Surety(ies).

In Witness Thereof, the Principal and Surety(ies) have executed this Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in § 50198(b), Guam Administrative Rules and Regulations, as such regulations were constituted on the date this bond was executed.

Principal
[Signature(s)]
[Name(s)]
[Title(s)]
[Corporate seal]

Corporate Surety(ies)
[Name and address]
State of Incorporation:
Liability limit: $
[Signature(s)]
[Name(s) and title(s)]
[Corporate seal]

[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]

Bond premium: $

(c) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. In all cases, the surety's liability is limited to the per-occurrence and annual aggregate penal sums.

(d) The owner or operator who uses a surety bond to satisfy the requirements of § 50193, Guam Administrative Rules and Regulations must establish a standby trust fund when the surety bond is acquired. Under the terms of the bond, all amounts paid by the surety under the bond will be deposited directly into the standby trust fund in accordance with instructions from the Administrator of Guam Environmental Protection Agency under § 501112, Guam Administrative Rules and Regulations. This standby trust fund must meet the requirements specified in § 501103, Guam Administrative Rules and Regulations.

§ 50199. Letter of Credit.

(a) An owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by obtaining an irrevocable standby letter of credit that conforms to the requirements of this section. The issuing institution must be an entity that has the authority to issue letters of credit in Guam and whose letter-of-credit operations are regulated and examined by a federal or Guam agency.

(b) The letter of credit must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

IRREVOCABLE STANDBY LETTER OF CREDIT

[Name and address of issuing institution]
[Name and address of the Administrator of Guam Environmental Protection Agency]

Dear Sir or Madam: We hereby establish our Irrevocable Standby Letter of Credit No. __ in your favor, at the request and for the account of [owner or operator name] of [address] up to the aggregate amount of [in words] U.S. dollars ($[insert dollar amount]), available upon presentation of

(1) Your sight draft, bearing reference to this letter of credit, No. __, and

(2) Your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under authority of 10 GCA Chapter 76."

This letter of credit may be drawn on to cover [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] arising from operating the underground storage tank(s) identified below in the amount of [in words] $[insert dollar amount] per occurrence and [in words] $[insert dollar amount] annual aggregate:

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for

each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. 280.22, or permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility.]

The letter of credit may not be drawn on to cover any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

This letter of credit is effective as of [date] and shall expire on [date], but such expiration date shall be automatically extended for a period of [at least the length of the original term] on [expiration date] and on each successive expiration date, unless, at least one hundred twenty days before the current expiration date, we notify [owner or operator] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date. In the event that [owner or operator] is so notified, any unused portion of the credit shall be available upon presentation of your sight draft for one hundred twenty days after the date of receipt by [owner or operator], as shown on the signed return

receipt.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us, and we shall deposit the amount of the draft directly into the standby trust fund of [owner or operator] in accordance with your instructions.

We certify that the wording of this letter of credit is identical to the wording specified in § 50199(b), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Signature(s) and title(s) of official(s) of issuing institution]
[Date]

This credit is subject to [insert: "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce," or "the Uniform Commercial Code"].

(c) An owner or operator who uses a letter of credit to satisfy the requirements of § 50193, Guam Administrative Rules and Regulations must also establish a standby trust fund when the letter of credit is acquired. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the Administrator will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Administrator of Guam Environmental Protection Agency under § 501112, Guam Administrative Rules and Regulations. This standby trust fund must meet the requirements specified in § 501103, Guam Administrative Rules and Regulations.

(d) The letter of credit must be irrevocable with a term specified by the issuing institution. The letter of credit must provide that credit be automatically renewed for the same term as the original term, unless, at least one hundred twenty days before the current expiration date, the issuing institution notifies the owner or operator by certified mail of its decision not to renew the letter of credit. Under the terms of the letter of credit, the one hundred twenty days will begin on the date when the

owner or operator receives the notice, as evidenced by the return receipt.

§ 501100 to § 501101. [Reserved.]

§ 501102. Trust Fund.

(a) An owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by establishing a trust fund that conforms to the requirements of this section. The trustee must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal agency or an agency of the state in which the fund is established.

(b) The wording of the trust agreement must be identical to the wording specified in § 501103(b)(1), Guam Administrative Rules and Regulations, and must be accompanied by a formal certification of acknowledgment as specified in § 501103(b)(2), Guam Administrative Rules and Regulations.

(c) The trust fund, when established, must be funded for the full required amount of coverage, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining required coverage.

(d) If the value of the trust fund is greater than the required amount of coverage, the owner or operator may submit a written request to the Administrator for release of the excess.

(e) If other financial assurance as specified in this subchapter is substituted for all or part of the trust fund, the owner or operator may submit a written request to the Administrator for release of the excess.

(f) Within sixty days after receiving a request from the owner or operator for release of funds as specified in subsection (d) or (e), the Administrator will instruct the trustee to release to the owner or operator such funds as the Administrator specifies in writing.

§ 501103. Standby Trust Fund.

a) An owner or operator using any one of the mechanisms

authorized by §§ 50196, 50198, or 50199, Guam Administrative Rules and Regulations must establish a standby trust fund when the mechanism is acquired. The trustee of the standby trust fund must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal agency or an agency of the state in which the fund is established.

(b)(l) The standby trust agreement, or trust agreement, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

TRUST AGREEMENT

Trust agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator], a [name of state] [insert: "corporation", "partnership", "association", or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert: "Incorporated in the State of __" or "a national bank"], the "Trustee".

Whereas, Guam Environmental Protection Agency has established certain regulations applicable to the Grantor, requiring that an owner or operator of an underground storage tank shall provide assurance that funds will be available when needed for corrective action and third-party compensation for bodily injury and property damage caused by sudden and nonsudden accidental releases arising from the operation of the underground storage tank. The attached Schedule A lists the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located that are covered by the [insert "standby" where trust agreement is standby trust agreement] trust agreement;

[Whereas, the Grantor has elected to establish [insert either "a guarantee", "surety bond", or "letter of credit"] to provide all or part of such financial assurance for the

underground storage tanks identified herein and is required to establish a standby trust fund able to accept payments from the instrument (This paragraph is only applicable to the standby trust agreement.)];

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee;

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of the Financial Assurance Mechanism. This Agreement pertains to the [identify the financial assurance mechanism, either a guarantee, surety bond, or letter of credit, from which the standby trust fund is established to receive payments (This paragraph is only applicable to the standby trust agreement.)].

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, the "Fund," for the benefit of Guam Environmental Protection Agency. The Grantor and the Trustee intend that no third party have access to the Fund except as herein provided. [The Fund is established initially as a standby to receive payments and shall not consist of any property.] Payments made by the provider of financial assurance pursuant to the Administrator of Guam Environmental Protection Agency's instruction are transferred to the Trustee and are referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the

Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor as provider of financial assurance, any payments necessary to discharge any liability of the Grantor established by Guam Environmental Protection Agency.

Section 4. Payment for ["Corrective Action" or "Third-Party Liability Claims" or both]. The Trustee shall make payments from the Fund as the Administrator of Guam Environmental Protection Agency shall direct, in writing, to provide for the payment of the costs of [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] arising from operating the tanks covered by the financial assurance mechanism identified in this Agreement.

The Fund may not be drawn upon to cover any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193 Guam Administrative Rules and Regulations.

The Trustee shall reimburse the Grantor, or other persons as specified by the Administrator of Guam Environmental Protection Agency, from the Fund for corrective action expenditures and/or third-party liability claims, in such amounts as the director shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the Administrator specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of cash and securities acceptable to the Trustee.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his or her duties with respect to the trust fund solely in the interest of the beneficiaries and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(i) Securities or other obligations of the Grantor, or any other owner or operator of the tanks, or any of their

affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2(a), shall not be acquired or held, unless they are securities or other obligations of the federal or a state government;

(ii) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the federal or state government; and

(iii) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase

money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the federal or state government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by

the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any questions arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 11. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 12. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in writing sent to the Grantor and the present Trustee by certified mail ten days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

Section 13. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Schedule B or such other designees as the Grantor may designate by amendment to Schedule B. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the Administrator of Guam Environmental Protection Agency to the Trustee shall be in writing, signed by the Administrator, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the Administrator hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or the Administrator of Guam Environmental Protection Agency, except as provided for herein.

Section 14. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor and the Trustee, or by the Trustee and the Administrator of Guam Environmental Protection Agency if the Grantor ceases to exist.

Section 15. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 14, this Trust shall be irrevocable and shall continue until terminated at the written direction of the Grantor and the Trustee, or by the Trustee and the Administrator of Guam Environmental Protection Agency, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

Section 16. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the Administrator of Guam Environmental Protection Agency issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 17. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of Guam or the Comptroller of the Currency in the case of National Association banks.

Section 18. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

In Witness whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals (if applicable) to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in § 501103(b)(1), Guam Administrative Rules and Regulations, as such regulations were constituted on the date written above.

[Signature of Grantor]
[Name of the Grantor]
[Title]

Attest:
[Signature of Trustee]
[Name of the Trustee]
[Title]
[Seal]

[Signature of Witness]
[Name of the Witness]
[Title]
[Seal]

(2) The standby trust agreement, or trust agreement, must be accompanied by a formal certification of acknowledgment similar to the following:

State of ___
County of ___

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation; and that she/he signed her/his name thereto by like order.

[Signature of Notary Public]
[Name of Notary Public]

(c) The Administrator will instruct the trustee to refund the balance of the standby trust fund to the provider of financial assurance if the Administrator determines that no additional corrective action costs or

third-party liability claims will occur as a result of a release covered by the financial assurance mechanism for which the standby trust fund was established.

(d) An owner or operator may establish one trust fund as the depository mechanism for all funds assured in compliance with this rule.

§ 501104. Local Government Bond Rating Test.

(a) A general purpose local government owner or operator and/or local government serving as a guarantor may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by having a currently outstanding issue or issues of general obligation bonds of $1,000,000 or more, excluding refunded obligations, with a Moody's rating of Aaa, Aa, A, or Baa, or a Standard & Poor's rating of AAA, AA, A, or BBB. Where a local government has multiple outstanding issues, or where a local government's bonds are rated by both Moody's and Standard and Poor's, the lowest rating must be used to determine eligibility. Bonds that are backed by credit enhancement other than municipal bond insurance may not be considered in determining the amount of applicable bonds outstanding.

(b) A local government owner or operator or local government serving as a guarantor that is not a general-purpose local government and does not have the legal authority to issue general obligation bonds may satisfy the requirements of § 50193, Guam Administrative Rules and Regulation by having a currently outstanding issue or issues of revenue bonds of $1,000,000 or more, excluding refunded issues and by also having a Moody's rating of Aaa, Aa, A, or Baa, or a Standard & Poor's rating of AAA, AA, A or BBB as the lowest rating for any rated revenue bond issued by the local government. Where bonds are rated by both Moody's and Standard & Poor's, the lower rating for each bond must be used to determine eligibility. Bonds that are backed by credit enhancement may not be considered in determining the amount of applicable bonds outstanding.

(c) The local government owner or operator and/or guarantor must maintain a copy of its bond rating published within the last twelve

months by Moody's or Standard & Poor's.

(d) To demonstrate that it meets the local government bond rating test, the chief financial officer of a general purpose local government owner or operator and/or guarantor must sign a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM THE CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of local government owner or operator, or guarantor]. This letter is in support of the use of the bond rating test to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s).

Underground storage tanks at the following facilities are assured by this bond rating test: [List for each facility: the name and address of the facility where tanks are assured by the bond rating test].

The details of the issue date, maturity, outstanding amount, bond rating, and bond rating agency of all outstanding bond issues that are being used by [name of local government owner or operator, or guarantor] to demonstrate financial responsibility are as follows: [complete table]

Issue Date	Maturity Date	Outstanding Amount	Bond Rating	Rating Agency*

*[Moody's or Standard & Poor's]

The total outstanding obligation of [insert amount], excluding

refunded bond issues, exceeds the minimum amount of $1,000,000. All outstanding general obligation bonds issued by this government that have been rated by Moody's or Standard & Poor's are rated as at least investment grade (Moody's Baa or Standard & Poor's BBB) based on the most recent ratings published within the last twelve months. Neither rating service has provided notification within the last twelve months of downgrading of bond ratings below investment grade or of withdrawal of bond rating other than for repayment of outstanding bond issues.

I hereby certify that the wording of this letter is identical to the wording specified in § 501104(d), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Date]
[Signature]
[Name]
[Title]

(e) To demonstrate that it meets the local government bond rating test, the chief financial officer of local government owner or operator and/or guarantor other than a general purpose government must sign a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM THE CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of local government owner or operator, or guarantor]. This letter is in support of the use of the bond rating test to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an)

underground storage tank(s). This local government is not organized to provide general governmental services and does not have the legal authority under state law or constitutional provisions to issue general obligation debt.

Underground storage tanks at the following facilities are assured by this bond rating test: [List for each facility: the name and address of the facility where tanks are assured by the bond rating test.]

The details of the issue date, maturity, outstanding amount, bond rating, and bond rating agency of all outstanding revenue bond issues that are being used by [name of local government owner or operator, or guarantor] to demonstrate financial responsibility are as follows: [complete table]

Issue Date	Maturity Date	Outstanding Amount	Bond Rating	Rating Agency*

*[Moody's or Standard & Poor's]

The total outstanding obligation of [insert amount], excluding refunded bond issues, exceeds the minimum amount of $1,000,000. All outstanding revenue bonds issued by this government that have been rated by Moody's or Standard & Poor's are rated as at least investment grade (Moody's Baa or Standard & Poor's BBB) based on the most recent ratings published within the last twelve months. The revenue bonds listed are not backed by third-party credit enhancement or insured by a municipal bond insurance company. Neither rating service has provided notification within the last twelve months of downgrading of bond ratings below investment grade or of withdrawal of bond rating other than for repayment of outstanding bond issues.

I hereby certify that the wording of this letter is identical to the wording specified in § 501104 (e), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Date]
[Signature]
[Name]
[Title]

(f) The director may require reports of financial condition at any time from the local government owner or operator and/or local government guarantor. If the Administrator finds, on the basis of such reports or other information, that the local government owner or operator and/or guarantor no longer meets the local government bond rating test requirements of this section, the local government owner or operator must obtain alternative coverage within thirty days after notification of such a finding.

(g) If a local government owner or operator using the bond rating test to provide financial assurance finds that it no longer meets the bond rating test requirements, the local government owner or operator must obtain alternative coverage within one hundred fifty days of the change in status.

(h) If the local government owner or operator fails to obtain alternate assurance within one hundred fifty days of finding that it no longer meets the requirements of the bond rating test or within thirty days of notification by the Administrator that it no longer meets the requirements of the bond rating test, the owner or operator must notify the Administrator of such failure within ten days.

§ 501105. Local Government Financial Test.

(a) A local government owner or operator may satisfy the requirements of § 50193 by passing the financial test specified in this section. To be eligible to use the financial test, the local government owner or operator must have the ability and authority to assess and levy taxes or to freely establish fees and charges. To pass the local government financial test, the owner or operator must meet the criteria of subsection (b)(2) and (3) based on year-end financial statements for the latest

completed fiscal year.

(b) (1) The local government owner or operator must have the following information available, as shown in the year-end financial statements for the latest completed fiscal year:

(A) Total Revenues: Consists of the sum of general fund operating and non-operating revenues including net local taxes, licenses and permits, fines and forfeitures, revenues from use of money and property, charges for services, investment earnings, sales (property, publications, etc.), intergovernmental revenues (restricted and unrestricted), and total revenues from all other governmental funds including enterprise, debt service, capital projects, and special revenues, but excluding revenues to funds held in a trust or agency capacity. For purposes of this test, the calculation of total revenues shall exclude all transfers between funds under the direct control of the local government using the financial test (interfund transfers), liquidation of investments, and issuance of debt.

(B) Total Expenditures: Consists of the sum of general fund operating and non-operating expenditures including public safety, public utilities, transportation, public works, environmental protection, cultural and recreational, community development, revenue sharing, employee benefits and compensation, office management, planning and zoning, capital projects, interest payments on debt, payments for retirement of debt principal, and total expenditures from all other governmental funds including enterprise, debt service, capital projects, and special revenues. For purposes of this test, the calculation of total expenditures shall exclude all transfers between funds under the direct control of the local government using the financial test

(interfund transfers).

(C) Local Revenues: Consists of total revenues (as defined in subparagraph (A)) minus the sum of all transfers from other governmental entities, including all monies received from federal, state, or local government sources.

(D) Debt Service: Consists of the sum of all interest and principal payments on all long-term credit obligations and all interest-bearing short-term credit obligations. Includes interest and principal payments on general obligation bonds, revenue bonds, notes, mortgages, judgments, and interest-bearing warrants. Excludes payments on non-interest-bearing short-term obligations, interfund obligations, amounts owed in a trust or agency capacity, and advances and contingent loans from other governments.

(E) Total Funds: Consists of the sum of cash and investment securities from all funds, including general, enterprise, debt service, capital projects, and special revenue funds, but excluding employee retirement funds, at the end of the local government's financial reporting year. Includes federal securities, federal agency securities, state and local government securities, and other securities such as bonds, notes and mortgages. For purposes of this test, the calculation of total funds shall exclude agency funds, private trust funds, accounts receivable, value of real property, and other non-security assets.

(F) Population consists of the number of people in the area served by the local government.

(2) The local government's year-end financial statements, if independently audited, cannot include an adverse auditor's opinion or a disclaimer of opinion. The local government cannot have outstanding issues of general obligation or revenue bonds that are rated as less than investment grade.

(3) The local government owner or operator must have a letter signed by the chief financial officer worded as specified in subsection (c).

(c) To demonstrate that it meets the financial test under subsection (b), the chief financial officer of the local government owner or operator, must sign, within one hundred twenty days of the close of each financial reporting year, as defined by the twelve-month period for which financial statements used to support the financial test are prepared, a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of the owner or operator]. This letter is in support of the use of the local government financial test to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating [an] underground storage tank[s].

Underground storage tanks at the following facilities are assured by this financial test [List for each facility: the name and address of the facility where tanks assured by this financial test are located. If separate mechanisms or combinations of mechanisms are being used to assure any of the tanks at this facility, list each tank assured by this financial test by the tank identification number provided in the notification submitted pursuant to 10 GCA Chapter 76, 40 C.F.R. section 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations.

This owner or operator has not received an adverse opinion, or a disclaimer of opinion from an independent auditor on its financial statements for the latest completed fiscal year. Any outstanding issues of general obligation or revenue bonds, if rated, have a Moody's rating of

Aaa, Aa, A, or Baa or a Standard and Poor's rating of AAA, AA, A, or BBB; if rated by both firms, the bonds have a Moody's rating of Aaa, Aa, A or Baa and a Standard and Poor's rating of AAA, AA, A, or BBB.

WORKSHEET FOR MUNICIPAL FINANCIAL TEST

PART I: BASIC INFORMATION

1. Total Revenues
    a. Revenues (dollars)
        Value of revenues excludes liquidation of investments and issuance of debt. Value includes all general fund operating and non-operating revenues, as well as all revenues from all other governmental funds including enterprise, debt service, capital projects, and special revenues, but excluding revenues to funds held in a trust or agency capacity.
    b. Subtract interfund transfers (dollars)
    c. Total Revenues (dollars)
2. Total Expenditures
    a. Expenditures (dollars)
        Value consists of the sum of general fund operating and non-operating expenditures including interest payments on debt, payments for retirement of debt principal, and total expenditures from all other governmental funds including enterprise, debt service, capital projects, and special revenues.
    b. Subtract interfund transfers (dollars)
    c. Total Expenditures (dollars)
3. Local Revenues
    a. Total Revenues (from 1c) (dollars)
    b. Subtract total intergovernmental transfers (dollars)
    c. Local Revenues (dollars)
4. Debt Service
    a. Interest and fiscal charges (dollars)

b. Add debt retirement (dollars)
c. Total Debt Service (dollars)

5. Total Funds (Dollars)
(Sum of amounts held as cash and investment securities from all funds, excluding amounts held for employee retirement funds, agency funds, and trust funds)

6. Population (Persons)

PART II: APPLICATION OF TEST

7. Total Revenues to Population
   a. Total Revenues (from 1c)
   b. Population (from 6)
   c. Divide 7a by 7b
   d. Subtract 417
   e. Divide by 5,212
   f. Multiply by 4.095
8. Total Expenses to Population
   a. Total Expenses (from 2c)
   b. Population (from 6)
   c. Divide 8a by 8b
   d. Subtract 524
   e. Divide by 5,401
   f. Multiply by 4.095
9. Local Revenues to Total Revenues
   a. Local Revenues (from 3c)
   b. Total Revenues (from 1c)
   c. Divide 9a by 9b
   d. Subtract 0.695
   e. Divide by 0.205
   f. Multiply by 2.840
10. Debt Service to Population
   a. Debt Service (from 4c)
   b. Population (from 6)
   c. Divide 10a by 10b

d. Subtract 51
e. Divide by 1,038
f. Multiply by -1.866

11. Debt Service to Total Revenues
    a. Debt Service (from 4c)
    b. Total Revenues (from 1c)
    c. Divide 11a by 11b
    d. Subtract 0.068
    e. Divide by 0.259
    f. Multiply by -3.533
12. Total Revenues to Total Expenses
    a. Total Revenues (from 1c)
    b. Total Expenses (from 2c)
    c. Divide 12a by 12b
    d. Subtract 0.910
    e. Divide by 0.899
    f. Multiply by 3.458
13. Funds Balance to Total Revenues
    a. Total Funds (from 5)
    b. Total Revenues (from 1c)
    c. Divide 13a by 13b
    d. Subtract 0.891
    e. Divide by 9.156
    f. Multiply by 3.270
14. Funds Balance to Total Expenses
    a. Total Funds (from 5)
    b. Total Expenses (from 2c)
    c. Divide 14a by 14b
    d. Subtract 0.866
    e. Divide by 6.409
    f. Multiply by 3.270
15. Total Funds to Population
    a. Total Funds (from 5)
    b. Population (from 6)
    c. Divide 15a by 15b

d. Subtract 270
e. Divide by 4,548
f. Multiply by 1.866

16. Add 7f+8f+9f+10f+11f+12f+13f+14f+15f+4.937

I hereby certify that the financial index shown on line 16 of the worksheet is greater than zero and that the wording of this letter is identical to the wording specified in § 501105(c), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Date]
[Signature]
[Name]
[Title]

(d) If a local government owner or operator using the test to provide financial assurance finds that it no longer meets the requirements of the financial test based on the year-end financial statements, the owner or operator must obtain alternative coverage within one hundred fifty days of the end of the year for which financial statements have been prepared.

(e) The Administrator may require reports of financial condition at any time from the local government owner or operator. If the director finds, on the basis of such reports or other information, that the local government owner or operator no longer meets the financial test requirements of subsections (b) and (c), the owner or operator must obtain alternate coverage within thirty days after notification of such a finding.

(f) If the local government owner or operator fails to obtain alternate assurance within one hundred fifty days of finding that it no longer meets the requirements of the financial test based on the year-end financial statements or within thirty days of notification by the Administrator that it no longer meets the requirements of the financial test, the owner or operator must notify the Administrator of such failure within ten days.

§ 501106. Local Government Guarantee.

(a) A local government owner or operator may satisfy the requirements of § 50193, by obtaining a guarantee that conforms to the requirements of this section. The guarantor must be a local government having a "substantial governmental relationship" with the owner or operator and issuing the guarantee as an act incident to that relationship. A local government acting, as the guarantor must:

(1) Demonstrate that it meets the bond rating test requirement of § 501104, and deliver a copy of the chief financial officer's letter as contained in § 591104(d) and (e), to the local government owner or operator;

(2) Demonstrate that it meets the worksheet test requirements of § 501105, and deliver a copy of the chief financial officer's letter as contained in § 501105(c), to the local government owner or operator; or

(3) Demonstrate that it meets the local government fund requirements of § 501107(1), (2), or (3), and deliver a copy of the chief financial officer's letter as contained in § 501107, to the local government owner or operator.

(b) If the local government guarantor is unable to demonstrate financial assurance under §§ 501104, 501105, or 501107(1), (2), or (3), at the end of the financial reporting year, the guarantor shall send by certified mail, before cancellation or non-renewal of the guarantee, notice to the owner or operator. The guarantee will terminate no less than one hundred twenty days after the date the owner or operator receives the notification, as evidenced by the return receipt. The owner or operator must obtain alternative coverage as specified in § 501114(e).

(c) The guarantee agreement must be worded as specified in subsection (d) or (e), depending on which of the following alternative guarantee arrangements is selected:

(1) If, in the default or incapacity of the owner or operator, the guarantor guarantees to fund a standby trust as directed by the Administrator, the guarantee shall be worded as

specified in subsection (d).

(2) If, in the default or incapacity of the owner or operator, the guarantor guarantees to make payments as directed by the director for taking corrective action or compensating third parties for bodily injury and property damage, the guarantee shall be worded as specified in subsection (e).

(d) The local government guarantee with standby trust must be worded exactly as follows, except that instructions in brackets are to be replaced with relevant information and the brackets deleted:

LOCAL GOVERNMENT GUARANTEE WITH STANDBY TRUST MADE BY A LOCAL GOVERNMENT

Guarantee made this [date] by [name of guaranteeing entity], a local government organized under the laws of Guam, herein referred to as guarantor, to the Guam Environmental Protection Agency and to any and all third parties, and obliges, on behalf of [local government owner or operator].

Recitals

(1) Guarantor meets or exceeds [select one: the local government bond rating test requirements of § 501104, Guam Administrative Rules and Regulations, the local government financial test requirements of § 501105, Guam Administrative Rules, or the local government fund under § 501107(1),(2) or (3), Guam Administrative Rules and Regulations.

(2) [Local government owner or operator] owns or operates the following underground storage tank(s) covered by this guarantee: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 10 GCA Chapter 76, 40 C.F.R. section 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and

address of the facility.] This guarantee satisfies Article 8 requirements for assuring funding for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the above-identified underground storage tank(s) in the amount of [insert dollar amount] per occurrence and [insert: dollar amount] annual aggregate.

(3) Incident to our substantial governmental relationship with [local government owner or operator], guarantor guarantees to the Guam Environmental Protection Agency and to any and all third parties that:

In the event that [local government owner or operator] fails to provide alternative coverage within sixty days after receipt of a notice of cancellation of this guarantee and the Administrator of Guam Environmental Protection Agency has determined or suspects that a release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon instructions from the director shall fund a standby trust fund in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, in an amount not to exceed the coverage limits specified above.

In the event that the Administrator determines that [local government owner or operator] has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with Article 6, the guarantor upon written instructions from the director shall fund a standby trust fund in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, in an amount not to exceed the coverage limits specified above.

If [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by ["sudden" and/or "nonsudden"] accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written instructions from the Administrator, shall fund a standby trust in

accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, to satisfy such judgment(s), award(s), or settlement agreement(s) up to the limits of coverage specified above.

(4) Guarantor agrees that, if at the end of any fiscal year before cancellation of this guarantee, the guarantor fails to meet or exceed the requirements of the financial responsibility mechanism specified in paragraph (1), guarantor shall send within one hundred twenty days of such failure, by certified mail, notice to [local government owner or operator], as evidenced by the return receipt.

(5) Guarantor agrees to notify [owner or operator] by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code naming guarantor as debtor, within ten days after commencement of the proceeding.

(6) Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of [owner or operator] pursuant to Article 1.

(7) Guarantor agrees to remain bound under this guarantee for so long as [local government owner or operator] must comply with the applicable financial responsibility requirements of Article 8, for the above identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to [owner or operator], such cancellation to become effective no earlier than one hundred twenty days after receipt of such notice by [owner or operator], as evidenced by the return receipt.

(8) The guarantor's obligation does not apply to any of the following:

(a) Any obligation of [local government owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert: local government owner or operator] arising from, and in the course of, employment by [insert: local government owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the

care, custody, or control of, or occupied by [insert: local government owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily damage or property damage for which [insert: owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

(9) Guarantor expressly waives notice of acceptance of this guarantee by the Guam Environmental Protection Agency, by any or all third parties, or by [local government owner or operator].

I hereby certify that the wording of this guarantee is identical to the wording specified in § 501106(d), Guam Administrative Rules and Regulations, as such regulations were constituted on the effective date shown immediately below.

Effective date:
[Name of guarantor]
[Authorized signature for guarantor]
[Name of person signing]
[Title of person signing]
Signature of witness or notary:

(e) The local government guarantee without standby trust must be worded exactly as follows, except that instructions in brackets are to be replaced with relevant information and the brackets deleted:

LOCAL GOVERNMENT GUARANTEE WITHOUT STANDBY TRUST MADE BY A LOCAL GOVERNMENT

Guarantee made this [date] by [name of guaranteeing entity], a local government organized under the laws of Guam, herein referred to as guarantor, to the Guam Environmental Protection Agency and to any and all third parties, and obliges, on behalf of [local government owner or operator].

Recitals

(1) Guarantor meets or exceeds [select one: the local government bond rating test requirements of § 501104, Guam Administrative Rules and Regulations, the local government financial test requirements of § 501105, Guam Administrative Rules and Regulations, or the local government fund under § 501107(1),(2) or (3), Guam Administrative Rules and Regulations.

(2) [Local government owner or operator] owns or operates the following underground storage tank(s) covered by this guarantee: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 10 GCA Chapter 76, 40 C.F.R. section 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility.] This guarantee satisfies Article 8, requirements for assuring funding for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the above-identified underground storage tank(s) in the amount of [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate.

(3) Incident to our substantial governmental relationship with [local government owner or operator], guarantor guarantees to the Guam Environmental Protection Agency and to any and all third parties and obliges that:

In the event that [local government owner or operator] fails to provide alternative coverage within sixty days after receipt of a notice of cancellation of this guarantee and the Administrator of Guam Environmental Protection Agency has determined or suspects that a

release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon written instructions from the Administrator shall make funds available to pay for corrective actions and compensate third parties for bodily injury and property damage in an amount not to exceed the coverage limits specified above.

In the event that the Administrator determines that [local government owner or operator] has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with Article 6, the guarantor upon written instructions from the director shall make funds available to pay for corrective actions in an amount not to exceed the coverage limits specified above.

If [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by ["sudden" and/or "nonsudden"] accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written instructions from the director, shall make funds available to compensate third parties for bodily injury and property damage in an amount not to exceed the coverage limits specified above.

(4) Guarantor agrees that if at the end of any fiscal year before cancellation of this guarantee, the guarantor fails to meet or exceed the requirements of the financial responsibility mechanism specified in paragraph (1), guarantor shall send within one hundred twenty days of such failure, by certified mail, notice to [local government owner or operator], as evidenced by the return receipt.

(5) Guarantor agrees to notify [owner or operator] by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code naming guarantor as debtor, within ten days after commencement of the proceeding.

(6) Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of [owner or operator] pursuant to Chapter 50, Guam Administrative Rules and Regulations.

(7) Guarantor agrees to remain bound under this guarantee for

so long as [local government owner or operator] must comply with the applicable financial responsibility requirements of Article 8, for the above identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to [owner or operator], such cancellation to become effective no earlier than one hundred twenty days after receipt of such notice by [owner or operator], as evidenced by the return receipt. If notified of a probable release, the guarantor agrees to remain bound to the terms of this guarantee for all charges arising from the release, up to the coverage limits specified above, notwithstanding the cancellation of the guarantee with respect to future releases.

(8) The guarantor's obligation does not apply to any of the following:

(a) Any obligation of [local government owner or operator] under a workers' compensation disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert: local government owner or operator] arising from and in the course of, employment by [insert: local government owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert: local government owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily damage or property damage for which [insert: owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

(9) Guarantor expressly waives notice of acceptance of this guarantee by the Guam Environmental Protection Agency, by any or all third parties, or by [local government owner or operator].

I hereby certify that the wording of this guarantee is identical to the wording specified in § 501106(e), Guam Administrative Rules and

Regulations, as such regulations were constituted on the effective date shown immediately below.

Effective date:
[Name of guarantor]
[Authorized signature for guarantor]
[Name of person signing]
[Title of person signing]
Signature of witness or notary:

§ 501107. Local Government Fund.

A local government owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by establishing a dedicated fund account that conforms to the requirements of this section. Except as specified in paragraph (2), a dedicated fund may not be commingled with other funds or otherwise used in normal operations. A dedicated fund will be considered eligible if it meets one of the following requirements:

(1) The fund is dedicated by state constitutional provision, or local government statute, charter, ordinance, or order to pay for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks or tank systems and is funded for the full amount of coverage required under § 50193, Guam Administrative Rules and Regulations, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage; or

(2) The fund is dedicated by state constitutional provision, or local government statute, charter, ordinance, or order as a contingency fund for general emergencies, including taking corrective action and compensating third parties for bodily injury and property damage caused by accidental releases

arising from the operation of petroleum underground storage tanks or tank systems, and is funded for five times the full amount of coverage required under § 50193, Guam Administrative Rules and Regulations, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage. If the fund is funded for less than five times the amount of coverage required under § 50193, Guam Administrative Rules and Regulations, the amount of financial responsibility demonstrated by the fund may not exceed one-fifth the amount in the fund; or

(3) The fund is dedicated by state constitutional provision, or local government statute, charter, ordinance or order to pay for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks or tank systems. A payment is made to the fund once every year for seven years until the fund is fully-funded. This seven-year period is hereafter referred to as the "pay-in-period". The amount of each payment must be determined by this formula:

$$\frac{TF - CF}{Y}$$

Where TF is the total required financial assurance for the owner or operator, CF is the current amount in the fund, and Y is the number of years remaining in the pay-in-period, and;

(A) The local government owner or operator has available bonding authority, approved through voter referendum (if such approval is necessary prior to the issuance of bonds), for an amount equal to the difference between the required amount of coverage and the amount held in the dedicated fund. This bonding authority shall be available for taking corrective action and for compensating third parties

for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks or tank systems, or

(B) The local government owner or operator has a letter signed by the appropriate state attorney general stating that the use of the bonding authority will not increase the local government's debt beyond the legal debt ceilings established by the relevant state laws. The letter must also state that prior voter approval is not necessary before use of the bonding authority.

(4) To demonstrate that it meets the requirements of the local government fund, the chief financial officer of the local government owner or operator and/or guarantor must sign a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of local government owner or operator, or guarantor.] This letter is in support of the use of the local government fund mechanism to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s).

Underground storage tanks at the following facilities are assured by this local government fund mechanism: [List for each facility: the name and address of the facility where tanks are assured by the local government fund].

[Insert: "The local government fund is funded for the full amount of coverage required under section § 50193, Guam Administrative Rules and Regulations, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage." or "The local government fund is funded for five times the full amount of coverage required under § 50193, Guam Administrative Rules and Regulations, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage." or "A payment is made to the fund once every year for seven years until the fund is fully-funded and [name of local government owner or operator] has available bonding authority, approved through voter referendum, of an amount equal to the difference between the required amount of coverage and the amount held in the dedicated fund" or "A payment is made to the fund once every year for seven years until the fund is fully-funded and I have attached a letter signed by the State Attorney General stating that (1) the use of the bonding authority will not increase the local government's debt beyond the legal debt ceilings established by the relevant state laws and (2) that prior voter approval is not necessary before use of the bonding authority"].

The details of the local government fund are as follows:

Amount in Fund (market value of fund at close of last fiscal year):

[If fund balance is incrementally funded as specified in § 501107(3), Guam Administrative Rules and Regulations, insert:

Amount added to fund in the most recently completed fiscal year:

Number of years remaining in the pay-in period:]

A copy of the state constitutional provision, or local

government statute, charter, ordinance or order dedicating the fund is attached.

I hereby certify that the wording of this letter is identical to the wording specified in § 501107(4), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Date]
[Signature]
[Name]
[Title]

§ 501108. Substitution of Financial Assurance Mechanisms by Owner or operator.

(a) An owner or operator may substitute any alternate financial assurance mechanisms as specified in this subchapter, provided that at all times the owner or operator maintains an effective financial assurance mechanism or combination of mechanisms that satisfies the requirements of § 50193, Guam Administrative Rules and Regulations.

(b) After obtaining alternate financial assurance as specified in this Article, an owner or operator may cancel a financial assurance mechanism by providing notice to the provider of financial assurance.

§ 501109. Cancellation or Non-renewal by a Provider of Financial Assurance.

(a) Except as otherwise provided, a provider of financial assurance may cancel or fail to renew an assurance mechanism by sending a notice of termination by certified mail to the owner or operator.

(1) Termination of a local government guarantee, a guarantee, a surety bond, or a letter of credit may not occur until one hundred twenty days after the date on which the owner or operator receives the notice of termination, as evidenced by

the return receipt.

(2) Termination of insurance or risk retention coverage, except for non-payment or misrepresentation by the insured, may not occur until sixty days after the date on which the owner or operator receives the notice of termination, as evidenced by the return receipt. Termination for non-payment of premium or misrepresentation by the insured may not occur until a minimum of ten days after the date on which the owner or operator receives the notice of termination, as evidenced by the return receipt.

(b) If a provider of financial responsibility cancels or fails to renew for reasons other than incapacity of the provider as specified in § 501114, Guam Administrative Rules and Regulations, the owner or operator must obtain alternate coverage as specified in this Article within sixty days after receipt of the notice of termination. If the owner or operator fails to obtain alternate coverage within sixty days after receipt of the notice of termination, the owner or operator must notify the Administrator of such failure and submit:

(1) The name and address of the provider of financial assurance;

(2) The effective date of termination; and

(3) The evidence of the financial assurance mechanism subject to the termination maintained in accordance with § 501111(b), Guam Administrative Rules and Regulations.

§ 501110. Reporting by Owner or Operator.

(a) An owner or operator must submit the appropriate forms listed in § 501111(b), Guam Administrative Rules and Regulations documenting current evidence of financial responsibility to the director:

(1) Within thirty days after the owner or operator identifies a release from an underground storage tank or tank system required to be reported under §§ 50153 or 50161, Guam Administrative Rules and Regulations;

(2) If the owner or operator fails to obtain alternate coverage as required by this subchapter, within thirty days after the

owner or operator receives notice of:

(A) Commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a provider of financial assurance as a debtor;

(B) Suspension or revocation of the authority of a provider of financial assurance to issue a financial assurance mechanism;

(C) Failure of a guarantor to meet the requirements of the financial test; or

(D) Other incapacity of a provider of financial assurance; or

(3) As required by §§ 50195(g) and 501109(b).

(b) An owner or operator must certify compliance with the financial responsibility requirements of this subchapter as specified in the notification form submitted pursuant to 10 GCA Chapter 76, § 50134, Guam Administrative Rules and Regulations, or the permit applications under §§ 501324 and 501326, Guam Administrative Rules and Regulations.

(c) The Administrator may require an owner or operator to submit evidence of financial assurance as described in § 501111(b), Guam Administrative Rules and Regulations or other information relevant to compliance with this Article at any time.

§ 501111. Record Keeping.

(a) Owners or operators must maintain evidence of all financial assurance mechanisms used to demonstrate financial responsibility under this subchapter for an underground storage tank or tank system until released from the requirements of this Article under § 501113, Guam Administrative Rules and Regulations. An owner or operator must maintain such evidence at the underground storage tank or tank system site or the owner's or operator's place of work. Records maintained off-site must be made available upon request of the director.

(b) An owner or operator must maintain the following types of

evidence of financial responsibility:

(1) An owner or operator using an assurance mechanism specified in §§ 50195 to 50199 or § 501102 or §§ 501104 to 501107, Guam Administrative Rules and Regulations must maintain a copy of the instrument worded as specified.

(2) An owner or operator using a financial test or guarantee, or a local government financial test or a local government guarantee supported by the local government financial test must maintain a copy of the chief financial officer's letter based on year-end financial statements for the most recent completed financial reporting year. Such evidence must be on file no later than one hundred twenty days after the close of the financial reporting year.

(3) An owner or operator using a guarantee, surety bond, or letter of credit must maintain a copy of the signed standby trust fund agreement and copies of any amendments to the agreement.

(4) A local government owner or operator using a local government guarantee under § 501106(d), Guam Administrative Rules and Regulations must maintain a copy of the signed standby trust fund agreement and copies of any amendments to the agreement.

(5) A local government owner or operator using the local government bond rating test under § 501104, Guam Administrative Rules and Regulations must maintain a copy of its bond rating published within the last twelve months by Moody's or Standard & Poor's.

(6) A local government owner or operator using the local government guarantee under § 501106, Guam Administrative Rules and Regulations, where the guarantor's demonstration of financial responsibility relies on the bond rating test under § 501104, Guam Administrative Rules and Regulations must maintain a copy of the guarantor's bond rating published within the last twelve months by Moody's or Standard & Poor's.

(7) An owner or operator using an insurance policy or risk retention group coverage must maintain a copy of the signed insurance policy or risk retention group coverage policy, with the endorsement or certificate of insurance and any amendments to the agreements.

(8) An owner or operator using a local government fund under § 501107, Guam Administrative Rules and Regulations must maintain the following documents:

(A) A copy of the state constitutional provision or local government statute, charter, ordinance, or order dedicating the fund;

(B) Year-end financial statements for the most recent completed financial reporting year showing the amount in the fund. If the fund is established under § 501107(3), Guam Administrative Rules and Regulations using incremental funding backed by bonding authority, the financial statements must show the previous year's balance, the amount of funding during the year, and the closing balance in the fund; and

(C) If the fund is established under § 501107(3), Guam Administrative Rules and Regulations using incremental funding backed by bonding authority, the owner or operator must also maintain documentation of the required bonding authority, including either the results of a voter referendum (under § 501107(3)(A), Guam Administrative Rules and Regulations, or attestation by the state attorney general as specified under § 501107(3)(B), Guam Administrative Rules and Regulations).

(9) A local government owner or operator using the local government guarantee supported by the local government fund must maintain a copy of the guarantor's year-end financial statements for the most recent completed financial reporting year showing the amount of the fund.

(10) (A) An owner or operator using an assurance mechanism specified in §§ 50195 to 501107, Guam Administrative Rule and Regulations must maintain an updated copy of a certification of financial responsibility worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CERTIFICATION OF FINANCIAL RESPONSIBILITY

[Owner or operator] hereby certifies that it is in compliance with the requirements of Article 8 of Chapter 50, Guam Administrative Rules and Regulations.

The financial assurance mechanism(s) used to demonstrate financial responsibility under Article 8 of Chapter 50, Guam Administrative Rules and Regulations, is (are) as follows:

[For each mechanism, list the type of mechanism, name of issuer, mechanism number (if applicable), amount of coverage, effective period of coverage and whether the mechanism covers "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases".]

[Signature of owner or operator]
[Name of owner or operator]
[Title]
[Date]
[Signature of witness or notary]
[Name of witness or notary]
[Date]

(B) The owner or operator must update this certification whenever the financial assurance mechanism(s) used to demonstrate financial responsibility change(s).

§ 501112. Drawing of Financial Assurance Mechanisms.

(a) Except as specified in subsection (d), the Administrator shall require the guarantor, surety, or institution issuing a letter of credit to place the amount of funds stipulated by the Administrator, up to the limit of funds provided by the financial assurance mechanism, into the standby trust if:

(1) (A) The owner or operator fails to establish alternate financial assurance within sixty days after receiving notice of cancellation of the guarantee, surety bond, letter of credit, or, as applicable, other financial assurance mechanism; and

(B) The Administrator determines or suspects that a release from an underground storage tank or tank system covered by the mechanism has occurred and so notifies the owner or operator or the owner or operator has notified the Administrator pursuant to Articles 5 or 6 of a release from an underground storage tank or tank system covered by the mechanism; or

(2) The conditions of subsection (b)(1), (b)(2)(A), or (b)(2)(B) are satisfied.

(b) The Administrator may draw on a standby trust fund when:

(1) The Administrator makes a final determination that a release has occurred and immediate or long-term corrective action for the release is needed, and the owner or operator, after appropriate notice and opportunity to comply, has not conducted release response action as required under Article 6; or

(2) The Administrator has received either:

(A) Certification from the owner or operator and the

third-party liability claimant(s) and from attorneys representing the owner or operator and the third-party liability claimant(s) that a third-party liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CERTIFICATION OF A VALID CLAIM

The undersigned, as principals and as legal representatives of [insert: owner or operator] and [insert: name and address of third-party claimant], hereby certify that the claim of bodily injury [and/or] property damage caused by an accidental release arising from operating [owner's or operator's] underground storage tank should be paid in the amount of $[___].

[Signatures]
Owner or Operator
Attorney for Owner or Operator
(Notary)
Date
[Signatures]
Claimant(s)
Attorney(s) for Claimant(s)
(Notary)
Date

or;

(B) A valid final court order establishing a judgment against the owner or operator for bodily injury or property damage caused by an accidental release from an underground storage tank or tank system

covered by financial assurance under this subchapter and the director determines that the owner or operator has not satisfied the judgment.

(c) If the Administrator determines that the amount of corrective action costs and third-party liability claims eligible for payment under subsection (b) may exceed the balance of the standby trust fund and the obligation of the provider of financial assurance, the first priority for payment shall be corrective action costs necessary to protect human health and the environment. The Administrator shall pay third-party liability claims in the order in which the director receives certifications under subsection (b)(2)(A), and valid court orders under subsection (b)(2)(B).

(d) A governmental entity acting as guarantor under § 501106(e), Guam Administrative Rules and Regulations, the local government guarantee without standby trust, shall make payments as directed by the Administrator under the circumstances described in subsections (a), (b), and (c).

§ 501113. Release from the Requirements.

An owner or operator is no longer required to maintain financial responsibility under this subchapter for an underground storage tank or tank system after the tank or tank system has been permanently closed or undergoes a change-in-service or, if release response action is required, after release response action has been completed and the tank or tank system has been permanently closed or undergoes a change-in-service as required by Article 7.

§ 501114. Bankruptcy or Other Incapacity of Owner or Operator or Provider of Financial Assurance.

(a) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming an owner or operator as debtor, the owner or operator must notify the director by certified mail of such commencement and submit the

appropriate forms listed in § 501111(b), Guam Administrative Rules and Regulations documenting current financial responsibility.

(b) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a guarantor providing financial assurance as debtor, such guarantor must notify the owner or operator by certified mail of such commencement as required under the terms of the guarantee specified in § 50196, Guam Administrative Rules and Regulations.

(c) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a local government owner or operator as debtor, the local government owner or operator must notify the director by certified mail of such commencement and submit the appropriate forms listed in § 501111(b), Guam Administrative Rules and Regulations documenting current financial responsibility.

(d) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a guarantor providing a local government financial assurance as debtor, such guarantor must notify the local government owner or operator by certified mail of such commencement as required under the terms of the guarantee specified in § 501106, Guam Administrative Rules and Regulations.

(e) An owner or operator who obtains financial assurance by a mechanism other than the financial test of self-insurance will be deemed to be without the required financial assurance in the event of a bankruptcy or incapacity of its provider of financial assurance, or a suspension or revocation of the authority of the provider of financial assurance to issue a guarantee, insurance policy, risk retention group coverage policy, surety bond, or letter of credit. The owner or operator must obtain alternate financial assurance as specified in this Article within thirty days after receiving notice of such an event. If the owner or operator does not obtain alternate coverage within thirty days after such notification, the owner or operator must notify the Administrator.

§ 501115. Replenishment of Guarantee, Letters of Credit, or Surety

Bond.

(a) If at any time after a standby trust is funded upon the instruction of the Administrator with funds drawn from a guarantee, local government guarantee with standby trust, letter of credit, or surety bond, and the amount in the standby trust is reduced below the full amount of coverage required, the owner or operator shall by the anniversary date of the financial mechanism from which the funds were drawn:

(1) Replenish the value of financial assurance to equal the full amount of coverage required; or

(2) Acquire another financial assurance mechanism for the amount by which funds in the standby trust have been reduced.

(b) For purposes of this section, the full amount of coverage required is the amount of coverage to be provided by § 50193, Guam Administrative Rule and Regulations. If a combination of mechanisms was used to provide the assurance funds, which were drawn upon, replenishment shall occur by the earliest anniversary date among the mechanisms.

§ 501116 to § 501199. [Reserved.]

ARTICLE 9
LENDER LIABILITY

§ 501200. Definitions
§ 501201 to § 501209. [Reserved.]
§ 501210. Participation in Management
§ 501211 to § 501219. [Reserved.]
§ 501220. Ownership of an Underground Storage Tank or Underground Storage Tank System or Facility or Property on which an Underground Storage Tank or Underground Storage Tank System is Located
§ 501221 to § 501229. [Reserved.]

§ 501230. Operating an Underground Storage Tank or Underground Storage Tank System

§ 501231 to § 501239. [Reserved.]

§ 501200. Definitions.

(a) UST technical standards, as used in this Article, refers to the UST preventative and operating requirements under Articles 2, 3, 4, 7, and 10 and § 50150, Guam Administrative Rules and Regulations.

(b) Petroleum production, refining, and marketing.

(a) (1) "Petroleum production" means the production of crude oil or other forms of petroleum (as defined in § 50112, Guam Administrative Rules and Regulations) as well as the production of petroleum products from purchased materials.

(2) "Petroleum refining" means the cracking, distillation, separation, conversion, upgrading, and finishing of refined petroleum or petroleum products.

(3) "Petroleum marketing" means the distribution, transfer, or sale of petroleum or petroleum products for wholesale or retail purposes.

(c) "Indicia of ownership" means evidence of a secured interest, evidence of an interest in a security interest, or evidence of an interest in real or personal property securing a loan or other obligation, including any legal or equitable title or deed to real or personal property acquired through or incident to foreclosure. Evidence of such interests include, but are not limited to, mortgages, deeds of trust, liens, surety bonds and guarantees of obligations, title held pursuant to a lease financing transaction in which the lessor does not select initially the leased property (hereinafter "lease financing transaction"), and legal or equitable title obtained pursuant to foreclosure. Evidence of such interests also includes assignments, pledges, or other rights to or other forms of encumbrance against property that are held primarily to protect a security interest. A person is not required to hold title or a security interest in order to maintain indicia of ownership.

(d) A "holder" is a person who, upon October 13, 2015, or in the

future, maintains indicia of ownership (as defined in subsection (c)) primarily to protect a security interest (as defined in subsection (f)(1)) in a petroleum UST or UST system or facility or property on which a petroleum UST or UST system is located. A holder includes the initial holder (such as a loan originator); any subsequent holder (such as a successor-in-interest or subsequent purchaser of the security interest on the secondary market); a guarantor of an obligation, surety, or any other person who holds ownership indicia primarily to protect a security interest; or a receiver or other person who acts on behalf or for the benefit of a holder.

(e) A "borrower, debtor, or obligor" is a person whose UST or UST system or facility or property on which the UST or UST system is located is encumbered by a security interest. These terms may be used interchangeably.

(f) "Primarily to protect a security interest" means that the holder's indicia of ownership are held primarily for the purpose of securing payment or performance of an obligation.

(1) "Security interest" means an interest in a petroleum UST or UST system or in the facility or property on which a petroleum UST or UST system is located, created or established for the purpose of securing a loan or other obligation. Security interests include but are not limited to mortgages, deeds of trusts, liens, and title pursuant to lease financing transactions. Security interests may also arise from transactions such as sale and leasebacks, conditional sales, installment sales, trust receipt transactions, certain assignments, factoring agreements, accounts receivable financing arrangements, and consignments, if the transaction creates or establishes an interest in an UST or UST system or in the facility or property on which the UST or UST system is located, for the purpose of securing a loan or other obligation.

(2) "Primarily to protect a security interest", as used in this subchapter, does not include indicia of ownership held primarily for investment purposes, nor ownership indicia

held primarily for purposes other than as protection for a security interest. A holder may have other, secondary reasons for maintaining indicia of ownership, but the primary reason why any ownership indicia are held must be as protection for a security interest.

(g) "Operation" means, for purposes of this Article, the use, storage, filling, or dispensing of petroleum contained in an UST or UST system.

§ 501201 to § 501209. [Reserved.]

§ 501210. Participation in Management.

(a) The term "participating in the management of an UST or UST system" means that the holder is engaging in decision making control of, or activities related to, operation of the UST or UST system, as defined in this section. Actions that are participation in management:

(1) Participation in the management of an UST or UST system means, for purposes of this subchapter, actual participation by the holder in the management or control of decision making related to the operation of an UST or UST system. Participation in management does not include the mere c capacity or ability to influence or the unexercised right to control UST or UST system operations. A holder is participating in the management of the UST or UST system only if the holder either:

(A) Exercises decision making control over the operational (as opposed to financial or administrative) aspects of the UST or UST system, such that the holder has undertaken responsibility for all or substantially all of the management of the UST or UST system; or

(B) Exercises control at a level comparable to that of a manager of the borrower's enterprise, such that the holder has assumed or manifested responsibility for

the overall management of the enterprise encompassing the day-to-day decision making of the enterprise with respect to all, or substantially all, of the operational (as opposed to financial or administrative) aspects of the enterprise.

(2) Operational aspects of the enterprise relate to the use, storage, filling, or dispensing of petroleum contained in an UST or UST system, and include functions such as that of a facility or plant manager, operations manager, chief operating officer, or chief executive officer. Financial or administrative aspects include functions such as that of a credit manager, accounts payable/receivable manager, personnel manager, controller, chief financial officer, or similar functions. Operational aspects of the enterprise do not include the financial or administrative aspects of the enterprise, or actions associated with environmental compliance, or actions undertaken voluntarily to protect the environment in accordance with applicable requirements in this Article.

(b) Actions that are not participation in management pre-foreclosure:

(1) Actions at the inception of the loan or other transaction. No act or omission prior to the time that indicia of ownership are held primarily to protect a security interest constitutes evidence of participation in management within the meaning of this Article. A prospective holder who undertakes or requires an environmental investigation (which could include a site assessment, inspection, and/or audit) of the UST or UST system or facility or property on which the UST or UST system is located (in which indicia of ownership are to be held), or requires a prospective borrower to clean up contamination from the UST or UST system or to comply or come into compliance (whether prior or subsequent to the time that indicia of ownership are held primarily to protect a security interest) with any applicable law or regulation, is not by such action considered to be participating in the management of the UST or UST system or facility or property on which the UST or UST system is located.

(2) Loan policing and work out. Actions that are consistent with holding ownership indicia primarily to protect a security interest do not constitute participation in management for purposes of this subchapter. The authority for the holder to take such actions may, but need not, be contained in contractual or other documents specifying requirements for financial, environmental, and other warranties, covenants, conditions, representations or promises from the borrower. Loan policing and work out activities cover and include all such activities up to foreclosure, exclusive of any activities that constitute participation in management.

(A) Policing the security interest or loan.

(i) A holder who engages in policing activities prior to foreclosure will remain within the exemption provided that the holder does not together with other actions participate in the management of the UST or UST system as provided in § 501210(a), Guam Administrative Rules and Regulations. Such policing actions include, but are not limited to, requiring the borrower to clean up contamination from the UST or UST system during the term of the security interest; requiring the borrower to comply or come into compliance with applicable federal, state, and local environmental and other laws, rules, and regulations during the term of the security interest; securing or exercising authority to monitor or inspect the UST or UST system or facility or property on which the UST or UST system is located (including on-site inspections) in which indicia of ownership are maintained, or the borrower's business or financial condition during the term of the security interest; or taking other actions to adequately police the loan or security interest

(such as requiring a borrower to comply with any warranties, covenants, conditions, representations, or promises from the borrower).

(ii) Policing activities also include undertaking by the holder of UST environmental compliance actions and voluntary environmental actions taken in compliance with this chapter, provided that the holder does not otherwise participate in the management or daily operation of the UST or UST system as provided in §§ 501210(a) and 50130, Guam Administrative Rules and Regulations sections. Such allowable actions include, but are not limited to, release detection and release reporting, release response and corrective action, temporary or permanent closure of an UST or UST system, UST upgrading or replacement, and maintenance of corrosion protection. A holder who undertakes these actions must do so in compliance with the applicable requirements in this chapter. A holder may directly oversee these environmental compliance actions and voluntary environmental actions, and directly hire contractors to perform the work, and is not by such action considered to be participating in the management of the UST or UST system.

(B) Loan work out. A holder who engages in work out activities prior to foreclosure will remain within the exemption provided that the holder does not together with other actions participate in the management of the UST or UST system as provided in § 501210(a) Guam Administrative Rules and Regulations.

For purposes of this rule, "work out" refers to those actions by which a holder, at any time prior to foreclosure, seeks to prevent, cure, or mitigate a default by the borrower or obligor; or to preserve, or prevent the diminution of, the value of the security. Work out activities include, but are not limited to, restructuring or renegotiating the terms of the security interest; requiring payment of additional rent or interest; exercising forbearance; requiring or exercising rights pursuant to an assignment of accounts or other amounts owing to an obligor; requiring or exercising rights pursuant to an escrow agreement pertaining to amounts owing to an obligor; providing specific or general financial or other advice, suggestions, counseling, or guidance; and exercising any right or remedy the holder is entitled to by law or under any warranties, covenants, conditions, representations, or promises from the borrower.

(c) Foreclosure on an UST or UST system or facility or property on which an UST or UST system is located, and participation in management activities post-foreclosure.

(1) Foreclosure.

(A) Indicia of ownership that are held primarily to protect a security interest include legal or equitable title or deed to real or personal property acquired through or incident to foreclosure. For purposes of this Article, the term "foreclosure" means that legal, marketable or equitable title or deed has been issued, approved, and recorded, and that the holder has obtained access to the UST, UST system, UST facility, and property on which the UST or UST system is located, provided that the holder acted diligently to acquire marketable title or deed and to gain access to the UST, UST system, UST facility, and property on which the UST or UST system is located. The indicia

of ownership held after foreclosure continue to be maintained primarily as protection for a security interest provided that the holder undertakes to sell, re-lease an UST or UST system or facility or property on which the UST or UST system is located, held pursuant to a lease financing transaction (whether by a new lease financing transaction or substitution of the lessee), or otherwise divest itself of the UST or UST system or facility or property on which the UST or UST system is located, in a reasonably expeditious manner, using whatever commercially reasonable means are relevant or appropriate with respect to the UST or UST system or facility or property on which the UST or UST system is located, taking all facts and circumstances into consideration, and provided that the holder does not participate in management (as defined in § 501210(a), Guam Administrative Rules and Regulations prior to or after foreclosure.

(B) For purposes of establishing that a holder is seeking to sell, re-lease pursuant to a lease financing transaction (whether by a new lease financing transaction or substitution of the lessee), or divest in a reasonably expeditious manner an UST or UST system or facility or property on which the UST or UST system is located, the holder may use whatever commercially reasonable means as are relevant or appropriate with respect to the UST or UST system or facility or property on which the UST or UST system is located, or may employ the means specified in § 501210(c)(2), Guam Administrative Rules and Regulations). A holder that outbids, rejects, or fails to act upon a written, bona fide, firm offer of fair consideration for the UST or UST system or facility or property on which the UST or UST system is located, as provided in § 501210(c)(2), Guam Administrative

Rules and Regulations, is not considered to hold indicia of ownership primarily to protect a security interest.

(2) Holding foreclosed property for disposition and liquidation. A holder, who does not participate in management prior to or after foreclosure, may sell, re-lease, pursuant to a lease financing transaction (whether by a new lease financing transaction or substitution of the lessee), an UST or UST system or facility or property on which the UST or UST system is located, liquidate, wind up operations, and take measures, prior to sale or other disposition, to preserve, protect, or prepare the secured UST or UST system or facility or property on which the UST or UST system is located. A holder may also arrange for an existing or new operator to continue or initiate operation of the UST or UST system. The holder may conduct these activities without voiding the security interest exemption, subject to the requirements of this Article.

(A) A holder establishes that the ownership indicia maintained after foreclosure continue to be held primarily to protect a security interest by, within twelve months following foreclosure, listing the UST or UST system or the facility or property on which the UST or UST system is located, with a broker, dealer, or agent who deals with the type of property in question, or by advertising the UST or UST system or facility or property on which the UST or UST system is located, as being for sale or disposition on at least a monthly basis in either a real estate publication or a trade or other publication suitable for the UST or UST system or facility or property on which the UST or UST system is located, or a newspaper of general circulation (defined as one with a circulation over 10,000, or one suitable under any applicable federal, state, or local rules of court for publication required

by court order or rules of civil procedure) covering the location of the UST or UST system or facility or property on which the UST or UST system is located. For purposes of this provision, the twelve-month period begins to run from the date that the marketable title or deed has been issued, approved and recorded, and the holder has obtained access to the UST, UST system, UST facility and property on which the UST or UST system is located, provided that the holder acted diligently to acquire marketable title or deed and to obtain access to the UST, UST system, UST facility and property on which the UST or UST system is located. If the holder fails to act diligently to acquire marketable title or deed or to gain access to the UST or UST system, the twelve-month period begins to run from the date on which the holder first acquires either title to or possession of the secured UST or UST system, or facility or property on which the UST or UST system is located, whichever is later.

(B) A holder that outbids, rejects, or fails to act upon an offer of fair consideration for the UST or UST system or the facility or property on which the UST or UST system is located, establishes by such outbidding, rejection, or failure to act, that the ownership indicia in the secured UST or UST system or facility or property on which the UST or UST system is located are not held primarily to protect the security interest, unless the holder is required, in order to avoid liability under federal or state law, to make a higher bid, to obtain a higher offer, or to seek or obtain an offer in a different manner.

(i) Fair consideration, in the case of a holder maintaining indicia of ownership primarily to protect a senior security interest in the UST or

UST system or facility or property on which the UST or UST system is located, is the value of the security interest as defined in this section. The value of the security interest includes all debt and costs incurred by the security interest holder, and is calculated as an amount equal to or in excess of the sum of the outstanding principal (or comparable amount in the case of a lease that constitutes a security interest) owed to the holder immediately preceding the acquisition of full title (or possession in the case of a lease financing transaction) pursuant to foreclosure, plus any unpaid interest, rent, or penalties (whether arising before or after foreclosure). The value of the security interest also includes all reasonable and necessary costs, fees, or other charges incurred by the holder incident to work out, foreclosure, retention, preserving, protecting, and preparing, prior to sale, the UST or UST system or facility or property on which the UST or UST system is located, re-lease, pursuant to a lease financing transaction (whether by a new lease financing transaction or substitution of the lessee), of an UST or UST system or facility or property on which the UST or UST system is located, or other disposition. The value of the security interest also includes environmental investigation costs (which could include a site assessment, inspection, and/or audit of the UST or UST system or facility or property on which the UST or UST system is located), and release response and corrective action costs incurred under §§ 50151 to 50167, Guam Administrative

Rules and Regulations or any other costs incurred as a result of reasonable efforts to comply with any other applicable federal, state or local law or regulation; less any amounts received by the holder in connection with any partial disposition of the property and any amounts paid by the borrower (if not already applied to the borrower's obligations) subsequent to the acquisition of full title (or possession in the case of a lease financing transaction) pursuant to foreclosure. In the case of a holder maintaining indicia of ownership primarily to protect a junior security interest, fair consideration is the value of all outstanding higher priority security interests plus the value of the security interest held by the junior holder, each calculated as set forth in this subsection.

(ii) Outbids, rejects, or fails to act upon an offer of fair consideration means that the holder outbids, rejects, or fails to act upon within ninety days of receipt, a written, bona fide, firm offer of fair consideration for the UST or UST system or facility or property on which the UST or UST system is located received at any time after six months following foreclosure, as defined in § 501210(c), Guam Administrative Rules and Regulations. A "written, bona fide, firm offer" means a legally enforceable, commercially reasonable, cash offer solely for the foreclosed UST or UST system or facility or property on which the UST or UST system is located, including all material terms of the transaction, from a ready, willing, and able purchaser who demonstrates

to the holder's satisfaction the ability to perform. For purposes of this provision, the six-month period begins to run from the date that marketable title or deed has been issued, approved and recorded to the holder, and the holder has obtained access to the UST, UST system, UST facility and property on which the UST or UST system is located, provided that the holder was acting diligently to acquire marketable title or deed and to obtain access to the UST or UST system, UST facility and property on which the UST or UST system is located. If the holder fails to act diligently to acquire marketable title or deed or to gain access to the UST or UST system, the six-month period begins to run from the date on which the holder first acquires either title to or possession of the secured UST or UST system, or facility or property on which the UST or UST system is located, whichever is later.

(3) Actions that are not participation in management post-foreclosure. A holder is not considered to be participating in the management of an UST or UST system or facility or property on which the UST or UST system is located when undertaking actions under this chapter, provided that the holder does not otherwise participate in the management or daily operation of the UST or UST system as provided in §§ 501210(a) and 501230, Guam Administrative Rules and Regulations. Such allowable actions include, but are not limited to, release detection and release reporting, release response and corrective action, temporary or permanent closure of an UST or UST system, UST upgrading or replacement, and maintenance of corrosion protection. A holder who undertakes these actions must do so in compliance with the applicable requirements in this Article.

A holder may directly oversee these environmental compliance actions and voluntary environmental actions, and directly hire contractors to perform the work, and is not by such action considered to be participating in the management of the UST or UST system.

§ 501211 to § 501219. [Reserved.]

§ 501220. Ownership of an Underground Storage Tank or Underground Storage Tank System or Facility or Property on which an Underground Storage Tank or Underground Storage Tank System is Located.

Ownership of an UST or UST system or facility or property on which an UST or UST system is located. A holder is not an "owner" of a petroleum UST or UST system or facility or property on which a petroleum UST or UST system is located for purposes of compliance with the UST technical standards as defined in § 501200(a), Guam Administrative Rules and Regulations, the UST release response and corrective action requirements under §§ 50151 to 50167, Guam Administrative Rules and Regulations, and the UST financial responsibility requirements under §§ 50190 to 501111, Guam Administrative Rules and Regulations, provided the person:

(1) Does not participate in the management of the UST or UST system as defined in § 501210, Guam Administrative Rules and Regulations; and

(2) Does not engage in petroleum production, refining, and marketing as defined in § 501200(b), Guam Administrative Rules and Regulations.

§§ 501221 to 501229. [Reserved.]

§ 501230. Operating an Underground Storage Tank or Underground Storage Tank System.

(a) Operating an UST or UST system prior to foreclosure. A

holder, prior to foreclosure, as defined in § 501210(c), Guam Administrative Rules and Regulations, is not an "operator" of a petroleum UST or UST system for purposes of compliance with the UST technical standards as defined in § 501200(a), Guam Administrative Rules and Regulations, the UST corrective action requirements under §§ 50151 to 50167, Guam Administrative Rules and Regulations, and the UST financial responsibility requirements under §§ 50190 to 501111, Guam Administrative Rules and Regulations, provided that the holder is not in control of or does not have responsibility for the daily operation of the UST or UST system.

(b) Operating an UST or UST system after foreclosure. The following provisions apply to a holder who, through foreclosure, as defined in § 501210(c), Guam Administrative Rules and Regulations, acquires a petroleum UST or UST system or facility or property on which a petroleum UST or UST system is located.

(1) A holder is not an "operator" of a petroleum UST or UST system for purposes of compliance with this chapter if there is an operator, other than the holder, who is in control of or has responsibility for the daily operation of the UST or UST system, and who can be held responsible for compliance with applicable requirements of this chapter.

(2) If another operator does not exist, as provided for under paragraph (1), a holder is not an "operator" of the UST or UST system, for purposes of compliance with the UST technical standards as defined in § 501200(a), Guam Administrative Rules and Regulations, the UST corrective action requirements under §§ 50151 to 50167, Guam Administrative Rules and Regulations, and the UST financial responsibility requirements under §§ 50190 to 501111, Guam Administrative Rules and Regulations, provided that the holder:

(A) Empties all of its known USTs and UST systems within sixty calendar days after foreclosure, or another reasonable time period specified by the agency, so that no more than 2.5 centimeters (one

inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remains in the system; leaves vent lines open and functioning; and caps and secures all other lines, pumps, manways, and ancillary equipment; and

(B) Empties those USTs and UST systems that are discovered after foreclosure within sixty calendar days after discovery, or another reasonable time period specified by the agency, so that no more than 2.5 centimeters (one inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remains in the system; leaves vent lines open and functioning; and caps and secures all other lines, pumps, manways, and ancillary equipment.

(3) If another operator does not exist, as provided for under paragraph (1), in addition to satisfying the conditions under paragraph (2), the holder must either:

(A) Permanently close the UST or UST system in accordance with §§ 50171 to 50174, Guam Administrative Rules and Regulations, except § 50172(b), Guam Administrative Rules and Regulations; or

(B) Temporarily close the UST or UST system in accordance with the following applicable provisions of § 50170, Guam Administrative Rules and Regulations:

(i) Continue operation and maintenance of corrosion protection in accordance with § 50131, Guam Administrative Rules and Regulations;

(ii) Report suspected releases to the agency; and

(iii) Conduct a site assessment in accordance with § 50172(a), Guam Administrative Rules and Regulations if the UST system is temporarily

closed for more than twelve months and the UST system does not meet the applicable system design, construction, and installation requirements in Article 2, except that the spill and overfill equipment requirements do not have to be met. The holder must report any suspected releases to the agency.

For purposes of this provision, the twelve-month period begins to run from the date on which the UST system is emptied and secured under paragraph (2).

(4) The UST system can remain in temporary closure until a subsequent purchaser has acquired marketable title to the UST or UST system or facility or property on which the UST or UST system is located. Once a subsequent purchaser acquires marketable title to the UST or UST system or facility or property on which the UST or UST system is located, the purchaser must decide whether to operate or close the UST or UST system in accordance with applicable requirements in this chapter.

§§ 501231 to 501239. [Reserved.]

ARTICLE 10
OPERATOR TRAINING

§ 501240. General Requirement for All UST Systems
§ 501241. Designation of Class A, B, and C Operators
§ 501242. Requirements for Operator Training
§ 501243. Timing of Operator Training
§ 501244. Retraining
§ 501245. Documentation
§ 501246 to § 501249. [Reserved.]

§ 501240. General Requirement for All UST Systems.

All owners and operators of UST systems must ensure they have designated Class A, Class B, and Class C operators who meet the requirements of this subchapter.

§ 501241. Designation of Class A, B, and C Operators.

(a) UST system owners and operators must designate:

(1) At least one Class A and one Class B operator for each UST or group of USTs at a facility; and

(2) Each individual who meets the definition of Class C operator at the UST facility as a Class C operator.

(b) Separate individuals may be designated for each class of operator or an individual may be designated for more than one of the operator classes.

(c) Owners and operators shall submit written notice to the agency identifying the Class A and Class B operators for each UST or tank system in use or temporarily out of use no later than thirty (30) calendar days after an operator assumes the operator's responsibilities as a Class A or Class B operator. The notification must include the name of each operator, the date training was completed, the name and address of each facility where the USTs or tank systems for which the operator has been designated is located, and written verification from a training program approved or administered by the agency that the Class A and Class B operator for each UST or tank system has successfully completed operator training in the operator's class.

§ 501242. Requirements for Operator Training.

UST system owners and operators must ensure Class A, Class B, and Class C operators meet the requirements of this section. Any individual designated for more than one operator class must successfully complete the required training program or comparable examination according to the operator classes in which the individual is designated.

(1) Class A operators. Each designated Class A operator must

either be trained in accordance with subparagraphs (A) and (B) or pass a comparable examination in accordance with paragraph (5).

(A) At a minimum, the training must teach the Class A operators about the purpose, methods, and function of:

(i) Spill and overfill prevention;

(ii) Release detection;

(iii) Corrosion protection;

(iv) Emergency response;

(v) Product and equipment compatibility and demonstration;

(vi) Financial responsibility;

(vii) Notification and permitting;

(viii) Temporary and permanent closure;

(ix) Reporting, recordkeeping, testing, and inspections;

(x) Environmental and regulatory consequences of releases; and

(xi) Training requirements for Class B and Class C operators.

(B) At a minimum, the training program must evaluate Class A operators to determine these individuals have the knowledge and skills to make informed decisions regarding compliance and determine whether appropriate individuals are fulfilling the operation, maintenance, and recordkeeping requirements for UST systems in accordance with subparagraph (A).

(2) Class B operators. Each designated Class B operator must either receive training in accordance with subparagraphs (A) and (B) or pass a comparable examination, in accordance with paragraph (5).

(A) At a minimum, the training program for Class B operators must teach the Class B operator about the purpose, methods, and function of:

(i) Operation and maintenance, including components of UST systems, materials of UST system components, and methods of release detection and release prevention applied to UST components;
(ii) Spill and overfill prevention;
(iii) Release detection and related reporting;
(iv) Corrosion protection;
(v) Emergency response;
(vi) Product and equipment compatibility and demonstration;
(vii) Reporting, recordkeeping, testing, and inspections;
(ix) Environmental and regulatory consequences of releases; and
(x) Training requirements for Class C operators.

(B) At a minimum, the training program must evaluate Class B operators to determine these individuals have the knowledge and skills to implement applicable UST regulatory requirements in the field on the components of typical UST systems in accordance with subparagraph (A).

(3) Class C operators. Each designated Class C operator must either: be trained by a Class A or Class B operator in accordance with subparagraphs (A) and (B); complete a training program in accordance with subparagraphs (A) and (B); or pass a comparable examination, in accordance with paragraph (5).

(A) At a minimum, the training program for the Class C operator must teach the Class C operators to take appropriate actions (including notifying appropriate authorities) in response to emergencies or alarms caused by spills or releases resulting from the operation of the UST system.

(B) At a minimum, the training program must evaluate

Class C operators to determine these individuals have the knowledge and skills to take appropriate action (including notifying appropriate authorities) in response to emergencies or alarms caused by spills or releases from an underground storage tank system.

(4) Training program requirements. Any training program must meet the minimum requirements of this section, must incorporate an evaluation of operator knowledge through written examination, a practical demonstration, or other reasonable testing methods acceptable to the agency, and must be approved or administered by the agency. An operator training program may consist of in-class or on-line instruction and may include practical exercises.

(5) Comparable examination. A comparable examination must, at a minimum, test the knowledge of the Class A, Class B, or Class C operators in accordance with the requirements of paragraph (1), (2), or (3), as applicable. The acceptability of a comparable examination to meet the requirements of this section is determined by the agency. The agency may accept operator training verification from other states if the operator training is deemed by the agency to be equivalent to the requirements of this section.

§ 501243. Timing of Operator Training.

(a) An owner and operator must ensure that designated Class A, Class B, and Class C operators meet the requirements in § 501242 not later than October 13, 2015.

(b) Class A and Class B operators designated on or after October 13, 2015, must meet requirements in § 501242 within thirty (30) calendar days of assuming duties.

(c) Class C operators designated after October 13, 2015, must be trained before assuming duties of a Class C operator.

§ 501244. Retraining.

(a) Class A and class B operators shall be retrained every two (2) years. Class C operators shall be retrained every three hundred sixty-five (365) calendar days.
(b) Class A and Class B operators of UST systems determined by the agency to be out of compliance must complete a training program or comparable examination in accordance with requirements in § 501242. The training program or comparable examination must be developed or administered by the agency or an independent organization. An UST or tank system is out of compliance if the system:

(1) Meets any of the delivery prohibition criteria outlined in § 501429; or
(2) Is in significant violation of other requirements, such as temporary or permanent closure, tank registration, or financial responsibility, as determined by the director.

(c) UST system owners and operators must ensure Class A and Class B operators are retrained as required in subsection (b) no later than thirty (30) calendar days from the date the agency determines the facility is out of compliance except in one of the following situations:

(1) Class A and Class B operators take annual refresher training. Refresher training for Class A and Class B operators must cover all applicable requirements in § 501242;
(2) The agency, at its discretion, waives this retraining requirement for either the Class A or Class B operator or both.

§ 501245. Documentation.

Owners and operators of underground storage tank systems must maintain a list of designated Class A, Class B, and Class C operators and maintain records verifying that training and retraining, as applicable, have been completed, in accordance with § 50134 as follows:

(1) The list must:
    (A) Identify all Class A, Class B, and Class C operators

currently designated for the facility; and

(B) Include names, class of operator trained, date assumed duties, date each completed initial training, and any retraining.

(2) Records verifying completion of training or retraining must be a paper or electronic record for Class A, Class B, and Class C operators. The records, at a minimum, must identify name of trainee, date trained, operator training class completed, and list the name of the trainer or examiner and the training company name, address, and telephone number. Owners and operators must maintain these records for as long as Class A, Class B, and Class C operators are designated. The following requirements also apply to the following types of training:

(A) Records from classroom or field training programs (including Class C operator training provided by the Class A or Class B operator) or a comparable examination must, at a minimum, be signed by the trainer or examiner;

(B) Records from computer based training must, at a minimum, indicate the name of the training program and web address, if Internet based; and

(C) Records of retraining must include those areas on which the Class A or Class B operator has been retrained.

§ 501246 to § 501249. [Reserved.]

ARTICLE 11
RESERVED

§ 501250 to § 501299. [Reserved.]

ARTICLE 12
PERMITS AND VARIANCES

§ 501300 to § 501322. [Reserved]
§ 501323. Permit Required
§ 501324. Application for Permit
§ 501325. Permit
§ 501326. Permit Renewal
§ 501327. Action On and Timely Approval of Application for Permit
§ 501328. Permit Conditions
§ 501329. Modification of Permit
§ 501330. Revocation or Suspension of Permit
§ 501331. Change in Owner or Operation for a Permit
§ 501332. Variance Allowed
§ 501333. Variance Application
§ 501334. Maintenance of Permit or Variance
§ 501335. Fees
§ 501336 to § 501339. [Reserved.]

§ 501300 to § 501322. [Reserved]

§ 501323. Permit Required.

(a) No person shall install, operate, modify, or close an UST or tank system without first obtaining a permit from the Administrator.
(b) The Administrator shall approve an application for a permit only if the applicant has submitted sufficient information to the satisfaction of the Administrator that the technical, financial, and other requirements of this chapter are or can be met and the installation and operation of the UST or

tank system will be done in a manner that is protective of human health and the environment.
(c) A permit shall be issued only in accordance with 10 GCA Chapter 76, and this Article, and it shall be the duty of the permittee to ensure compliance with the law in the installation, operation, and closure of the UST or tank system.
(d) Issuance of a permit shall not relieve any person of the responsibility to comply fully with all applicable laws

§ 501324. Application for Permit.

(a) Every application for a permit shall be submitted to the agency on the "Application for an Underground Storage Tank Permit" form prescribed by the agency.
(b) A permit fee in accordance with § 501335 shall accompany each application for a permit.
(c) The applicant shall submit sufficient information to enable the Administrator to make a decision on the application. Information submitted shall include but not be limited to the following:

(1) General information on involved parties, including the landowner, UST owner, and UST operator; location of the property; and basic description of the UST or tank system;
(2) Age, size, precise location within the property, and use of each UST;
(3) Other information required in the form prescribed by the Administrator; and
(4) Other information as the agency may require.

(d) Every application shall be signed by the owner and the operator and shall constitute an acknowledgment that the applicants assume responsibility for the installation and operation of the UST or tank system in accordance with this Article and the conditions of the permit, if issued. Each signatory shall be:

(1) In the case of a corporation, a principal executive officer of at least the level of vice president, or a duly authorized

representative if that representative is responsible for the overall operation of the UST or tank system;

(2) In the case of a partnership, a general partner;

(3) In the case of a sole proprietorship, the proprietor; or

(4) In the case of a county, state, or federal entity, either a principal executive officer, ranking elected official, or other duly authorized employee.

§ 501325. Permit.

(a) Upon approval of an application for a permit to install and operate an UST or tank system, the Administrator shall issue a permit for a term of one (1) year except as noted in subsection (b).

(b) The owner or operator shall have one (1) year from the issuance of the permit to install an UST or tank system. If the installation is not completed within one (1) year, the permit expires and the owner or operator must apply for a new permit.

(c) The owner or operator must inform the agency at least seven (7) calendar days prior to performing the actual installation. The information shall include the permit number, name and address of the UST or tank system, the contact person, the contact person's phone number, and date and time of actual installation.

(d) The owner or operator must notify the agency within thirty (30) calendar days after the installation of the UST or tank system. The notification shall be submitted on the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator. If information submitted on the form has changed since the original application. The form must certify compliance with the following requirements:

(1) Installation of tanks and piping under § 50120(f);

(2) Cathodic protection of steel tanks and piping under § 50120(b) and (c);

(3) Financial responsibility under Article 8; and

(4) Release detection under §§ 50141 and 50142.

(e) The agency, where practicable and appropriate, may issue one (1)

permit to the owner or operator of an UST system for the purpose of combining all USTs, piping, and any ancillary equipment constituting that UST system under one permit, irrespective of the number of individual USTs, so long as that UST system is part of one reasonably contiguous physical location.

§ 501326. Permit Renewal.

(a) On application, a permit may be renewed for a term of one (1) year.
(b) A renewal fee in accordance with § 501335 shall accompany each application for renewal of a permit.
(c) An application for a renewal shall be received by the agency at least one hundred eighty (180) calendar days prior to the expiration of the existing permit and shall be submitted on the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator.

§ 501327. Action On and Timely Approval of Application for Permit.

(a) The Administrator need not act upon nor consider any incomplete application for a permit. An application shall be deemed complete only when:

(1) All required and requested information, including the application form, plans, specifications, and other information required by this Article have been submitted in a timely fashion;
(2) All fees have been paid as prescribed in § 501335; and
(3) The Administrator determines that the application is complete.

(b) The Administrator shall approve, approve with conditions, or deny a complete application for a permit to install or operate an UST or tank system or a permit renewal, modification, or transfer, required under this chapter. The Administrator shall notify the applicant of the agency's decision within one hundred eighty (180) calendar days of receipt of a complete application, as defined in subsection (a). Otherwise, a complete

application is deemed approved one hundred eighty (180) calendar days after it is received by the agency.

§ 501328. Permit Conditions.

The Administrator may impose conditions on a permit that the Administrator deems reasonably necessary to ensure compliance with this Article and any other relevant state requirement, including conditions relating to equipment, work practice, or operation. Conditions may include, but shall not be limited to, the requirement that devices for measurement or monitoring of regulated substances be installed and maintained and the results reported to the Administrator, all costs and expenses to be borne by the applicant.

§ 501329. Modification of Permit.

(a) The Administrator may modify a permit if there is a change that requires a modification to an existing permit. Changes requiring a permit modification shall include but not be limited to:

(1) The addition or removal of an UST from an UST system; and

(2) Any change to or modification of an UST or UST system which would otherwise place the existing UST or UST system out of compliance with this Article or an existing permit.

(b) An application for modification of a permit shall be made in writing to the agency and shall be accompanied by sufficient information on the planned renovation or modification to the UST or tank system to assist the agency in making a determination as to whether the application for modification should be denied or granted.

(c) Applications for a permit modification shall be received by the agency no later than sixty (60) calendar days prior to the occurrence of the event that prompted the application except that applications for change-in-service must be received by the agency at least thirty (30) calendar days before the owner or operator begins the change-in-service. Applications shall be submitted on the "Notification for Underground Storage Tanks

Permits" form prescribed by the Administrator.
(d) Owners and operators shall submit a permit application to add USTs or tank systems to an existing permit. If the Administrator approves the addition, the existing permit shall be terminated, and a new permit shall be issued which covers the additional USTs as well as the already-permitted USTs. The term of the new permit shall be for the remaining term of the original permit.

§ 501330. Revocation or Suspension of Permit.

The Administrator may revoke or suspend a permit if the Administrator finds any one of the following:

(1) There is a release or threatened release of regulated substances that the agency deems to pose an imminent and substantial risk to human health or the environment;
(2) The permittee violated a condition of the permit; or
(3) The permit was obtained by misrepresentation, or failure to disclose fully all relevant facts.

§ 501331. Change in Owner or Operator for a Permit.

(a) No permit to install, own, or operate an UST or tank system shall be transferable unless approved by the agency. Request for approval to transfer a permit from one owner to another owner must be made by the new owner. Request for approval to transfer a permit from one operator to another operator must be made by the owner.
(b) The transferred permit will be effective for the remaining life of the original permit.
(c) An application for the transfer shall be received by the agency at least thirty (30) calendar days prior to the proposed effective date of the transfer and shall be submitted on the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator.

§ 501332. Variance Allowed.

Provisions pursuant to this Article relating to USTs or tank systems which are more stringent than Title 40, Part 280 of the Code of Federal Regulations, published by the Office of the Federal Register, as amended as of July 1, 2017, may be varied by the Administrator in accordance with this Article. No variance may be less stringent than the federal requirements.

§ 501333. Variance Application.

(a) An application for a variance shall be submitted to the agency on the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator.
(b) A variance fee in accordance with § 501335 shall accompany each application for a variance.
(c) Every application shall be signed by the owner and operator, and the signature shall be by one of the following:

(1) In the case of a corporation, by a principal executive officer of at least the level of vice president, or a duly authorized representative if that representative is responsible for the overall operation of the UST or tank system;
(2) In the case of a partnership, by a general partner;
(3) In the case of a sole proprietorship, by the proprietor; or
(4) In the case of a county, state, or federal entity, by a principal executive officer, ranking elected official or other duly authorized employee.

(d) The Administrator shall approve, approve with conditions, or deny a complete application as required under this Article. The Administrator shall notify the applicant of the agency's decision, within one hundred eighty (180) calendar days of receipt of a complete application. Otherwise, a complete application is deemed approved one hundred eighty (180) calendar days after it is received by the agency.

§ 501334. Maintenance of Permit or Variance.

(a) Permits and variances, including application records, shall be

maintained at the location of the UST or tank system for which the permit was issued and shall be made available for inspection upon request of any duly authorized representative of the agency.
(b) No person shall willfully deface, alter, forge, counterfeit, or falsify any permit or variance.

§ 501335. Fees.

(a) Every applicant for a permit or a variance, or applicant for modification or renewal of a permit or variance, or applicant for a transfer of a permit, shall pay the applicable fees as set forth below:

Type of Application	Permit	Variance
Permit Application Fee per Tank (New Installation)	$500.00	$550.00
Permit to Operate Fee per Tank (Annual)	$250.00	
Permit to Transfer	$250.00	
Permit to Modify	$150.00	$200.00
Permit to Close	$500.00	$550.00
Permit to Install OWS	$500.00	$550.00
Permit to Close OWS	$500.00	
Request for Proposal (Copy)	$25.00	
Installer's Certification (2 years)	$150.00	
Operator's Certification A & B (2 years)	$150.00	
Operator's Re-Certification (2 years)	$100.00	

(b) Fees shall be submitted with the application and are nonrefundable.
(c) Fees shall be made payable to Guam Environmental Protection Agency UST-LUST Fund.
(d) If more than one type of application is combined, the highest

applicable fee will be assessed. However, a permit application and a variance application shall not be combined under one fee.

§ 501336 to § 501399. [Reserved.]

ARTICLE 13
ENFORCEMENT

§ 501400 to § 501420. [Reserved.]
§ 501421. Purpose.
§ 501422. Field Citation
§ 501423 to § 501428. [Reserved.]
§ 501429. Delivery, Deposit, and Acceptance Prohibition

§ 501400 to § 501420. [Reserved.]
§ 501421. Purpose.

The purpose of this Article is to create an enforcement program that facilitates the effective and expeditious resolution of violations of 10 GCA Chapter 76 and this Chapter.

§ 501422. Field Citations.

(a) Field citations may be issued for violations of 10 GCA Chapter 76 and this Chapter, that the agency deems appropriate for resolution through the issuance of a field citation. Nothing in this section requires the agency to elect one enforcement mechanism over another and the decision to proceed with one course of action over, or in conjunction with, another is within the discretion of the Administrator.
(b) The field citation is an offer to settle an allegation of noncompliance with this Chapter. If the owner or operator declines to accept the agency's offer to settle within the time period set forth in the field citation, the agency may bring administrative or civil enforcement action under 10 GCA Chapter 76.

(c) The field citation shall set forth sufficient facts to notify the recipient of the alleged violations, the applicable law, the proposed settlement amount, and the time period during which to respond.
(d) By returning the signed settlement agreement attached to the field citation and payment of the proposed settlement amount to the agency, the owner or operator will be deemed to have accepted the terms and conditions of the settlement offer.
(e) By signing the settlement agreement, the owner or operator waives his or her right to a contested case hearing pursuant to 10 GCA Chapter 76 and 5 GCA Chapter 9.

§ 501423 to § 501428. [Reserved.]

§ 501429. Delivery, Deposit, and Acceptance Prohibition.

(a) No person shall deliver to, deposit into, or accept a regulated substance into an UST or tank system that has been identified by the agency as ineligible for delivery, deposit, or acceptance.
(b) An UST or tank system shall be identified by the agency as ineligible for delivery, deposit, or acceptance by placement of a tag or other notice of ineligibility onto the fill pipe of the ineligible UST or tank system. If an owner or operator is not present at the facility at the time the underground storage tank is identified as ineligible, the agency may notify an employee at the facility at the time of identification in lieu of the owner or operator.
(c) No person shall remove, tamper with, destroy, or damage a tag or other notice of ineligibility affixed to any UST or tank system unless authorized to do so by the agency. Removal of a tag or other notice of ineligibility by the agency or person authorized by the agency shall occur only after the agency confirms that the conditions giving rise to the delivery prohibition have been corrected to the agency's satisfaction. The agency shall make this determination either at a hearing, if one is requested in accordance with this section, or as soon as practicable.
(d) Pursuant to this section, a tag or other notice of ineligibility may immediately be affixed to the fill pipe of an UST or tank system upon

finding by the agency of any of the following:

(1) Operating without a permit issued by the agency;
(2) Operating inconsistently with one or more conditions of a permit issued by the agency;
(3) Required spill prevention equipment is not installed or properly functioning or maintained;
(4) Required overfill protection equipment is not installed or properly functioning or maintained;
(5) Required release detection equipment is not installed or properly functioning or maintained;
(6) Required corrosion protection equipment is not installed or properly functioning or maintained;
(7) Failure to maintain financial responsibility; or
(8) Failure to protect a buried metal flexible connector from corrosion.

(e) An owner or operator of an UST or tank system designated by the agency to be ineligible shall be provided a hearing to contest the agency's determination of ineligibility within forty-eight (48) hours of the agency's receipt of a written request for a hearing by the owner or operator of the ineligible UST or tank system. The hearing shall modify or affirm the agency's determination of ineligibility and shall be conducted in accordance with 10 GCA Chapter 76 and 5 GCA Chapter 9, and the agency's rules of practice and procedure.

GUAM ADMINISTRATIVE RULES AND REGULATIONS (GAR)

TITLE 22

GUAM ENVIRONMENTAL POTECTION AGENCY

CHAPTER 50

GUAM UNDERGROUND STORAGE TANK REGULATIONS

Doc. No. 35GL-20-2341.*

GUAM ADMINISTRATIVE RULES AND REGULATIONS (GAR)

TITLE 22

GUAM ENVIRONMENTAL PROTECTION AGENCY (Guam EPA)

CHAPTER 50

GUAM UNDERGROUND STORAGE TANK REGULATIONS

Article 1. Scope and Installation Requirements for Partially Excluded UST Systems
Article 2. UST Systems: Design, Construction, and Installation
Article 3. General Operating Requirements
Article 4. Release Detection
Article 5. Release Reporting, Investigation, and Confirmation
Article 6. Release Response Action
Article 7. Out-of-Service UST Systems and Closure
Article 8. Financial Responsibility
Article 9. Lender Liability
Article 10. Operator Training
Article 11. Reserved
Article 12. Permits and Variances
Article 13. Enforcement

ARTICLE 1
SCOPE AND INSTALLATION REQUIREMENTS FOR PARTIALLY EXCLUDED UST SYSTEMS

§ 50101 to § 50109. [Reserved]
§ 50110. Applicability
§ 50111. Installation requirements for partially excluded UST systems

§ 50112. Definitions
§ 50113. Installation requirements for partially excluded UST systems--codes of practice
§ 50114 to § 50119. [Reserved.]

§ 50101 to § 50109. [Reserved]

§ 50110. Applicability.

(a) The requirements of this chapter apply to all owners and operators of an UST system as defined in § 50112 except as otherwise provided in this section.

(1) Airport hydrant fuel distribution systems, UST systems with field-constructed tanks, and UST systems that store fuel solely for use by emergency power generators must meet the requirements of this chapter as follows:

(A) Airport hydrant fuel distribution systems and UST systems with field-constructed tanks must meet all applicable requirements of this chapter, except that those installed before October 13, 2015 must meet the applicable requirements of Articles 4, 8, 10, and 12 no later than one year after October 13, 2015.

(B) UST systems that store fuel solely for use by emergency power generators must meet all applicable requirements of this chapter except that those installed before October 13, 2015 must meet the applicable requirements of Article 4 no later than one year after October 13, 2015.

(2) Any UST system listed in subsection (c) must meet the requirements of § 50111.

(b) Exclusions. The following UST systems are excluded from the requirements of this chapter:

(1) Any UST system holding hazardous wastes listed or identified under 10 Guam Code Annotated (GCA), Chapter 76, Underground Storage of Regulated Substances, or the

rules adopted thereunder, or Subtitle C of the Solid Waste Disposal Act, or a mixture of such hazardous waste and other regulated substances;

(2) Any wastewater treatment tank system that is part of a wastewater treatment facility regulated under Section 402 or 307(b) of the Clean Water Act;

(3) Equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks;

(4) Any UST system that contains a de minimis concentration of regulated substances; and

(5) Any emergency spill or overflow containment UST system that is expeditiously emptied after use.

(c) Partial Exclusions. Articles 2, 3, 4, 5, 7, 10, and 12 do not apply to:

(1) Wastewater treatment tank systems not covered under subsection (b)(2);

(2) Aboveground storage tanks associated with:

(A) Airport hydrant fuel distribution systems; and

(B) UST systems with field-constructed tanks;

(3) Any UST systems containing radioactive material that are regulated under the Atomic Energy Act of 1954 (42 U.S.C. 2011 and following); and

(4) Any UST system that is part of an emergency generator system at nuclear power generation facilities licensed by the Nuclear Regulatory Commission and subject to Nuclear Regulatory Commission requirements regarding design and quality criteria, including but not limited to 10 C.F.R. Part 50.

(5) Owners and operators of oil-water separators and decontamination tanks must notify the Agency and obtain a permit to install a new flow through process and decontamination tank in accordance with Article 2, as applicable. Owners and operators of flow-through process tanks and decontamination tanks are not required to obtain, renew, or pay for an annual fee to operate the tank and are not required to comply with Articles 3, 4, 5, and 10.

(6) Owners and operators of oil-water separators and decontamination tanks shall pay for a fee to install and close the system, and to conduct site assessment upon closure in accordance with §§ 50171 and 50172 of Article 7; and

(7) Owners and operator of oil-water separators and decontamination tanks that are installed after October 13, 2018, must be designed, constructed, and installed in accordance with Article 2, unless directed otherwise by the Agency.

§ 50111. Installation requirements for partially excluded UST systems.

(a) Owners and operators must install an UST system listed in section 50110 (c)(1), (3), or (4) storing regulated substances (whether of single or double wall construction) that meets the following requirements:

(1) Will prevent releases due to corrosion or structural failure for the operational life of the UST system;

(2) Is cathodically protected against corrosion, constructed of non-corrodible material, steel clad with a non-corrodible material, or designed in a manner to prevent the release or threatened release of any stored substance; and

(3) Is constructed or lined with material that is compatible with the stored substance.

(b) Notwithstanding subsection (a), an UST system without corrosion protection may be installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life. Owners and operators must maintain records that demonstrate compliance with the requirements of this subsection for the remaining life of the tank.

§ 50112. Definitions.

When used in this Article, the following terms have the meanings given below:

(a) "Aboveground release" means any release to the surface of the

land or to surface water. This includes, but is not limited to, releases from the aboveground portion of an UST system and aboveground releases associated with overfills and transfer operations as the regulated substance moves to or from an UST system.

(b) "Airport hydrant fuel distribution system" (also called "airport hydrant system") means an UST system which fuels aircraft and operates under high pressure with large diameter piping that typically terminates into one or more hydrants (fill stands). The airport hydrant system begins where fuel enters one or more tanks from an external source such as a pipeline, barge, rail car, or other motor fuel carrier.

(c) "Ancillary equipment" means any devices including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps used to distribute, meter, or control the flow of regulated substances to and from an UST.

(d) "Belowground release" means any release to the subsurface of the land and to groundwater. This includes, but is not limited to, releases from the belowground portions of an underground storage tank system and belowground releases associated with overfills and transfer operations as the regulated substance moves to or from an underground storage tank.

(e) "Beneath the surface of the ground" means beneath the ground surface or otherwise covered with earthen materials.

(f) "Cathodic protection" is a technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell. For example, a tank system can be cathodically protected through the application of either galvanic anodes or impressed current.

(g) "Cathodic protection tester" means a person who can demonstrate an understanding of the principles and measurements of all common types of cathodic protection systems as applied to buried or submerged metal piping and tank systems. At a minimum, such persons must have education and experience in soil resistivity, stray current, structure-to-soil potential, and component electrical isolation measurements of buried metal piping and tank systems.

(h) "Class A operator" means the individual who has primary responsibility to operate and maintain the UST system in accordance with

applicable requirements established by the agency. The Class A operator typically manages resources and personnel, such as establishing work assignments, to achieve and maintain compliance with regulatory requirements.

(i) "Class B operator" means the individual who has day-to-day responsibility for implementing applicable regulatory requirements established by the agency. The Class B operator typically implements in-field aspects of operation, maintenance, and associated recordkeeping for the UST system.

(j) "Class C operator" means the individual responsible for initially addressing emergencies presented by a spill or release from an UST system. The Class C operator typically controls or monitors the dispensing or sale of regulated substances.

(k) "Compatible" means the ability of two or more substances to maintain their respective physical and chemical properties upon contact with one another for the design life of the tank system under conditions likely to be encountered in the UST.

(l) "Connected piping" means all underground piping including valves, elbows, joints, flanges, and flexible connectors attached to a tank system through which regulated substances flow. For the purpose of determining how much piping is connected to any individual UST system, the piping that joins two UST systems should be allocated equally between them.

(m) "Consumptive use" with respect to heating oil means consumed on the premises.

(n) "Containment sump" means a liquid-tight container that protects the environment by containing leaks and spills of regulated substances from piping, dispensers, pumps, and related components in the containment area. Containment sumps may be single walled or secondarily contained and located at the top of tank (tank top or submersible turbine pump sump), underneath the dispenser (under-dispenser containment sump), or at other points in the piping run (transition or intermediate sump).

(o) "Corrosion expert" means a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and

mathematics acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Such a person must be accredited or certified as being qualified by the National Association of Corrosion Engineers or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control of buried or submerged metal piping systems and metal tanks.

(p) "Dielectric material" means a material that does not conduct direct electrical current. Dielectric coatings are used to electrically isolate UST systems from the surrounding soils. Dielectric bushings are used to electrically isolate portions of the UST system (e.g., tank from piping).

(q) "Dispenser" means equipment located aboveground that dispenses regulated substances from the UST system.

(r) "Dispenser system" means the dispenser and the equipment necessary to connect the dispenser to the underground storage tank system. The equipment necessary to connect the dispenser to the underground storage tank system includes check valves, shear valves, unburied risers or flexible connectors, or other transitional components that are underneath the dispenser and connect the dispenser to the underground piping.

(s) "Electrical equipment" means underground equipment that contains dielectric fluid that is necessary for the operation of equipment such as transformers and buried electrical cable.

(t) "EPA" means the United States Environmental Protection Agency.

(u) "Excavation zone" means the volume containing the tank system and backfill material bounded by the ground surface, walls, and floor of the pit and trenches into which the UST system is placed at the time of installation.

(v) "Existing UST system" means an UST system for which installation commenced on or before December 22, 1988.

(w) "Exposure assessment" means a determination regarding the extent of exposure of, or potential for exposure of, individuals to regulated substances from a release from an UST or tank system. An exposure assessment shall be based on factors such as the nature and extent of

contamination, the existence of or potential for pathways of human exposure (including ground or surface water contamination, air emissions, dermal exposure, soil ingestion, and food chain contamination), the size of the community or communities within the likely pathways of exposure, an analysis of expected human exposure levels with respect to short-term and long-term health effects associated with identified contaminants, and any available recommended exposure or tolerance limits for the contaminants.

(x) "Farm tank" is a tank located on a tract of land devoted to the production of crops or raising animals, including fish, and associated residences and improvements. A farm tank must be located on the farm property. Farm includes fish hatcheries, rangeland, and nurseries with growing operations.

(y) "Field-constructed tank" means a tank constructed in the field. For example, a tank constructed of concrete that is poured in the field, or a steel or fiberglass tank primarily fabricated in the field is considered field-constructed.

(z) "Flow-through process tank" is a tank that forms an integral part of a production process through which there is a steady, variable, recurring, or intermittent flow of materials during the operation of the process. Flow-through process tanks do not include tanks used for the storage of materials prior to their introduction into the production process or for the storage of finished products or by-products from the production process.

(aa) "Free product" refers to a regulated substance that is present as a non-aqueous phase liquid (e.g., liquid not dissolved in water).

(bb) "Gathering lines" means any pipeline, equipment, facility, or building used in the transportation of oil or gas during oil or gas production or gathering operations.

(cc) "Hazardous substance" means a hazardous substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 as amended, except any substance regulated as a hazardous waste under Subtitle C of the Solid Waste Disposal Act.

(dd) "Hazardous substance UST system" means an underground storage tank system that contains a hazardous substance or any mixture of

such substances and petroleum, and that is not a petroleum UST system.
(ee) "Heating oil" means petroleum that is No. 1, No. 2, No. 4—light, No. 4—heavy, No. 5—light, No. 5—heavy, and No. 6 technical grades of fuel oil; other residual fuel oils (including Navy Special Fuel Oil and Bunker C); and other fuels when used as substitutes for one of these fuel oils. Heating oil is typically used in the operation of heating equipment, boilers, or furnaces.
(ff) "Hydraulic lift tank" means a tank holding hydraulic fluid for a closed-loop mechanical system that uses compressed air or hydraulic fluid to operate lifts, elevators, and other similar devices.
(gg) "Liquid trap" means sumps, well cellars, and other traps used in association with oil and gas production, gathering, and extraction operations (including gas production plants), for the purpose of collecting oil, water, and other liquids. These liquid traps may temporarily collect liquids for subsequent disposition or reinjection into a production or pipeline stream, or may collect and separate liquids from a gas stream.
(hh) "Maintenance" means the normal operational upkeep to prevent an underground storage tank system from releasing product.
(ii) "Motor fuel" means a complex blend of hydrocarbons typically used in the operation of a motor engine, such as motor gasoline, aviation gasoline, No. 1 or No. 2 diesel fuel, or any blend containing one or more of these substances (e.g., motor gasoline blended with alcohol).
(jj) "Noncommercial purposes" with respect to motor fuel means not for resale.
(kk) "On the premises where stored" with respect to heating oil means UST systems located on the same property where the stored heating oil is used.
(ll) "Operational life" refers to the period beginning when installation of the tank system has commenced until the time the tank system is properly closed under Article 7.
(mm) "Operator" means any person in control of, or having responsibility for, the daily operation of the UST system.
(nn) "Overfill release" is a release that occurs when a tank is filled beyond its capacity, resulting in a discharge of the regulated substance to the environment.

(oo) "Owner" means:

1. In the case of an UST system in use on November 8, 1984, or brought into use after that date, any person who owns an UST system used for storage, use, or dispensing of regulated substances; and
2. In the case of any UST system in use before November 8, 1984, but no longer in use on that date, any person who owned such UST immediately before the discontinuation of its use.

(pp) "Permit" means written authorization, as provided for in 10 GCA, Chapter 76, § 76117, from the Administrator to install or operate an UST or tank system. A permit authorizes owners or operators to install and operate an UST or tank system in a manner, or to do an act, not forbidden by 10 GCA Chapter 76, or by this chapter, but requiring review by the Administrator.

(qq) "Person" means an individual, trust, estate, firm, joint stock company, corporation (including a government corporation), partnership, association, commission, consortium, joint venture, commercial entity, the state or a county, the United States government, federal agency, interstate body, or any other legal entity.

(rr) "Petroleum" means petroleum, including crude oil or any fraction thereof, that is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

(ss) "Petroleum UST system" means an underground storage tank system that contains petroleum or a mixture of petroleum with de minimis quantities of other regulated substances. Such systems include those containing motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

(tt) "Pipe" or "piping" means a hollow cylinder or tubular conduit that is constructed of non-earthen materials.

(uu) "Pipeline facilities" (including gathering lines) means pipe rights-of-way and any associated equipment, facilities, or buildings.

(vv) "Regulated substance" means hazardous substances, petroleum, and any other substance designated by the agency that, when released into the environment, may present substantial danger to human health,

welfare, or the environment. The term regulated substance includes but is not limited to petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons, such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

(ww) "Release" means any spilling, leaking, emitting, discharging, escaping, leaching, or disposing from an UST system into groundwater, surface water, or subsurface soils.

(xx) "Release detection" means determining whether a release of a regulated substance has occurred from the UST system into the environment or a leak has occurred into the interstitial space between the UST system and its secondary barrier or secondary containment around it.

(yy) "Repair" means to restore to proper operating condition a tank, pipe, spill prevention equipment, overfill prevention equipment, corrosion protection equipment, release detection equipment or other UST system component that has caused a release of product from the UST system or has failed to function properly.

(zz) "Replaced" means

(1) For an underground storage tank – to remove an underground storage tank and install another underground storage tank; or

(2) For connected piping – to remove 50 percent or more of connected piping and install other piping, excluding connectors, connected to a single underground storage tank. For underground storage tanks with multiple piping runs, this definition applies independently to each piping run.

(aaa) "Residential tank" is a tank located on property used primarily for dwelling purposes.

(bbb) "Secondary containment" or "secondarily contained" means a release prevention and release detection system for a tank or piping. This system has an inner and outer barrier with an interstitial space that is monitored for leaks. This term includes containment sumps when used for interstitial monitoring of piping.

(ccc) "Septic tank" is a water-tight covered receptacle designed to receive or process, through liquid separation or biological digestion, the sewage discharged from a building sewer. The effluent from such receptacle is distributed for disposal through the soil and settled solids

and scum from the tank are pumped out periodically and hauled to a treatment facility.

(ddd) "Storm water collection system" or "wastewater collection system" means piping, pumps, conduits, and any other equipment necessary to collect and transport the flow of surface water run-off resulting from precipitation, or domestic, commercial, or industrial wastewater to and from retention areas or any areas where treatment is designated to occur. The collection of storm water and wastewater does not include treatment except where incidental to conveyance.

(eee) "Surface impoundment" is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials) that is not an injection well.

(fff) "Tank" is a stationary device designed to contain an accumulation of regulated substances and constructed of non-earthen materials (e.g., concrete, steel, plastic) that provide structural support.

(ggg) "Temporary closure" or "temporarily closed" means that owners and operators do not deposit regulated substances into the UST or tank system nor dispense regulated substances from the UST or tank system for sixty days or longer, except for UST systems that store fuel solely for use by emergency power generators and UST systems with field-constructed tanks. For UST systems that store fuel solely for use by emergency power generators and UST systems with field-constructed tanks, "temporary closure" or "temporarily closed" means that the UST or tank system is empty, as defined in section 50170(a), and owners and operators do not deposit regulated substances into the UST or tank system for sixty (60) calendar days or longer.

(hhh) "Under-dispenser containment" or "UDC" means containment underneath a dispenser system designed to prevent leaks from the dispenser and piping within or above the UDC from reaching soil, groundwater, and surface water.

(iii) "Underground area" means an underground room, such as a basement, cellar, shaft or vault, providing enough space for physical inspection of the exterior of the tank situated on or above the surface of the floor.

(jjj) "Underground release" means any belowground or below water release.

(kkk) "Underground storage tank" or "UST" means any one or combination of tanks (including underground pipes connected thereto) that is used to contain an accumulation of regulated substances, and the volume of which (including the volume of underground pipes connected thereto) is ten (10%) percent or more beneath the surface of the ground. This term does not include any:

(1) Farm or residential tank of one thousand one hundred gallons or less capacity used for storing motor fuel for noncommercial purposes;

(2) Tank used for storing heating oil for consumptive use on the premises where stored;

(3) Septic tank;

(4) Pipeline facility (including gathering lines):

(A) Which is regulated under 49 U.S.C. chapter 601; or

(B) Which is an intrastate pipeline facility regulated under state laws as provided in 49 U.S.C. chapter 601, and which is determined by the Secretary of Transportation to be connected to a pipeline, or to be operated or intended to be capable of operating at pipeline pressure or as an integral part of a pipeline;

(5) Surface impoundment, pit, pond, or lagoon;

(6) Storm water or wastewater collection system;

(7) Liquid trap or associated gathering lines directly related to oil or gas production and gathering operations; or

(8) Storage tank situated in an underground area (such as a basement, cellar, mine working, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

The term underground storage tank or UST does not include any pipes connected to any tank which is described in paragraphs (1) to (8).

(jjj) "Upgrade" means the addition or retrofit of some systems such as cathodic protection, lining, or spill and overfill controls to improve the ability of an underground storage tank system to prevent the release of

product.
(kkk) "UST system" or "tank system" means an underground storage tank, connected underground piping, underground ancillary equipment, and containment system, if any.
(lll) "Variance" means a special written authorization from the Administrator to own, install, or operate an UST or tank system in a manner deviating from, or to do an act that deviates from, the requirements of this chapter that are more stringent than 40 C.F.R. Part 280.
(mmm) "Wastewater treatment tank" means a tank that is designed to receive and treat an influent wastewater through physical, chemical, or biological methods.

§ 50113. Installation requirements for partially excluded UST systems--codes of practice.

(a) The following current codes of practice may be used as guidance for complying with § 50111:

(1) NACE International Standard Practice SP 0285, "External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection";

(2) NACE International Standard Practice SP 0169, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems";

(3) American Petroleum Institute Recommended Practice 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems"; or

(4) Steel Tank Institute Recommended Practice R892, "Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems".

§ 50114 to § 50119. [Reserved.]

ARTICLE 2
UST SYSTEMS: DESIGN, CONSTRUCTION, AND INSTALLATION

§ 50120. Performance Standards for UST Systems
§ 50121. Upgrading of UST Systems
§ 50122. [Reserved.]
§ 50123. Tank and Piping Design for Hazardous Substances UST System
§ 50124. Secondary Containment Design
§ 50125. Under-Dispenser Containment
§ 50126. Performance Standards and Design for UST System – Code of Practice
§ 50127 to § 50129. [Reserved.]

§ 50120. Performance Standards for UST Systems.

(a) In order to prevent releases due to structural failure, corrosion, or spills and overfills for as long as the UST system is used to store regulated substances, owners and operators of UST systems must meet all applicable requirements of this Article. UST systems must meet the requirements of this section as follows:

(1) UST systems installed after December 22, 1988, other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must meet the requirements of this section, except as specified in this Article.

(2) Airport hydrant fuel distribution systems and UST systems with field-constructed tanks installed after October 13, 2015 must meet the requirements of this section.

(b) Tanks. Each tank must be properly designed, constructed, and installed, and any portion underground that routinely contains product must be protected from corrosion, in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

(1) The tank is constructed of fiberglass-reinforced plastic; or

(2) The tank is constructed of steel and cathodically protected in

the following manner:

(A) The tank is coated with a suitable dielectric material;

(B) Field-installed cathodic protection systems are designed by a corrosion expert;

(C) Impressed current systems are designed to allow determination of current operating status as required in § 50131(3); and

(D) Cathodic protection systems are operated and maintained in accordance with § 50131 or according to guidelines established by the agency; or

(3) The tank is constructed of steel and clad or jacketed with a non-corrodible material; or

(4) The tank is constructed of metal without additional corrosion protection measures provided that:

(A) The tank is installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life; and

(B) Owners and operators maintain records that demonstrate compliance with the requirements of subparagraph (A) for the remaining life of the tank; or

(5) The tank construction and corrosion protection are determined by the agency to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than paragraphs (1) to (4).

(c) Piping. The piping that routinely contains regulated substances and is in contact with the ground must be properly designed, constructed, installed, and protected from corrosion in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

(1) The piping is constructed of a non-corrodible material; or

(2) The piping is constructed of steel and cathodically protected in the following manner:

(A) The piping is coated with a suitable dielectric material;

(B) Field-installed cathodic protection systems are designed by a corrosion expert;

(C) Impressed current systems are designed to allow determination of current operating status as required in § 50131(3); and

(D) Cathodic protection systems are operated and maintained in accordance with § 50131 or guidelines established by the agency; or

(3) The piping is constructed of metal without additional corrosion protection measures provided that:

(A) The piping is installed at a site that is determined by a corrosion expert to not be corrosive enough to cause it to have a release due to corrosion during its operating life; and

(B) Owners and operators maintain records that demonstrate compliance with the requirements of subparagraph (A) for the remaining life of the piping; or

(4) The piping construction and corrosion protection are determined by the agency to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than the requirements in paragraphs (1) to (3).

(d) Spill and overfill prevention equipment.

(1) Except as provided in paragraphs (2) and (3), to prevent spilling and overfilling associated with product transfer to the UST system, owners and operators must use the following spill and overfill prevention equipment:

(A) Spill prevention equipment that will prevent release of product to the environment when the transfer hose is detached from the fill

pipe (for example, a spill catchment basin); and

(B) Overfill prevention equipment that will:

(i) Automatically shut off flow into the tank when the tank is no more than ninety-five (95%) percent full;

(ii) Alert the transfer operator when the tank is no more than ninety (90%) percent full by restricting the flow into the tank or triggering a high-level alarm; or

(iii) Restrict flow thirty (30) minutes prior to overfilling, alert the transfer operator with a high-level alarm one minute before overfilling, or automatically shut off flow into the tank so that none of the fittings located on top of the tank are exposed to product due to overfilling.

(2) Owners and operators are not required to use the spill and overfill prevention equipment specified in paragraph (1) if:

(A) Alternative equipment is used that is determined by the agency to be no less protective of human health and the environment than the equipment specified in paragraph (1)(A) or (B); or

(B) The UST system is filled by transfers of no more than twenty-five (25) gallons at one time.

(3) Flow restrictors used in vent lines may not be used to comply with paragraph (1)(B) when overfill prevention is installed or replaced after October 13, 2015.

(4) Overfill prevention methods that rely on the use of alarms must have the alarms clearly labeled “overfill alarm” and located where the delivery person can clearly see and hear the alarm in order to immediately stop delivery of the product.

(5) Spill and overfill prevention equipment must be periodically

tested or inspected in accordance with § 50135.

(e) Installation. The UST system must be properly installed in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and in accordance with the manufacturer's instructions.

(f) Certification of installation. All owners and operators must ensure that one or more of the following methods of certification, testing, or inspection is used to demonstrate compliance with subsection (e) by providing a certification of compliance on the "Certification of Underground Storage Tank Installation" form prescribed by the Administrator and in accordance with § 501325(d).

(1) The installer has been certified by the tank and piping manufacturers;

(2) The installer has been certified or licensed by the agency;

(3) The installation has been inspected and certified by a licensed professional engineer with education and experience in UST system installation;

(4) The installation has been inspected and approved by the agency;

(5) All work listed in the manufacturer's installation checklists has been completed and the checklists maintained; or

(6) The owner and operator have complied with another method for ensuring compliance with subsection (e) that is determined by the agency to be no less protective of human health and the environment.

(g) Secondary containment.

(1) UST systems installed after April 11, 2016, other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must be provided with secondary containment that meets the requirements of § 50124, except for suction piping that meets the requirements of § 50141(b)(6).

(2) Airport hydrant fuel distribution systems and UST systems with field-constructed tanks must be provided with

secondary containment that meets the requirements of § 50124, except for:

(A) Suction piping that meets the requirements of § 50141(b)(6);

(B) Piping associated with UST systems with field constructed tanks greater than 50,000 gallons; and

(C) Piping associated with airport hydrant systems.

§ 50121. Upgrading of UST Systems.

(a) All UST systems must comply with one of the following requirements:

(1) UST system performance standards in § 50120(b) to (d);

(2) For airport hydrant fuel distribution systems and UST systems with field-constructed tanks installed on or before October 13, 2015:

(A) The system performance standards in § 50120(b) and (c); and

(B) Not later than October 13, 2018, the system performance standards under § 50120(d); or

(3) Closure requirements under Article 7.

§ 50122. [Reserved.]

§ 50123. Tank and Piping Design for Hazardous Substances UST System.

Owners and operators of hazardous substance UST systems must provide secondary containment for tanks and underground piping that meets the requirements of § 50124

§ 50124. Secondary Containment Design.

(a) Secondary containment systems must be designed, constructed, and installed to:

(1) Contain regulated substances leaked from the primary

containment until they are detected and removed;

(2) Prevent the release of regulated substances to the environment at any time during the operational life of the UST system; and

(3) Be checked for evidence of a release at least every thirty (30) calendar days.

(b) Double-walled tanks must be designed, constructed, and installed to:

(1) Contain a leak from any portion of the inner tank within the outer wall; and

(2) Detect the failure of the inner wall.

(c) External liners (including vaults) must be designed, constructed, and installed to:

(1) Contain one hundred (100%) percent of the capacity of the largest tank within its boundary;

(2) Prevent precipitation and groundwater intrusion from interfering with the ability to contain or detect a leak or release of regulated substances; and

(3) Surround the UST completely to effectively prevent lateral and vertical migration of regulated substances.

§ 50125. Under-Dispenser Containment.

(a) Dispenser systems installed on or after April 11, 2016, must have under-dispenser containment that meets the requirements in this subsection. Under-dispenser containment requirement must:

A. Be liquid-tight on its sides, bottom, and at any penetrations;

B. Be compatible with the substance conveyed by the piping;

C. Allow for visual inspection and access to the components in the containment system; and

D. Be monitored for leaks from the dispenser system with a sensing device that signals the operator of the presence of regulated substances.

§ 50126. Performance Standards and Design for UST System - Code of Practice.

(a) The following current codes of practice may be used to comply with § 50120(b)(1):

(1) Underwriters Laboratories Standard 1316, "Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures"; or

(2) Underwriter's Laboratories of Canada S615, "Standard for Reinforced Plastic Underground Tanks for Flammable and Combustible Liquids".

(b) The following current codes of practice may be used to comply with § 50120(b)(2):

(1) Steel Tank Institute "Specification STI–P3® Specification and Manual for External Corrosion Protection of Underground Steel Storage Tanks";

(2) Underwriters Laboratories Standard 1746, "External Corrosion Protection Systems for Steel Underground Storage Tanks";

(3) Underwriters Laboratories of Canada S603, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids", and S603.1, "Standard for External Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids", and S631, "Standard for Isolating Bushings for Steel Underground Tanks Protected with External Corrosion Protection Systems";

(4) Steel Tank Institute Standard F841, "Standard for Dual Wall Underground Steel Storage Tanks"; or

(5) NACE International Standard Practice SP 0285, "External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection", and Underwriters Laboratories Standard 58, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids".

(c) The following current codes of practice may be used to comply with § 50120(b)(3):

(1) Underwriters Laboratories Standard 1746, "External

Corrosion Protection Systems for Steel Underground Storage Tanks";

(2) Steel Tank Institute ACT–100® Specification F894, "Specification for External Corrosion Protection of FRP Composite Steel Underground Storage Tanks";

(3) Steel Tank Institute ACT–100–U® Specification F961, "Specification for External Corrosion Protection of Composite Steel Underground Storage Tanks"; or

(4) Steel Tank Institute Specification F922, "Steel Tank Institute Specification for Permatank®".

(d) The following current codes of practice may be used to comply with § 50120(c)(1):

(1) Underwriters Laboratories Standard 971, "Nonmetallic Underground Piping for Flammable Liquids"; or

(2) Underwriters Laboratories of Canada Standard S660, "Standard for Nonmetallic Underground Piping for Flammable and Combustible Liquids".

(e) The following current codes of practice may be used to comply with § 50120(c)(2):

(1) American Petroleum Institute Recommended Practice 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems";

(2) Underwriters Laboratories Subject 971A, "Outline of Investigation for Metallic Underground Fuel Pipe";

(3) Steel Tank Institute Recommended Practice R892, "Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems";

(4) NACE International Standard Practice SP 0169, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems"; or

(5) NACE International Standard Practice SP 0285, "External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection".

(f) Tank and piping system installation practices and procedures

described in the following current codes of practice may be used to comply with the requirements of § 50120(e):

(1) American Petroleum Institute Publication 1615, "Installation of Underground Petroleum Storage System";

(2) Petroleum Equipment Institute Publication RP100, "Recommended Practices for Installation of Underground Liquid Storage Systems"; or

(3) National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code" and Standard 30A, "Code for Motor Fuel Dispensing Facilities and Repair Garages".

(g) When designing, constructing, and installing airport hydrant systems and UST systems with field-constructed tanks, owners and operators may use military construction criteria, such as Unified Facilities Criteria (UFC) 3–460–01, "Petroleum Fuel Facilities".

§ 50127 to § 50129. [Reserved.]

ARTICLE 3
GENERAL OPERATING REQUIREMENTS

§ 50130. Spill and Overfill Control
§ 50131. Operation and Maintenance of Corrosion Protection
§ 50132. Compatibility
§ 50133. Repairs Allowed
§ 50134. Notification, Reporting, and Recordkeeping
§ 50135. Periodic Testing of Spill Prevention Equipment and Containment Sumps Used for Interstitial Monitoring of Piping and Periodic Inspection of Overfill Prevention Equipment
§ 50136. Periodic Operation and Maintenance Walkthrough Inspections
§ 50137. Periodic Inspection and Maintenance of Under-Dispenser Containment Sensing Devices
§ 50138. General Operating Requirement – Codes of Practice

§ 50139. [Reserved.]

§ 50130. Spill and Overfill Control.

(a) Owners and operators must ensure that releases due to spilling or overfilling do not occur. The owner and operator must ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling.
(b) The owner and operator must report, investigate, and clean up any spills and overfills in accordance with § 50153.

§ 50131. Operation and Maintenance of Corrosion Protection.

All owners and operators of metal UST systems with corrosion protection must comply with the following requirements to ensure that releases due to corrosion are prevented until the UST system is permanently closed or undergoes a change-in-service pursuant to § 50171:

(1) All corrosion protection systems must be operated and maintained to continuously provide corrosion protection to the metal components of that portion of the tank and piping that routinely contain regulated substances and are in contact with the ground.

(2) All UST systems equipped with cathodic protection systems must be inspected for proper operation by a qualified cathodic protection tester in accordance with the following requirements:

(A) Frequency. All cathodic protection systems must be tested within six (6) months of installation and at least every three (3) years thereafter; and

(B) Inspection criteria. The criteria that are used to determine that cathodic protection is adequate as required by this section must be in accordance with a code of practice developed by a nationally recognized association.

(3) UST systems with impressed current cathodic protection systems must also be inspected every sixty (60) calendar days to ensure the equipment is operating properly.

(4) For UST systems using cathodic protection, records of the operation of the cathodic protection must be maintained, in accordance with § 50134, to demonstrate compliance with the performance standards in this section. These records must provide the following:

(A) The results of the last three (3) inspections required in paragraph (3); and

(B) The results of testing from the last two (2) inspections required in paragraph (2).

§ 50132. Compatibility.

(a) Owners and operators must use an UST system made of or lined with materials that are compatible with the substance stored in the UST system.
(b) Owners and operators must notify the agency at least thirty (30) days prior to switching to a regulated substance containing greater than ten (10%) percent ethanol, greater than twenty (20%) percent biodiesel, or any other regulated substance identified by the agency. In addition, owners and operators with UST systems storing these regulated substances must meet one of the following:

(1) Demonstrate compatibility of the UST system (including the tank, piping, containment sumps, pumping equipment, release detection equipment, spill equipment, and overfill equipment). Owners and operators may demonstrate compatibility of the UST system by using one of the following options:

(A) Certification or listing of UST system equipment or components by a nationally recognized, independent testing laboratory for use with the regulated substance stored; or

(B) Equipment or component manufacturer approval. The manufacturer's approval must be in writing,

indicate an affirmative statement of compatibility, specify the range of biofuel blends the equipment or component is compatible with, and be from the equipment or component manufacturer; or

(2) Use another option determined by the agency to be no less protective of human health and the environment than the options listed in paragraph (1).

(c) Owners and operators must maintain records in accordance with § 50134(d) documenting compliance with subsection (b) for as long as the UST system is used to store the regulated substance.

§ 50133. Repairs Allowed.

(a) Owners and operators of UST systems must ensure that repairs will prevent releases due to structural failure or corrosion as long as the UST system is used to store regulated substances. The repairs must meet the following requirements:

(1) Repairs to UST systems must be properly conducted in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory;

(2) Repairs to fiberglass-reinforced plastic tanks may be made by the manufacturer's authorized representatives or in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory;

(3) Metal pipe sections and fittings that have released product as a result of corrosion or other damage must be replaced. Non-corrodible pipes and fittings may be repaired in accordance with the manufacturer's specifications;

(4) Prior to the return to use of a repaired UST system, any repaired USTs must pass a tank tightness test in accordance with § 50143(3);

(5) Prior to the return to use of a repaired UST system, any repaired piping that routinely contains product must pass a line tightness test in accordance with § 50144(2);

(6) Prior to return to use of a repaired UST system, repairs to

secondary containment areas of tanks and piping used for interstitial monitoring, containment sumps used for interstitial monitoring of piping, and containment walls must have the secondary containment tested for integrity using vacuum, pressure, or liquid methods in accordance with requirements developed by the manufacturer, a code of practice developed by a nationally recognized association or independent testing laboratory, or requirements established by the agency;

(7) Within six (6) months following the repair of any cathodically protected UST system, the cathodic protection system must be tested in accordance with § 50131(2) and(3) to ensure that it is operating properly; and

(8) Prior to the return to use of repaired spill or overfill prevention equipment, the repaired spill or overfill prevention equipment must be tested or inspected, as appropriate, in accordance with § 50135 to ensure it is operating properly.

(b) UST system owners and operators must maintain records, in accordance with § 50134, of each repair until the UST system is permanently closed or undergoes a change-in-service pursuant to § 50171.

§ 50134. Notification, Reporting, and Recordkeeping.

(a) Notification. Owners and operators shall notify the agency of any of the following changes in information relating to an UST or tank system by submitting the "Notification for Underground Storage Tanks" form prescribed by the Administrator:

(1) Planned permanent closure or change-in-service, scheduled excavation work for permanent closure or change-in-service, or completed closure or change-in-service;

(2) Temporary closure or the return to currently-in-use status;

(3) Changes in product dispensing method, dispenser, or under dispenser containment;

(4) Changes in financial responsibility mechanism;

(5) Changes in leak detection method;
(6) Changes in spill and overfill prevention method;
(7) Changes in piping;
(8) Changes in type of regulated substances stored;
(9) Changes in corrosion protection mechanism; and
(10) Installation of or changes in secondary containment.

(b) Timing of notification. Owners and operators shall submit the notifications required in subsection (a) within thirty (30) calendar days following any of the changes requiring notification, except that:

(1) Notification of planned permanent closure or change-in-service must be received by the agency at least thirty (30) calendar days before commencement of excavation work for closure or change-in-service;
(2) Notification of scheduled excavation work for permanent closure or change-in-service must be received by the agency at least seven (7) calendar days before the scheduled work date;
(3) Notification of change in type of regulated substance stored to a regulated substance containing greater than ten (10%) percent ethanol or greater than twenty (20%) percent biodiesel must be received by the agency at least thirty (30) calendar days before the change; and
(4) Notification of temporary closure must be received by the agency within thirty (30) calendar days of the UST system having met the definition of temporary closure in § 50112.

(c) Reporting. Owners and operators must submit the following information to the agency:

(1) Reports of all releases including suspected releases § 50150 and § 50152, spills and overfills § 50153, and confirmed releases § 50161;
(2) Release response actions planned or taken, including initial abatement measures § 50162, initial site characterization § 50163, free product removal § 50164, investigation of soil and groundwater cleanup § 50165, and corrective action plan § 50166.

(3) Quarterly release response reports § 50165.2;
(4) Current evidence of financial responsibility as required in § 501110; and
(5) Notice of changes in Designated Class A or B Operators § 501241(c).

(d) Recordkeeping. Owners and operators must maintain the following information:

(1) A corrosion expert's analysis of site corrosion potential if corrosion protection equipment is not used § 50120(b)(4); § 50120(c)(3);
(2) Documentation of operation of corrosion protection equipment § 50131(4);
(3) Documentation of compatibility for UST systems § 50132(c);
(4) Documentation of UST system repairs § 50133(b);
(5) Documentation of compliance for spill and overfill prevention equipment and containment sumps used for interstitial monitoring of piping § 50135(b);
(6) Documentation of periodic walkthrough inspections § 50136(b);
(7) Documentation of compliance with under-dispenser containment sensing device requirements § 50137(b);
(8) Documentation of compliance with release detection requirements § 50145;
(9) Results of the site investigation conducted at permanent closure or change-in-service § 50174;
(10) Documentation of operator training § 501245;
(11) Permits or variances or both, including all documentation, as specified in § 501334(a); and
(12) Evidence of current financial assurance mechanisms used to demonstrate financial responsibility § 501111.

(e) Availability and maintenance of records.

(1) Owners and operators must keep the required records at the UST site or an alternative location approved by the agency.
(2) Owners and operators must make the records immediately available for inspection by the agency at the UST site.

(3) Permanent closure records required under § 50174 may be maintained or submitted to the agency as provided in § 50174.

(f) Owners and operators of UST systems must cooperate fully with inspections, monitoring, and testing conducted by the agency, as well as requests by the agency for document submission, testing, and monitoring by the owner or operator pursuant to 10 GCA, Chapter 76.

§ 50135. Periodic Testing of Spill Prevention Equipment and Containment Sumps Used for Interstitial Monitoring of Piping and Periodic Inspection of Overfill Prevention Equipment.

(a) Owners and operators of UST systems with spill and overfill prevention equipment and containment sumps used for interstitial monitoring of piping must meet these requirements by October 13, 2018 to ensure the equipment is operating properly and will prevent releases to the environment:

(1) Spill prevention equipment (such as a catchment basin, spill bucket, or other spill containment device) must prevent releases to the environment by meeting one of the following:

(A) The equipment is double walled and the integrity of both walls is periodically monitored at a frequency not less than once every thirty (30) calendar days. Owners and operators must begin meeting the requirements of subparagraph (B) and conduct a test within thirty (30) calendar days of discontinuing periodic monitoring of this equipment; or

(B) The spill prevention equipment is tested at least once every three hundred sixty-five (365) calendar days to ensure the equipment is liquid tight by using vacuum, pressure, or liquid testing in accordance with one of the following criteria:

(i) Requirements developed by the manufacturer. (Note: Owners and operators may use this option only if the manufacturer has developed

requirements.);

(ii) Code of practice developed by a nationally recognized association or independent testing laboratory; or

(iii) Requirements determined by the agency to be no less protective of human health and the environment than the requirements listed in clauses (i) and (ii).

(2) Containment sumps used for interstitial monitoring of piping must prevent releases to the environment by meeting one of the following:

(A) The equipment is double walled and the integrity of both walls is periodically monitored at a frequency not less than annually. Owners and operators must begin meeting the requirements of subparagraph (B) and conduct a test within thirty (30) calendar days of discontinuing periodic monitoring of this equipment; or

(B) The containment sumps used for interstitial monitoring of piping are tested at least once every three (3) years to ensure the equipment is liquid tight by using vacuum, pressure, or liquid testing in accordance with one of the criteria in paragraph (1)(B)(i) to (iii).

(3) Overfill prevention equipment must be inspected at least once every three years. At a minimum, the inspection must ensure that overfill prevention equipment is set to activate at the correct level specified in § 50120(d) and will activate when regulated substance reaches that level. Inspections must be conducted in accordance with one of the criteria in paragraph (1)(B)(i) to (iii).

(b) Owners and operators must maintain records as follows (in accordance with § 50134 for spill prevention equipment, containment sumps used for interstitial monitoring of piping, and overfill prevention equipment:

(1) All records of testing or inspection must be maintained for three (3) years; and

(2) For spill prevention equipment not tested every three hundred sixty-five (365) calendar days and containment sumps used for interstitial monitoring of piping not tested every three (3) years, documentation showing that the prevention equipment is double walled and the integrity of both walls is periodically monitored must be maintained for as long as the equipment is periodically monitored.

§ 50136. Periodic Operation and Maintenance Walkthrough Inspections.

(a) To properly operate and maintain UST systems, not later than October 13, 2018, owners and operators must conduct walkthrough inspections that, at a minimum, check the following equipment as specified below:

(1) Every thirty (30) calendar days:

(A) Spill prevention equipment:

(i) Visually check for damage;

(ii) Remove liquid or debris;

(iii) Check for and remove obstructions in the fill pipe;

(iv) Check the fill cap to make sure it is securely on the fill pipe; and

(v) For double walled spill prevention equipment with interstitial monitoring, check for a leak in the interstitial area; and

(B) Release detection equipment:

(i) Check to make sure the release detection equipment is operating with no alarms or other unusual operating conditions present; and

(ii) Ensure records of release detection testing are reviewed and current;

(2) Annually:

(A) Containment sumps:

(i) Visually check for damage, leaks to the containment area, or releases to the

environment;

(ii) Remove liquid (in contained sumps) or debris; and

(iii) For double walled sumps with interstitial monitoring, check for a leak in the interstitial area; and

(B) Hand held release detection equipment: Check devices such as tank gauge sticks or groundwater bailers for operability and serviceability;

(3) For UST systems receiving deliveries at intervals greater than every thirty (30) calendar days, spill prevention equipment may be checked in accordance with paragraph (1)(A) prior to each delivery; and

(4) For airport hydrant systems, at least once every thirty (30) days if confined space entry according to the Occupational Safety and Health Administration is not required or at least annually if confined space entry is required (see 29 C.F.R. Part 1910):

A. Hydrant pits:

(i) Visually check for any damage;

(ii) Remove any liquid or debris; and

(iii) Check for any leaks; and

B. Hydrant piping vaults: Check for any hydrant piping leaks.

(b) Owners and operators must maintain records, in accordance with § 50134, of operation and maintenance walkthrough inspections for three (3) years. Records must include a list of each area checked, whether each area checked was acceptable or needed action taken, a description of actions taken to correct an issue, and delivery records if spill prevention equipment is checked less frequently than every thirty (30) calendar days due to infrequent deliveries.

§ 50137. Periodic Inspection and Maintenance of Under-Dispenser Containment Sensing Devices.

(a) Sensing devices for under-dispenser containment required by § 50125

must:

(1) Be operated and maintained in accordance with one of the following:
  (A) The manufacturer's instructions;
  (B) A code of practice developed by a nationally recognized association or independent testing laboratory; or
  (C) Requirements determined by the agency to be no less protective of human health and the environment than those in subparagraphs (A) and (B).

(2) Be inspected for proper operation, and electronic and mechanical components tested, at least annually.

(b) UST system owners and operators must maintain records in accordance with § 50134 demonstrating compliance with subsection (a). Written documentation of all inspection, testing, and maintenance must be maintained for at least three (3) years. All records that the UDC sensor and connected equipment are designed to produce must be maintained for at least three (3) years after the record is generated.

§ 50138. General Operating Requirements - Codes of Practice.

(a) The following current codes of practice may be used to comply with § 50130(a):

(1) the transfer procedures described in National Fire Protection Association Standard 385;

(2) "Standard for Tank Vehicles for Flammable and Combustible Liquids" or American Petroleum Institute Recommended Practice 1007;

(3) "Loading and Unloading of MC 306/DOT 406 Cargo Tank Motor Vehicles"; or

(4) Further guidance on spill and overfill prevention appears in American Petroleum Institute Recommended Practice 1621, "Bulk Liquid Stock Control at Retail Outlets".

(b) The following current codes of practice may be used to comply with § 50131(2):

(1) NACE International Test Method TM 0101, "Measurement Techniques Related to Criteria for Cathodic Protection of Underground Storage Tank Systems";

(2) NACE International Test Method TM0497, "Measurement Techniques Related to Criteria for Cathodic Protection on Underground or Submerged Metallic Piping Systems";

(3) Steel Tank Institute Recommended Practice R051, "Cathodic Protection Testing Procedures for STI–P3® USTs";

(4) NACE International Standard Practice SP 0285, "External Control of Underground Storage Tank Systems by Cathodic Protection"; or

(5) NACE International Standard Practice SP 0169, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems".

(c) The following current code of practice may be useful in complying with § 50132:

(1) American Petroleum Institute Recommended Practice 1626, "Storing and Handling Ethanol and Gasoline-Ethanol Blends at Distribution Terminals and Filling Stations".

(d) The following current codes of practice may be used to comply with § 50133(a)(1):

(1) National Fire Protection Association Standard 30, "Flammable and Combustible Liquids Code";

(2) American Petroleum Institute Recommended Practice RP 2200, "Repairing Crude Oil, Liquified Petroleum Gas, and Product Pipelines";

(3) American Petroleum Institute Recommended Practice RP 1631, "Interior Lining and Periodic Inspection of Underground Storage Tanks";

(4) National Fire Protection Association Standard 326, "Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair";

(5) National Leak Prevention Association Standard 631, Chapter A, "Entry, Cleaning, Interior Inspection, Repair, and Lining of Underground Storage Tanks";

(6) Steel Tank Institute Recommended Practice R972, "Recommended Practice for the Addition of Supplemental Anodes to STI–P3® Tanks";

(7) NACE International Standard Practice SP 0285, "External Control of Underground Storage Tank Systems by Cathodic Protection"; or

(8) Fiberglass Tank and Pipe Institute Recommended Practice T–95–02, "Remanufacturing of Fiberglass Reinforced Plastic (FRP) Underground Storage Tanks".

(e) The following current codes of practice may be used to comply with § 50133(a)(6):

(1) Steel Tank Institute Recommended Practice R012, "Recommended Practice for Interstitial Tightness Testing of Existing Underground Double Wall Steel Tanks";

(2) Fiberglass Tank and Pipe Institute Protocol, "Field Test Protocol for Testing the Annular Space of Installed Underground Fiberglass Double and Triple-Wall Tanks with Dry Annular Space"; or

(3) Petroleum Equipment Institute Recommended Practice RP1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities".

(f) The following current code of practice may be used to comply with § 50135(a)(1),(2),(3) and 50137(a)(1)(B):

(1) Petroleum Equipment Institute Publication RP1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities".

§ 50139. [Reserved.]

ARTICLE 4
RELEASE DETECTION

§ 50140. General Requirements for all UST Systems

§ 50141. Requirements for Petroleum UST Systems
§ 50142. Requirements for Hazardous Substance UST Systems
§ 50143. Methods of Release Detection for Tanks
§ 50144. Methods of Release Detection for Piping
§ 50145. Release Detection Recordkeeping
§ 50146. Release Detection – Code of Practice
§ 50147 to § 50149. [Reserved.]

§ 50140. **General Requirements for all UST Systems.**

(a) Owners and operators of UST systems must provide a method, or combination of methods, of release detection that:

(1) Can detect a release from any portion of the tank and the connected underground piping that routinely contains product;

(2) Utilizes equipment compatible with the regulated substances being stored;

(3) Is installed, calibrated, operated, and maintained in accordance with the manufacturer's instructions;

(4) Is operated and maintained, and electronic and mechanical components are tested for proper operation, in accordance with one of the following: manufacturer's instructions; a code of practice developed by a nationally recognized association or independent testing laboratory; or requirements determined by the agency to be no less protective of human health and the environment than the requirements of paragraphs (a)(1) to (3) of this section. All maintenance and service of the release detection equipment must be conducted by a technician with current certification or training appropriate to the equipment serviced. A test of the proper operation must be performed at least every three hundred sixty-five (365) calendar days, or in a time frame recommended by the equipment manufacturer, whichever is more frequent. Beginning October 13, 2018, as applicable to the facility, the test must cover at a minimum the following

components and criteria:

(A) Automatic tank gauge and other controllers: test alarm; verify system configuration; test battery backup;

(B) Probes and sensors: inspect for residual buildup; ensure floats move freely; ensure shaft is not damaged; ensure cables are free of kinks and breaks; test alarm operability and communication with controller;

(C) Automatic line leak detector: test operation to meet criteria in § 50144(1) by simulating a leak;

(D) Vacuum pumps and pressure gauges: ensure proper communication with sensors and controller; and

(E) Hand-held electronic sampling equipment associated with groundwater and vapor monitoring: ensure proper operation; and

(5) Meets the performance requirements in § 50143 or § 50144, as applicable, with any performance claims and their manner of determination described in writing by the equipment manufacturer or installer. In addition, the methods listed in § 50143 (2), (3), (4), (8), (9), and (10) and § 50144(1), (2), and (4) must be capable of detecting the leak rate or quantity specified for that method in the corresponding section of the rule with a probability of detection of 0.95 and a probability of false alarm of 0.05.

(b) When a release detection method operated in accordance with the performance standards in § 50143 or § 50144 indicates a release may have occurred, owners and operators must notify the agency in accordance with Article 5.

(c) Any UST system that cannot apply a method of release detection that complies with the requirements of this Article must complete the change-in-service or closure procedures in Article 7.

§ 50141. Requirements for Petroleum UST Systems.

(a) Tanks. Owners and operators of petroleum UST systems must provide release detection for tanks as follows:

(1) UST systems other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks:

(A) Tanks installed on or before April 11, 2016, must be monitored for releases at least every thirty (30) calendar days using one of the methods listed in § 50143(4) to (9), except that:

(i) UST systems that meet the performance standards in § 50120, and the monthly inventory control requirements in § 50143(1) or (2), may use tank tightness testing (conducted in accordance with § 50143(3) at least every five (5) years until ten (10) years after the tank was installed; and

(ii) Tanks with capacity of 550 gallons or less and tanks with a capacity of 551 to 1,000 gallons that meet the tank diameter criteria in § 50143(2) may use manual tank gauging (conducted in accordance with § 50143(2).

(B) Tanks installed after April 11, 2016 must be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7).

(2) Airport hydrant fuel distribution systems and UST systems with field-constructed tanks with a capacity less than or equal to 50,000 gallons:

(A) Tanks installed before October 13, 2015 must be monitored for releases at least every thirty (30) calendar days using one of the methods listed in § 50143(4) to (9), except that:

(i) UST systems that meet the performance standards in § 50120 and the monthly inventory control requirements in § 50143(1) or (2), may use tank tightness testing (conducted in accordance with § 50143(3) at least every

five (5) years until ten (10) years after the tank was installed; and

(ii) Tanks with capacity of 550 gallons or less and tanks with a capacity of 551 to 1,000 gallons that meet the tank diameter criteria in § 50143(2) may use manual tank gauging (conducted in accordance with § 50143(2).

(B) Tanks installed on or after October 13, 2015 must be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7).

(3) UST systems with field-constructed tanks with a capacity greater than 50,000 gallons:

(A) Tanks installed before October 13, 2015 must be monitored for releases at least every thirty (30) calendar days using one of the methods listed in § 50143(4), (7), (8), and (9) or use one or a combination of the methods of release detection listed in § 50143(10); and

(B) Tanks installed on or after October 13, 2015 must be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7).

(b) Piping. Underground piping that routinely contains regulated substances must be monitored for releases as follows:

(1) Piping installed on or before April 11, 2016, for UST systems other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must meet one of the following:

(A) Pressurized piping. Underground piping that conveys regulated substances under pressure must:

(i) Be equipped with an automatic line leak detector conducted in accordance with § 50144(1); and

(ii) Have an annual line tightness test conducted in accordance with § 50144(2) or have monthly monitoring conducted in accordance with §

50144(3).

(B) Suction piping. Underground piping that conveys regulated substances under suction must:

(i) Have a line tightness test conducted at least every three (3) years and in accordance with § 50144(2);

(ii) Use a monthly monitoring method conducted in accordance with § 50144(3); or

(iii) Meet the standards in paragraph (6)(A) to (E).

(2) Piping installed or replaced after April 11, 2016, for UST systems other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must meet one of the following:

(A) Pressurized piping. Underground piping that conveys regulated substances under pressure must:

(i) Be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7); and

(ii) Be equipped with an automatic line leak detector in accordance with § 50144(1).

(B) Suction piping. Underground piping that conveys regulated substances under suction must:

(i) Be monitored for releases at least every thirty (30) calendar days in accordance with § 50143(7); or

(ii) Meet the standards in paragraph (6)(A) to (E).

(3) Piping installed on or after October 13, 2015, for UST systems other than airport hydrant fuel distribution systems and UST systems with field-constructed tanks, must meet the technical specifications in paragraph (2)(A) or (B).

(4) Piping for UST systems with field-constructed tanks with a capacity less than or equal to 50,000 gallons and not part of an airport hydrant fuel distribution system:

(A) Piping installed before October 13, 2015 must meet the technical specifications in paragraph (1)(A) or (B).

(B) Piping installed on or after October 13, 2015 must meet the technical specifications in paragraph (2)(A) or (B).

(5) Piping for airport hydrant fuel distribution systems and UST systems with field-constructed tanks with a capacity greater than 50,000 gallons must meet one of the following:

(A) Pressurized piping. Underground piping that conveys regulated substances under pressure must:

(i) Be equipped with an automatic line leak detector conducted in accordance with § 50144(1); and

(ii) Have an annual line tightness test conducted in accordance with § 50144(2) or have monthly monitoring conducted in accordance with any of the methods in § 50143(7) to (9) designed to detect a release from any portion of the underground piping that routinely contains regulated substances; or

(iii) Use one or a combination of the methods of release detection listed in § 50144(4).

(B) Suction piping. Underground piping that conveys regulated substances under suction must:

(i) Have a line tightness test conducted at least every three (3) years and in accordance with § 50144(2);

(ii) Use a monthly monitoring method conducted in accordance with § 50143(7) to (9) designed to detect a release from any portion of the underground piping that routinely contains

regulated substances;

(iii) Use one or a combination of the methods of release detection listed in § 50144(4); or

(iv) Meet the standards in paragraph (6)(A) to (E).

(6) No release detection is required for suction piping that is designed and constructed to meet the following standards:

(A) The below-grade piping operates at less than atmospheric pressure;

(B) The below-grade piping is sloped so that the contents of the pipe will drain back into the storage tank if the suction is released;

(C) Only one check valve is included in each suction line;

(D) The check valve is located directly below and as close as practical to the suction pump; and

(E) A method is provided that allows compliance with subparagraphs (B) to (D) to be readily determined.

§ 50142. Requirements for Hazardous Substance UST Systems.

Owners and operators of hazardous substance UST systems must monitor these systems in accordance with § 50143(7) at least every thirty (30) calendar days. In addition, underground piping that conveys hazardous substances under pressure must be equipped with an automatic line leak detector in accordance with § 50144(1).

§ 50143. Methods of Release Detection for Tanks.

Each method of release detection for tanks used to meet the requirements of § 50140 to § 50142 must be conducted in accordance with the following:

(1) Inventory control. Product inventory control (or another test of equivalent performance) must be conducted monthly to

detect a release of at least one (1%) percent of flow-through plus one hundred thirty (130) gallons on a monthly basis in the following manner:

(A) Inventory volume measurements for regulated substance inputs, withdrawals, and the amount still remaining in the tank are recorded each operating day;

(B) The equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest one-eighth of an inch;

(C) If a manual measuring device is used (e.g., a gauge stick), the measurements must be made through a drop tube that extends to within one foot of the tank bottom. Level measurements shall be to the nearest one-eighth of an inch;

(D) The regulated substance inputs are reconciled with delivery receipts by measurement of the tank inventory volume before and after delivery;

(E) Deliveries are made through a drop tube that extends to within one foot of the tank bottom;

(F) Product dispensing is metered and recorded within the state standards for meter calibration or an accuracy of six cubic inches for every five (5) gallons of product withdrawn, and the meter is calibrated every three hundred sixty-five (365) calendar days; and

(G) The measurement of any water level in the bottom of the tank is made to the nearest one-eighth of an inch at least once a month.

(2) Manual tank gauging. Manual tank gauging must meet the following requirements:

(A) Tank liquid level measurements are taken at the beginning and ending of a period using the appropriate minimum duration of test value in the table below during which no liquid is added

to or removed from the tank;

(B) If a manual measuring device is used (e.g., a gauge stick), the measurements must be made through a drop tube that extends to within one foot of the tank bottom. Level measurements shall be to the nearest one-eighth of an inch;

(C) Level measurements are based on an average of two (2) consecutive stick readings at both the beginning and ending of the period;

(D) The equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest one-eighth of an inch;

(E) A release is suspected and subject to the requirements of Article 5 if the variation between beginning and ending measurements exceeds the weekly or monthly standards in the following table:

Nominal tank capacity	Minimum duration of test	Weekly standard (one test)	Monthly standard (four test average)
550 gallons or less	36 hours	10 gallons	5 gallons
551–1,000 gallons (when tank diameter is 64 inches)	44 hours	9 gallons	4 gallons
551–1,000 gallons (when tank diameter is 48 inches)	58 hours	12 gallons	6 gallons
551–1,000 gallons (also requires periodic tank tightness testing)	36 hours	13 gallons	7 gallons
1,001–2,000 gallons (also requires periodic tank tightness testing)	36 hours	26 gallons	13 gallons

(F) Tanks of five hundred fifty (550) gallons or less nominal capacity and tanks with a nominal capacity of five hundred fifty-one (551) to one thousand (1,000) gallons that meet the tank diameter criteria in the table in subparagraph (E) may use manual tank gauging as the sole method of release detection. All other tanks with a nominal capacity of five hundred fifty-one (551) to two thousand (2,000) gallons may

use manual tank gauging in place of inventory control in paragraph (1), combined with tank tightness testing as indicated in the table. Tanks of greater than two thousand (2,000) gallons nominal capacity may not use this method to meet the requirements of this Article.

(3) Tank tightness testing. Tank tightness testing (or another test of equivalent performance) must be capable of detecting a 0.1 gallon per hour leak rate from any portion of the tank that routinely contains product while accounting for the effects of thermal expansion or contraction of the product, vapor pockets, tank deformation, evaporation or condensation, and the location of the water table.

(4) Automatic tank gauging. Equipment for automatic tank gauging that test for the loss of product and conducts inventory control must meet the following requirements:

(A) The automatic product level monitor test can detect a 0.2 gallon per hour leak rate from any portion of the tank that routinely contains product;

(B) The automatic tank gauging equipment must meet the inventory control (or other test of equivalent performance) requirements of paragraph (1); and

(C) The test must be performed with the system operating in one of the following modes:

(i) In-tank static testing conducted at least once every thirty (30) calendar days; or

(ii) Continuous in-tank leak detection operating on an uninterrupted basis or operating within a process that allows

the system to gather incremental measurements to determine the leak status of the tank at least once every thirty (30) calendar days.

(5) Vapor monitoring. Testing or monitoring for vapors within the soil gas of the excavation zone must meet the following requirements:

(A) The materials used as backfill are sufficiently porous (e.g., gravel, sand, crushed rock) to readily allow diffusion of vapors from releases into the excavation area;

(B) The stored regulated substance, or a tracer compound placed in the tank system, is sufficiently volatile (e.g., gasoline) to result in a vapor level that is detectable by the monitoring devices located in the excavation zone in the event of a release from the tank;

(C) The measurement of vapors by the monitoring device is not rendered inoperative by the groundwater, rainfall, or soil moisture or other known interferences so that a release could go undetected for more than thirty (30) calendar days;

(D) The level of background contamination in the excavation zone will not interfere with the method used to detect releases from the tank;

(E) The vapor monitors are designed and operated to detect any significant increase in concentration above background of the regulated substance stored in the tank system, a component or components of that substance, or a tracer compound placed in the tank system;

(F) In the UST excavation zone, the site is assessed to ensure compliance with the requirements in subparagraphs (A) to (D) and to establish the number and positioning of monitoring wells that will detect

releases within the excavation zone from any portion of the tank that routinely contains product; and

(G) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(6) Groundwater monitoring. Testing or monitoring for liquids on the groundwater must meet the following requirements:

(A) The regulated substance stored is immiscible in water and has a specific gravity of less than one;

(B) Groundwater is never more than twenty (20) feet from the ground surface and the hydraulic conductivity of the soils between the UST system and the monitoring wells or devices is not less than 0.01 cm/sec (e.g., the soil should consist of gravels, coarse to medium sands, coarse silts or other permeable materials);

(C) The slotted portion of the monitoring well casing must be designed to prevent migration of natural soils or filter pack into the well and to allow entry of regulated substance on the water table into the well under both high and low groundwater conditions;

(D) Monitoring wells shall be sealed from the ground surface to the top of the filter pack;

(E) Monitoring wells or devices intercept the excavation zone or are as close to it as is technically feasible;

(F) The continuous monitoring devices or manual methods used can detect the presence of at least one-eighth of an inch of free product on top of the groundwater in the monitoring wells;

(G) Within and immediately below the UST system excavation zone, the site is assessed to ensure compliance with the requirements in

subparagraphs (A) to (E) and to establish the number and positioning of monitoring wells or devices that will detect releases from any portion of the tank that routinely contains product; and

(H) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(7) Interstitial monitoring. Interstitial monitoring between the UST system and a secondary barrier immediately around or beneath it may be used, but only if the system is designed, constructed, and installed to detect a leak from any portion of the tank that routinely contains product and also meets one of the following requirements:

(A) For double walled UST systems, the sampling or testing method can detect a leak through the inner wall in any portion of the tank that routinely contains product;

(B) For UST systems with a secondary barrier within the excavation zone, the sampling or testing method used can detect a leak between the UST system and the secondary barrier;

(i) The secondary barrier around or beneath the UST system consists of artificially constructed material that is sufficiently thick and impermeable (at least 10^{-6} cm/sec for the regulated substance stored) to direct a leak to the monitoring point and permit its detection;

(ii) The barrier is compatible with the regulated substance stored so that a leak from the UST system will not cause a deterioration of the barrier allowing a

release to pass through undetected;

(iii) For cathodically protected tanks, the secondary barrier must be installed so that it does not interfere with the proper operation of the cathodic protection system;

(iv) The groundwater, soil moisture, or rainfall will not render the testing or sampling method used inoperative so that a release could go undetected for more than thirty (30) calendar days;

(v) The site is assessed to ensure that the secondary barrier is always above the groundwater and not in a twenty-five-year flood plain, unless the barrier and monitoring designs are for use under such conditions; and,

(vi) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

(C) For tanks with an internally fitted liner, an automated device can detect a leak between the inner wall of the tank and the liner, and the liner is compatible with the substance stored.

(8) Statistical inventory reconciliation. Release detection methods based on the application of statistical principles to inventory data similar to those described in paragraph (1) must meet the following requirements:

(A) Report a quantitative result with a calculated leak rate;

(B) Be capable of detecting a leak rate of 0.2 gallon per hour or a release of one hundred fifty (150) gallons within thirty (30) calendar days; and

(C) Use a threshold that does not exceed one-half the minimum detectible leak rate.

(9) Other methods. Any other type of release detection method, or combination of methods, can be used if:

(A) It can detect a 0.2 gallon per hour leak rate or a release of one hundred fifty (150) gallons within a month with a probability of detection of 0.95 and a probability of false alarm of 0.05; or

(B) The owner and operator can demonstrate to the agency that the method can detect a release as effectively as any of the methods allowed in paragraphs (3) to (8), and the agency approves the method. In comparing methods, the agency shall consider the size of release that the method can detect and the frequency and reliability with which it can be detected. If the method is approved, the owner and operator must comply with any conditions imposed by the agency on its use to ensure the protection of human health and the environment.

(10) Methods of release detection for field-constructed tanks. One or a combination of the following methods of release detection for tanks may be used when allowed by § 50141.

(A) Conduct an annual tank tightness test that can detect a 0.5 gallon per hour leak rate;

(B) Use an automatic tank gauging system to perform release detection at least every thirty (30) calendar days that can detect a leak rate less than or equal to one (1) gallon per hour. This method must be combined with a tank tightness test that can detect a 0.2 gallon per hour leak rate performed at least every three (3) years;

(C) Use an automatic tank gauging system to perform release detection at least every thirty (30) calendar days that can detect a leak rate less than or equal to two (2) gallons per hour. This method must be combined with a tank tightness test that can detect a 0.2 gallon per hour leak rate performed at least every

two (2) years;

(D) Perform vapor monitoring (conducted in accordance with paragraph (5) for a tracer compound placed in the tank system) capable of detecting a 0.1 gallon per hour leak rate at least every two (2) years;

(E) Perform inventory control (conducted in accordance with Department of Defense Directive 4140.25, ATA Airport Fuel Facility Operations and Maintenance Guidance Manual, or equivalent procedures) at least every thirty (30) calendar days that can detect a leak equal to or less than 0.5 percent of flow-through; and

(i) Perform a tank tightness test that can detect a 0.5 gallon per hour leak rate at least every two (2) years; or

(ii) Perform vapor monitoring or groundwater monitoring (conducted in accordance with paragraph (5) or (6), respectively, for the stored regulated substance) at least every thirty (30) calendar days; or

(F) Another method approved by the agency if the owner and operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in subparagraphs (A) to (E). In comparing methods, the agency shall consider the size of release that the method can detect and the frequency and reliability of detection.

§ 50144. Methods of Release Detection for Piping.

Each method of release detection for piping used to meet the requirements of § 50140 to § 50142 must be conducted in accordance with the following:

(1) Automatic line leak detectors. Methods which alert the operator to the presence of a leak by restricting or shutting off the flow of regulated substances through piping may be used only if they detect leaks of three (3) gallons per hour at

ten (10) pounds per square inch line pressure within one hour. An annual test of the operation of the leak detector must be conducted in accordance with § 50140(a)(4).

(2) Line tightness testing. A periodic test of piping may be conducted only if it can detect a 0.1 gallon per hour leak rate at one and one-half times the operating pressure.

(3) Applicable tank methods. Any of the methods in § 50143(5) to (9) may be used if they are designed to detect a release from any portion of the underground piping that routinely contains regulated substances.

(4) Methods of release detection for piping associated with airport hydrant systems and field-constructed tanks. One or a combination of the following methods of release detection for piping may be used when allowed by § 50141.

(A) (i) Perform a semiannual or annual line tightness test at or above the piping operating pressure in accordance with the table below.

MAXIMUM LEAK DETECTION RATE PER TEST SECTION VOLUME

Test section volume (gallons)	Semiannual test—leak detection rate not to exceed (gallons per hour)	Annual test—leak detection rate not to exceed (gallons per hour)
<50,000	1.0	0.5
≥50,000 to <75,000	1.5	0.75
≥75,000 to <100,000	2.0	1.0
≥100,000	3.0	1.5

(ii) Piping segment volumes ≥100,000 gallons not capable of meeting the maximum 3.0 gallon per hour leak rate for the semiannual test may be tested at a leak rate up to 6.0 gallons per hour according to the following schedule:

PHASE IN FOR PIPING SEGMENTS ≥100,000 GALLONS IN VOLUME

First test	Not later than three years after the effective date of these rules (may use up to 6.0 gph leak rate).
Second test	Between three and six years after the effective date of these rules (may use up to 6.0 gph leak rate).
Third test	Between six and seven years after the effective date of these rules (must use 3.0 gph for leak rate).
Subsequent tests..	Not later than seven years after the effective date of these rules, begin using semiannual or annual line testing according to the Maximum Leak Detection Rate Per Test Section Volume table above.

(B) Perform vapor monitoring (conducted in accordance with § 50143(5) for a tracer compound placed in the tank system) capable of detecting a 0.1 gallon per hour leak rate at least every two (2) years;

(C) Perform inventory control (conducted in accordance with Department of Defense Directive 4140.25, ATA Airport Fuel Facility Operations and Maintenance Guidance Manual, or equivalent procedures) at least every thirty (30) calendar days that can detect a leak equal to or less than 0.5 percent of flow-through; and

(i) Perform a line tightness test (conducted in accordance with subparagraph (A) using the leak rates for the semiannual test) at least every two (2) years; or

(ii) Perform vapor monitoring or groundwater monitoring (conducted in accordance with § 50143(5) or (6), respectively, for the stored regulated substance) at least every thirty (30) calendar days; or

(D) Another method approved by the agency if the owner and operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in subparagraphs (A) to (C). In comparing

methods, the agency shall consider the size of release that the method can detect and the frequency and reliability of detection.

§ 50145. Release Detection Recordkeeping.

All UST system owners and operators must maintain records in accordance with § 50134 demonstrating compliance with all applicable requirements of this subchapter. These records must include the following:

(1) All written performance claims pertaining to any release detection system used, and the manner in which these claims have been justified or tested by the equipment manufacturer or installer, must be maintained for the operating life of the UST system. Records of site assessments required under § 50143(5)(F) and (6)(G) must be maintained for as long as the methods are used. Records of site assessments developed after October 13, 2015, must be signed by a professional engineer or professional geologist, or equivalent licensed professional with experience in environmental engineering, hydrogeology, or other relevant technical discipline acceptable to the agency;

(2) The results of any sampling, testing, or monitoring must be maintained for at least three (3) years, except as follows:

(A) The results of annual operation tests conducted in accordance with § 50140(a)(4) must be maintained for three (3) years. At a minimum, the results must list each component tested, indicate whether each component tested meets criteria in § 50140(a)(4) or needs to have action taken, and describe any action taken to correct an issue;

(B) The results of tank tightness testing conducted in accordance with § 50143(3) must be retained until the next test is conducted; and

(C) The results of tank tightness testing, line tightness

testing, and vapor monitoring using a tracer compound placed in the tank system conducted in accordance with § 50143(10) or § 50144(4) must be retained until the next test is conducted;

(3) All records that the equipment being utilized to monitor or maintain the UST system is designed to produce must be maintained for at least three (3) years after the record is generated; and

(4) Written documentation of all calibration, maintenance, and repair of release detection equipment permanently located on-site must be maintained for at least three (3) years. Any schedules of required calibration and maintenance provided by the release detection equipment manufacturer must be retained for five (5) years from the date of installation.

§ 50146. Release Detection - Code of Practice.

The following current code of practice may be used to comply with § 50140(a)(4):

(1) Petroleum Equipment Institute Publication RP1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities"; and

(2) Practices described in the American Petroleum Institute Recommended Practice RP 1621, "Bulk Liquid Stock Control at Retail Outlets" may be used, where applicable, as guidance in meeting the requirements of § 50143(1).

§ 50147 to § 50149. [Reserved;]

ARTICLE 5
RELEASE REPORTING, INVESTIGATION, AND CONFIRMATION

§ 50150. Reporting of Suspected Release

§ 50151. Investigation of Off-site Impacts
§ 50152. Release Investigation and Confirmation Steps
§ 50153. Reporting and Cleanup of Spills and Overfill
§ 50154 to § 50159. [Reserved.]

§ 50150. Reporting of Suspected Release.

Owners and operators of UST systems must notify the agency within twenty-four (24) hours and follow the procedures in § 50152 for any of the following conditions:

(1) The discovery by any person of evidence of released regulated substances at the UST site or in the surrounding area (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface water).

(2) Unusual UST or tank system operating conditions observed or experienced by owners and operators (such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST system, an unexplained presence of water in the tank, or liquid in the interstitial space of secondarily contained systems), unless:

(A) The system equipment or component is found not to be releasing regulated substances to the environment;

(B) Any defective system equipment or component is immediately repaired or replaced; and

(C) For secondarily contained systems, except as provided for in § 50143(7)(B)(iv), any liquid in the interstitial space not used as part of the interstitial monitoring method (for example, brine filled) is immediately removed.

(3) Monitoring results, including investigation of an alarm, from a release detection method required under § 50141 and § 50142 that indicate a release may have occurred unless:

(A) The monitoring device is found to be defective, and is

immediately repaired, recalibrated or replaced, and additional monitoring does not confirm the initial result;

(B) The leak is contained in the secondary containment and:

(i) Except as provided for in § 50143(7)(B)(iv), any liquid in the interstitial space not used as part of the interstitial monitoring method (for example, brine filled) is immediately removed; and

(ii) Any defective system equipment or component is immediately repaired or replaced;

(C) In the case of inventory control described in § 50143(1), a second month of data does not confirm the initial result or the investigation determines no release has occurred; or

(D) The alarm was investigated and determined to be a non-release event (for example, from a power surge or caused by filling the tank during release detection testing).

§ 50151. Investigation of Off-site Impacts.

When required by the agency, owners and operators of UST systems must follow the procedures in § 50152 to determine if the UST system is the source of off-site impacts. These impacts include the discovery of regulated substances (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface and drinking waters) that has been observed by the agency or brought to the agency's attention by any person.

§ 50152. Release Investigation and Confirmation Steps.

(a) Unless release response action is initiated in accordance with Article 6, owners and operators must immediately investigate and

confirm all suspected releases of regulated substances requiring reporting under § 50150 within seven (7) calendar days following the discovery of the suspected release, unless a written request for extension of time is granted by the Administrator.

(b) Investigations and confirmations required in subsection (a) must use the following steps or another procedure approved by the agency:

(1) System test. Owners and operators must conduct tests (according to the requirements for tightness testing in § 50143(3) and § 50144(2) or, as appropriate, secondary containment testing described in § 50133(a)(6).

(A) The test must determine whether:

(i) A leak exists in that portion of the tank that routinely contains product, or the attached delivery piping; or

(ii) A breach of either wall of the secondary containment has occurred.

(B) If the system test confirms a leak into the interstice or a release, owners and operators must repair, replace, or close the UST system. In addition, owners and operators must begin release response action in accordance with Article 6 if the test results for the system, tank, or delivery piping indicate that a release exists.

(C) Further investigation is not required if the test results for the system, tank, and delivery piping do not indicate that a release exists and if environmental contamination is not the basis for suspecting a release.

(D) Owners and operators must conduct a site assessment as described in paragraph (2) if the test results for the system, tank, and delivery piping do not indicate that a release exists but environmental contamination is the basis for suspecting a release.

(2) Site assessment. Owners and operators must measure for

the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the nature of the stored substance, the type of initial alarm or cause for suspicion, the type of backfill and surrounding soil, the depth and flow of groundwater, and other factors as appropriate for identifying the presence and source of the release.

(A) If the test results for the excavation zone or the UST site indicate that a release has occurred, owners and operators must begin release response action in accordance with Article 6;

(B) If the test results for the excavation zone or the UST site do not indicate that a release has occurred, further investigation is not required.

(c) If it is determined that a release has not occurred, owners and operators must report the results of the investigation in writing to the agency within thirty (30) calendar days following discovery of the suspected release. The report shall include, but not be limited to, results of the tests required by subsection (b) as well as performance claims pursuant to § 50140(a)(5).

§ 50153. Reporting and Cleanup of Spills and Overfill.

(a) Owners and operators of UST systems must contain and immediately clean up all spills and overfills in a manner which is protective of human health and the environment as set forth in § 50165.3.

(b) Owners and operators must notify the agency within twenty-four (24) hours and begin release response action in accordance with Article 6 in the following cases:

(1) Spill or overfill of petroleum that results in a release to the environment that exceeds twenty-five (25) gallons or that causes a sheen on nearby surface waters; and

(2) Spill or overfill of hazardous substances that result in a release to the environment that equals or exceeds its reportable quantity under CERCLA (40 CFR part 302).

(c) Owners and operators of UST systems must contain and immediately clean up a spill or overfill of petroleum that is less than twenty-five (25) gallons or a spill or overfill of a hazardous substance that is less than the reportable quantity. If cleanup cannot be accomplished within twenty-four (24) hours, then the owners and operators must immediately notify the agency of the incident and continue cleaning up the spill or overfill. Owners and operators must also complete and submit to the agency a written report of the actions taken in response to the spill or overfill within fourteen (14) calendar days.

(d) An owner or operator must submit the appropriate forms listed in § 501111(b) documenting current evidence of financial responsibility to the Administrator within thirty (30) calendar days after identifying a release from an underground storage tank or tank system required to be reported under this section.

§ 50154 to § 50159. [Reserved.]

ARTICLE 6
RELEASE RESPONSE ACTION

§ 50160. General
§ 50161. Immediate Response Action
§ 50161.1. Posting of Signs
§ 50162. Initial Abatement Measures and Site Assessment
§ 50163. Initial Site Characterization
§ 50164. Free Product Removal
§ 50165. Investigation for Soil and Groundwater Cleanup
§ 50165.1. Notification of Confirmed Release
§ 50165.2. Release Response Reporting
§ 50165.3. Site Cleanup Criteria
§ 50166. Corrective Action

§ 50167. Public Participation for Corrective Action Plans
§ 50168 to § 50169. [Reserved.]

§ 50160. General.

Owners and operators of petroleum or hazardous substance UST systems must, in response to a confirmed release from the UST system, comply with the requirements of this Article, except for USTs excluded under § 50110(b) and UST systems subject to RCRA Subtitle C corrective action requirements under section 3004(u) of the Resource Conservation and Recovery Act, as amended.

§ 50161. Immediate Response Action.

(a) Upon confirmation of a release in accordance with § 50152 or after a release from the UST system is identified in any other manner, owners and operators must perform the following response actions within twenty-four (24) hours:

(1) Report the release to the agency by telephone;
(2) Take necessary actions to prevent any further release of the regulated substance into the environment, including removal of as much of the regulated substance from the UST or tank system as possible;
(3) Identify and mitigate any safety hazards (such as fire, explosion, and vapor hazards) posed by the release of the regulated substance; and
(4) Take necessary action to minimize the spread of contamination.

(b) Within seven (7) calendar days of confirmation, owners and operators must submit to the agency a written notice of confirmation. The notice shall include, but not be limited to, the following information: source of the release, method of discovery and confirmation, estimated quantity of substance released, type of substance released, immediate hazards, release impact, migration pathways, and actions taken.
(c) An owner or operator must submit the appropriate forms listed in §

501111(b) documenting current evidence of financial responsibility to the Administrator within thirty (30) calendar days after identifying a release from an underground storage tank or tank system required to be reported under this section.

§ 50161.1. Posting of Signs.

(a) If the agency determines that posting of signs is appropriate, owners and operators shall post signs around the perimeter of the site informing passersby of the potential hazards. In this instance, "site" means an area where contamination poses an immediate health risk or an area where contaminated media is exposed to the surface.
(b) Signs shall be placed at each entrance to the site and at other locations in sufficient numbers to be seen from any approach to the site.
(c) Signs shall be legible and readable from a distance of at least twenty-five (25) feet. The sign legend shall read, "Caution Petroleum/Hazardous Substance Contamination - Unauthorized Personnel Keep Out". Other sign legends may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the site and that entry onto the site may be dangerous. A contact person and telephone number shall be listed on the sign.
(d) The sign may be removed upon determination by the agency that no further release response action is necessary or that posting of signs is no longer appropriate.

§ 50162. Initial Abatement Measures and Site Assessment.

(a) Unless directed to do otherwise by the agency, owners and operators must perform the following abatement measures:

(1) Continue to remove as much of the regulated substance from the UST system as is necessary to prevent further release to the environment;

(2) Visually inspect the area around the UST or tank system for evidence of any aboveground releases or exposed belowground releases and continue to take necessary

actions to minimize the spread of contamination and to prevent further migration of the released substance into surrounding soils, air, surface water, and groundwater;

(3) Continue to monitor and mitigate any additional fire and safety hazards posed by vapors or free product that have migrated from the UST excavation zone and entered into subsurface structures (such as sewers or basements);

(4) Remedy hazards (such as dust and vapors and the potential for leachate generation) posed by contaminated soils and debris that are excavated or exposed as a result of release confirmation, site investigation, abatement, or release response action activities;

(5) Conduct an assessment of the release by measuring for the presence of a release where contamination is most likely to be present at the UST site, unless the presence and source of the release have been confirmed in accordance with the site assessment required by § 50152(b) or the site assessment required for change-in-service or permanent closure in § 50172(a). In selecting sample types, sample locations, and measurement methods, the owner and operator must consider the nature of the stored substance, the type of backfill and surrounding soil, depth and flow of groundwater and other factors as appropriate for identifying the presence and source of the release;

(6) Investigate to determine the possible presence of free product, and begin free product removal in accordance with § 50164;

(7) Remove or remediate contaminated soil at the site to the extent necessary to prevent the spread of free product; and

(8) If any of the remedies in this section include treatment or disposal of contaminated soils, owners or operators must comply with all applicable local, state, and federal requirements.

(b) Within twenty (20) calendar days after release confirmation, or within another reasonable period of time determined by the agency, owners and

operators must submit a report to the agency summarizing the initial abatement steps taken under subsection (a) and any resulting information or data.

§ 50163. Initial Site Characterization.

(a) Owners and operators must assemble information about the site and the nature of the release, including information gained while confirming the release or completing the initial abatement measures in § 50160 and § 50161. This information must include, but is not necessarily limited to the following:

(1) Data on the nature and estimated quantity of release;

(2) Data from available sources and all previous site investigations concerning the following factors: surrounding populations, water quality, use and approximate locations of wells potentially affected by the release, subsurface soil conditions, locations of subsurface sewers, climatological conditions, and land use;

(3) Results of the site assessment required under § 50162(a)(5); and

(4) Results of the free product investigations required under § 50162(a)(6), to be used by owners and operators to determine whether free product must be recovered under § 50164.

(b) Within forty-five (45) calendar days of release confirmation, or another reasonable period of time determined by the agency, owners and operators must submit the information collected in compliance with subsection (a) to the agency in a manner that demonstrates its applicability and technical adequacy.

§ 50164. Free Product Removal.

(a) At sites where investigations under § 50162(a)(6) indicate the presence of free product, owners and operators must remove free product to the maximum extent practicable as determined by the agency while continuing, as necessary, any actions initiated under §§ 50161 to 50163, or

preparing for actions required under §§ 50165 to 50166. In meeting the requirements of this section, owners and operators must:

(1) Conduct free product removal in a manner that minimizes the spread of contamination into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site, and that properly treats, discharges or disposes of recovery byproducts in compliance with applicable local, state, and federal regulations;

(2) Use abatement of free product migration as a minimum objective for the design of the free product removal system;

(3) Handle any flammable products in a safe and competent manner to prevent fires or explosions; and

(4) Prepare and submit to the agency, within forty-five (45) calendar days after confirming a release, a free product removal report that provides at least the following information:

(A) The name of the person responsible for implementing the free product removal measures;

(B) The estimated quantity, type, and thickness of free product observed or measured in wells, boreholes, and excavations;

(C) The type of free product recovery system used;

(D) Whether any discharge will take place on-site or off-site during the recovery operation and where this discharge will be located;

(E) The type of treatment applied to, and the effluent quality expected from, any discharge;

(F) All actions already performed or currently underway to remove free product, including steps that have been or are being taken to obtain necessary permits for any discharge;

(G) The disposition of the recovered free product; and
(H) Schedule for completion of free product removal.

(b) Owners and operators shall initiate free product removal as soon as practicable but no later than thirty (30) calendar days following confirmation of a release, or sooner if directed by the agency.

§ 50165. Investigation for Soil and Groundwater Cleanup.

(a) In order to determine the full extent and location of soils contaminated by the release and the presence and concentrations of dissolved product contamination in the groundwater and surface water, owners and operators must conduct investigations of the release, the release site, and the surrounding area possibly affected by the release if any of the following conditions exist:

(1) There is evidence that groundwater wells have been affected by the release (e.g., as found during release confirmation or previous release response actions);
(2) Free product is found to need recovery in compliance with § 50164;
(3) There is evidence that contaminated soils may be in contact with groundwater (e.g., as found during conduct of the initial response measures or investigations required under §§ 50160 to 50164; and
(4) The agency requests an investigation, based on the potential effects of contaminated soil or groundwater on nearby surface water and groundwater resources.

(b) Owners and operators must include information collected in accordance with this section with each quarterly report required pursuant to § 50165.2.

§ 50165.1. Notification of Confirmed Release.

(a) Within ninety (90) calendar days following confirmation of a release, the owner and operator shall notify those members of the public directly affected by the release in writing of the release and the proposed response to the release, including a historical account of actions performed since the discovery of the release. Members of the public directly affected by the release shall include:

(1) Persons who own, hold a lease for, or have easements at, any property on which the regulated substance released from the UST was discovered; and

(2) Other persons identified by the Administrator.

(b) The owner and operator shall send a letter to all members of the public directly affected by the release. Model language for the letter shall be provided by the agency and shall include at least the following information:

(1) Name and address of the UST or UST system;

(2) Statement that a release of regulated substance has been confirmed at the UST or UST system;

(3) Name of a contact person at the agency; and

(4) Reference to an attached factsheet pursuant to subsection (c).

(c) The letter to the members of the public directly affected by the release shall include a factsheet which contains the following information:

(1) Name and address of the UST or UST system;

(2) Name and address of the owner and operator of the UST or UST system;

(3) Name, address, and telephone contact of the party performing the cleanup activities;

(4) Date of the confirmed release;

(5) Nature and extent of the confirmed release;

(6) Summary of measures taken to assess the release and extent of contamination; and

(7) Summary of the proposed response to the release.

(d) The factsheet shall be updated on a quarterly basis and sent to all members of the public directly affected by the release. If additional members of the public directly affected by the release are identified in the

course of release response actions, then the owner and operator shall provide those persons with all previous and future letters and factsheets.
(e) The owner and operator shall include in the quarterly report required pursuant to § 50165.2 the following information:

(1) Copy of the letter pursuant to subsection (b);
(2) List of the members of the public directly affected by the release and to whom the letter was sent; and
(3) Copies of the factsheet and amended factsheets pursuant to subsections (c) and (d).

§ 50165.2. Release Response Reporting.

(a) No later than ninety (90) calendar days following the confirmation of a release, owners and operators must submit to the agency a written report in the format specified by the agency. The report must include:

(1) All release response actions taken pursuant to this Article during the first ninety-day (90) period (first quarter); and
(2) A plan for future release response actions to be taken.

(b) Beginning one hundred eighty (180) calendar days following confirmation of a release, owners and operators must submit to the agency written quarterly progress reports and an electronic copy of the written report in a format specified by the agency. The reports must document:

(1) All response actions taken pursuant to this subchapter after the last reported date;
(2) A plan for future release response actions to be taken; and
(3) Information required pursuant to § 50165.1.

(c) Quarterly progress reports are not required if:

(1) Response actions have met the requirements of § 50165.3; and
(2) A final quarterly report has been submitted.

§ 50165.3. Site Cleanup Criteria.

(a) Owners and operators must remediate soil, surface water, and groundwater, and materials contaminated by releases from USTs or tank systems in a manner that is protective of human health and the environment and achieves cleanup as described in subsection (b).
(b) Owners and operators must remediate contaminated soil, groundwater, and surface water at the site to residual concentrations that meet one of the following criteria:

(1) Default Tier 1 Screening Levels as presented in Table 1 in subsection (e); or

(2) Site-specific action levels as approved by the agency.

Owners and operators should consult with the agency on how the standards in this paragraph can be met. Site-specific action levels must take into account the following factors:

(A) For systemic toxicants, acceptable levels shall represent concentration levels to which the human population may be exposed without adverse effect during a lifetime or part of a lifetime, and incorporating an adequate margin of safety;

(B) For known or suspected carcinogens, acceptable levels are generally concentration levels in soil, groundwater and vapor that represent an excess upper bound lifetime cancer risk to an individual of between 10^{-4} and 10^{-6} using information on the relationship between dose and response. The 10^{-6} excess risk level shall be used as the point of departure for determining acceptable levels for alternatives when chemical-specific state or federal requirements are not available or are not sufficiently protective because of the presence of multiple contaminants at the site or multiple pathways of exposure;

(C) Impacts to ecological receptors, including but not limited to plants and animals; and

(D) Other applicable requirements, including but not

limited to nuisance concerns for odor and taste, if applicable.

(c) The agency may require the owners and operators to modify cleanup activities being performed at a site if the agency determines that the activities are not being carried out in accordance with this subchapter, or are not achieving cleanup levels that are protective of human health and the environment. The agency may impose modifications to cleanup activities by written notice to the owners and operators, and the owners and operators must implement necessary changes to the cleanup activities in response to the agency's notice by a time schedule established by the agency.

(d) A schedule for estimated completion of site cleanup shall be included in each fourth quarter report required pursuant to § 50165.2(b).

(e) The figure labeled "Table 1. Tier 1 Screening Levels of Soil and Groundwater" is made a part of this subsection.

Table 1. Tier 1 Screening Levels for Soil and Groundwater

Contaminant	DRINKING WATER SOURCE THREATENED				DRINKING WATER SOURCE NOT THREATENED			
	Groundwater (ug/l)	Basis[1]	Soil (mg/kg)	Basis[2]	Groundwater (ug/l)	Basis[3]	Soil (mg/kg)	Basis[2]
Acenaphthene	15	-	120	L/VI	15	-	40	L/VI
Benzene	5.0	DWP	0.30	L	71	CAT	0.77	VI
Benzo(a)pyrene	0.05	-	3.6	DE	0.05	-	3.6	DE
Dichloroethylene, cis 1,2-	70	DWP	0.36	VI	620	CAT	0.36	VI
Dichloroethylene, trans 1,2-	100	DWP	3.6	VI	560	CAT	3.6	VI
Ethylbenzene	7.3	CAT	0.90	L	7.3	CAT	0.90	L
Fluoranthene	0.05	-	87	L	0.05	-	87	L
Lead	2.5	CAT	200	DE	2.5	CAT	200	DE
Methyl Tert Butyl Ether (MTBE)	5.0	DWS	0.028	L	730	CAT	2.3	VI
Naphthalene	12	CAT	3.1	L	12	CAT	3.1	L
Polychlorinated Biphenyls (PCBs)	0.014	-	1.2	DE	0;014	-	1.2	DE
Tetrachloethylene (PCE)	5.0	DWP	0.098	VI	53	CAT	0.098	VI
Toluene	9.8	CAT	0.78	L	9.8	CAT	0.78	L
TPH-gasolines	300	DWP	100	GC	500	CAT	100	GC
TPH-middle distillates	400	DWP	220	DE	640	CAT	220	DE
TPH-residual fuels	500	DWS	500	GC	640	CAT	500	GC
Trichloroethylene	5.0	DWP	0.089	VI	47	CAT	0.089	VI
Vinyl Chloride	2.0	DWP	0.036	VI	18	VI	0.036	VI
Xylenes	13	CAT	1.4	L	13	CAT	1.4	L

Notes to Table 1.

1. Drinking water screening levels are the lowest of screening levels for: drinking water primary maximum contaminant levels based on toxicity ("DWP"), drinking water secondary maximum contaminant levels based on taste and odor concerns ("DWS"), vapor intrusion ("VI"), and chronic aquatic toxicity ("CAT").

2. Soil screening levels are the lowest of screening levels for: direct exposure ("DE"), vapor intrusion ("VI"), leaching ("L"), and gross contamination ("GC").

3. Non-drinking water screening levels are the lowest of screening levels vapor intrusion ("VI"), chronic aquatic toxicity ("CAT"), and gross contamination ("GC").

§ 50166. Corrective Action.

(a) The agency may require that the owner and operator submit a written corrective action plan for responding to a release, if one or more of the following minimum threshold criteria are met:

(1) Actual or probable release to groundwater which is a drinking water supply;
(2) Actual or probable release to surface water which is a drinking water supply;
(3) Actual or probable release to air that poses a threat to public health;
(4) Actual or probable release to and extensive contamination of soil that poses a direct contact hazard due to uncontrolled access;
(5) Actual or probable existence of uncontrolled regulated substances that pose a direct contact hazard due to uncontrolled access;
(6) Actual or probable adverse impact to natural resources;
(7) Actual or probable imminent danger of fire or explosion; or

(8) A determination by the Administrator that a release poses a substantial endangerment to public health or welfare, the environment, or natural resources.

(b) If a plan is required, owners and operators must submit the plan to the agency in a format established by the agency within thirty (30) calendar days of the agency's request, unless an extension of time is granted by the agency.

(c) Corrective action plans which are required to be submitted to the agency shall be subject to the review and discretionary approval of the agency in accordance with the procedures set forth in this section. Owners and operators are responsible for submitting a corrective action plan that provides for adequate protection of human health and the environment as determined by the agency and must make necessary modifications to the plan when directed to do so by the agency.

(d) The agency will approve the corrective action plan only after ensuring that implementation of the plan will adequately protect human health, safety, and the environment. In making this determination, the agency will consider the following factors as appropriate:

(1) Physical and chemical characteristics of the regulated substance, including its toxicity, persistence, and potential for migration;

(2) Hydrogeologic characteristics of the facility and the surrounding area;

(3) Proximity, quality, and current and future uses of nearby surface water and groundwater;

(4) Potential effects of residual contamination on nearby surface water and groundwater;

(5) An exposure assessment; and

(6) All other information assembled in compliance with this subchapter.

(e) The public participation procedures set forth in § 50167 apply to all corrective action plans submitted under this section.

(f) Upon approval of a corrective action plan, owners and operators must implement the plan, including any modifications to the plan made by the agency. Owners and operators must monitor, evaluate, and report

quarterly to the agency the results of implementing the corrective action plan pursuant to this section and § 50165.2.

(g) Owners and operators who have been requested by the agency to submit a corrective action plan are encouraged to begin cleanup of contaminated soils, surface water, groundwater, and materials before the plan is approved by the agency provided that they:

(1) Notify the agency of their intention to begin cleanup;

(2) Ensure that cleanup measures undertaken are consistent with the cleanup actions required pursuant to § 50165.3;

(3) Comply with any conditions imposed by the agency, including halting cleanup or mitigating adverse consequences from cleanup activities; and

(4) Incorporate self-initiated cleanup measures in the corrective action plan that is submitted to the agency for approval.

§ 50167. Public Participation for Corrective Action Plans.

(a) The agency shall conduct public participation activities in accordance with subsections (c) through (h) when:

(1) A corrective action plan required pursuant to § 50166(a) has been submitted and the agency has made a tentative decision concerning the proposed plan; or

(2) Implementation of any previously approved corrective action plan has not achieved the cleanup levels established in the plan and termination of the plan is under consideration by the agency.

(b) The agency will provide notice to the public of the release and the applicable response as required in subsections (c) and (d). Costs for all public participation activities described in subsections (c) through (h) shall be borne by the owner and operator of the UST or UST system, including the costs of making copies of materials to the public under subsection (f).

(c) Notice to members of the public directly affected by the release, as defined in § 50165.1(a), shall be given in the form of a letter from the agency and shall include at least the following information:

(1) Name and address of the UST or UST system;

(2) Name and address of the owner and operator of the UST or UST system;
(3) Summary of the release information and the proposed or previously approved corrective action plan;
(4) The agency's tentative decision concerning the proposed corrective action plan or concerning the termination of the previously approved corrective action plan;
(5) Announcement that an informational meeting will be held in accordance with subsection (g);
(6) Request for comments on the corrective action plan and the agency's tentative decision; and
(7) Availability of information on the release and the agency's tentative decision.

(d) Notice to the general public shall be given in the form of a notice in a local newspaper and shall include at least the information required in subsection (c)(1) to (7).

(e) Comments shall be received by the agency no later than thirty (30) calendar days after the notice provided in subsections (c) and (d) or after the end of the public meeting held pursuant to subsection (g), if any, whichever occurs later.

(f) Information on the release, the proposed corrective action plan, and the agency's tentative decision on the plan shall be made available to the public for inspection upon request.

(g) Before approving a corrective action plan, the agency may conduct a public meeting to provide information and receive comments on the proposed plan. A meeting will be held if there is sufficient public interest. Public interest shall be indicated by written request to the agency.

(h) At the Administrator's discretion, a notice of final decision may be issued.

§ 50168 to § 50169. [Reserved.]

ARTICLE 7
OUT-OF-SERVICE UST SYSTEMS AND CLOSURE

§ 50170. Temporary Closure
§ 50171. Permanent Closure and Change-in-Service
§ 50172. Assessing the Site at Closure or Change-in-Service
§ 50173. Applicability to Previously Closed UST Systems
§ 50174. Closure Records
§ 50175. Closure--Code of Practice
§ 50176 - § 50189. [Reserved.]

§ 50170. Temporary Closure.

(a) When an UST system is temporarily closed, owners and operators must continue operation and maintenance of corrosion protection in accordance with § 50131, and applicable release detection in accordance with Article 4. Articles 5 and 6 must be complied with if a release is suspected or confirmed. Spill and overfill operation and maintenance testing and inspections in Article 3 are not required during temporary closure. If the UST system is empty, release detection and release detection operation and maintenance testing and inspections in Articles 3 and 4 are not required. The UST system is empty when all materials have been removed using commonly employed practices so that no more than 2.5 centimeters (one inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remain in the system.

(b) When an UST system is temporarily closed for ninety (90) calendar days or more, owners and operators must also comply with the following requirements:

(1) Leave vent lines open and functioning; and

(2) Cap and secure all other lines, pumps, manways, and ancillary equipment.

(c) When an UST system is temporarily closed for more than twelve (12) months, owners and operators must permanently close the UST system if it does not meet the applicable design, construction, and installation requirements in Article 2, except that the spill and overfill equipment requirements do not have to be met. Owners and operators must

permanently close the substandard UST systems at the end of this twelve-month period in accordance with §§ 50171 to 50174, unless the agency provides an extension of the twelve-month temporary closure period. Owners and operators must complete a site assessment in accordance with § 50172 before such an extension can be applied for.

§ 50171. Permanent Closure and Change-in-Service.

(a) At least thirty (30) calendar days before beginning either permanent closure or a change-in-service of an UST or tank system under subsections (c) and (d), owners and operators must notify the agency in writing of their intent to permanently close or make the change-in-service, unless such action is in response to a confirmed release. The required assessment of the excavation zone under § 50172 must be performed after notifying the agency but before completion of the permanent closure or change-in-service.

(b) At least seven (7) calendar days before excavation work for a permanent closure or change-in-service, owners or operators must notify the agency of the exact date that the work will occur.

(c) To permanently close an UST or tank system, owners and operators must:

(1) Empty and clean the UST and tank system by removing all liquids and accumulated sludge;

(2) Remove the UST or tank system from the ground, fill the UST or tank system with an inert solid material, or close the tank in place in a manner approved by the agency; and

(3) Conduct a site assessment in accordance with § 50172.

(d) Continued use of an UST system to store a non-regulated substance is considered a change-in-service. Before a change-in-service, owners and operators must:

(1) Empty and clean the UST and tank system by removing all liquids and accumulated sludge; and

(2) Conduct a site assessment in accordance with § 50172.

(e) Within thirty (30) calendar days of completing a permanent closure or change-in-service, owners and operators must submit a notification to the

agency indicating completion of the closure or change-in-service.

§ 50172. Assessing the Site at Closure or Change-in-Service.

(a) Before permanent closure or a change-in-service is completed, owners and operators must measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the method of closure, the nature of the stored substance, the types of backfill and surrounding soil, the depth and flow of groundwater, and other factors appropriate for identifying the presence of a release.
(b) If contaminated soils, contaminated groundwater, or free product as a liquid or vapor is discovered under subsection (a), or by any other manner, owners and operators must begin release response action in accordance with Article 6.

§ 50173. Applicability to Previously Closed UST Systems.

(a) When directed by the agency, the owner and operator of an UST system permanently closed before December 22, 1988 must assess the excavation zone and close the UST system in accordance with this Article if releases from the UST may, in the judgment of the agency, pose a current or potential threat to human health and the environment.
(b) When directed by the agency, the owner and operator of an UST system with field-constructed tanks or an airport hydrant fuel distribution system permanently closed before October 13, 2015, must assess the excavation zone and close the UST system in accordance with this Article if releases from the UST may, in the judgment of the agency, pose a current or potential threat to human health and the environment.

§ 50174. Closure Records.

Owners and operators must maintain records in accordance with § 50134 that are capable of demonstrating compliance with closure requirements

under this Article. The results of the excavation zone assessment required in § 50172 must be maintained for at least three (3) years after completion of permanent closure or change-in-service in one of the following ways:

(1) By the owners and operators who took the UST system out of service;

(2) By the current owners and operators of the UST system site; or

(3) By mailing these records to the agency if they cannot be maintained at the closed facility.

§ 50175. Closure--Code of Practice.

The following current cleaning and closure procedures may be used to comply with § 50171:

(1) American Petroleum Institute Recommended Practice RP 1604, "Closure of Underground Petroleum Storage Tanks";

(2) American Petroleum Institute Standard 2015, "Safe Entry and Cleaning of Petroleum Storage Tanks, Planning and Managing Tank Entry From Decommissioning Through Recommissioning";

(3) American Petroleum Institute Recommended Practice 2016, "Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks";

(4) American Petroleum Institute Recommended Practice RP 1631, "Interior Lining and Periodic Inspection of Underground Storage Tanks", may be used as guidance for compliance with this section;

(5) National Fire Protection Association Standard 326, "Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair"; and

(6) National Institute for Occupational Safety and Health Publication 80–106, "Criteria for a Recommended Standard...Working in Confined Space", may be used as guidance for conducting safe closure procedures at some

tanks containing hazardous substances.

§§ 50176 to 50189. [Reserved.]

ARTICLE 8
FINANCIAL RESPONSIBILITY

§ 50190. Applicability
§ 50191. [Reserved]
§ 50192. Definition of Terms
§ 50193. Amount and Scope of Required Financial Responsibility
§ 50194. Allowable Mechanism and Combinations of Mechanisms
§ 50195. Financial Test of Self-Insurance
§ 50196. Guarantee
§ 50197. Insurance and Risk Retention Group Coverage
§ 50198. Surety Bond
§ 50199. Letter of Credit
§ 501100 to § 501101. [Reserved]
§ 501102. Trust Fund
§ 501103. Standby Trust Fund
§ 501104. Local Government Bond Rating Test
§ 501105. Local Government Financial Test
§ 501106. Local Government Guarantee
§ 501107. Local Government Fund
§ 501108. Substitution of Financial Assurance Mechanisms by Owner or Operator
§ 501109. Cancellation or Non-renewal by a Provider of Financial Assurance
§ 501110. Reporting by Owner or Operator
§ 501111. Record Keeping
§ 501112. Drawing of Financial Assurance Mechanisms
§ 501113. Release from the Requirements
§ 501114. Bankruptcy or Other Incapacity of Owner or Operator or Provider of Financial Assurance

§ 501115. Replenishment of Guarantee, Letters of Credit, or Surety Bond
§ 501116. to § 501199 [Reserved]

§ 50190. Applicability.

(a) This Article applies to owners and operators of all petroleum underground storage tank (UST) systems except as otherwise provided in this section.
(b) State and federal government entities whose debts and liabilities are the debts and liabilities of a state or the United States are exempt from the requirements of this Article.
(c) The requirements of this Article do not apply to owners and operators of any UST system described in § 50110(b), (c)(1), (c)(3), or (c)(4).
(d) If the owner and operator of a petroleum underground storage tank system are separate persons, only one person is required to demonstrate financial responsibility; however, both parties are liable in the event of noncompliance.

§ 50191. [Reserved.]

§ 50192. Definition of Terms.

When used in this Article, the following terms have the meanings given below:

"Accidental release" means any sudden or nonsudden release of petroleum arising from operating an underground storage tank system that results in a need for release response action and/or compensation for bodily injury or property damage neither expected nor intended by the tank system owner or operator.

"Bodily injury" shall have the meaning given to this term by applicable state law; however, this term shall not include those liabilities which, consistent with standard insurance industry practices, are excluded from coverage in liability insurance policies for bodily injury.

"Chief financial officer" in the case of local government owners and

operators, means the individual with the overall authority and responsibility for the collection, disbursement, and use of funds by the local government.

"Controlling interest" means direct ownership of at least fifty percent of the voting stock of another entity.

"Financial reporting year" means the latest consecutive twelve-month period for which any of the following reports used to support a financial test is prepared:

(1) A 10-K report submitted to the U.S. Securities and Exchange Commission;

(2) An annual report of tangible net worth submitted to Dun and Bradstreet; or

(3) Annual reports submitted to the Energy Information Administration or the Rural Utilities Service.

"Financial reporting year" may thus comprise a fiscal or a calendar year period.

"Legal defense cost" is any expense that an owner or operator or provider of financial assurance incurs in defending against claims or actions brought:

(1) By EPA or the state to require release response action or to recover the costs of release response action;

(2) By or on behalf of a third party for bodily injury or property damage caused by an accidental release; or

(3) By any person to enforce the terms of a financial assurance mechanism.

"Occurrence" means an accident, including continuous or repeated exposure to conditions, which results in a release from an underground storage tank system. This definition is intended to assist in the understanding of these regulations and is not intended either to limit the meaning of "occurrence" in a way that conflicts with standard insurance usage or to prevent the use of other standard insurance terms in place of "occurrence".

"Owner or operator", when the owner or operator is separate parties, refers to the party that is obtaining or has obtained financial assurances.

"Petroleum marketing facilities" include all facilities at which petroleum is produced or refined and all facilities from which petroleum is sold or transferred to other petroleum marketers or to the public.

"Property damage" shall have the meaning given this term by applicable state law. This term shall not include those liabilities which, consistent with standard insurance industry practices, are excluded from coverage in liability insurance policies for property damage. However, such exclusions for property damage shall not include response actions associated with releases from USTs or tank systems which are covered by the policy.

"Provider of financial assurance" means an entity that provides financial assurance to an owner or operator of an underground storage tank system through one of the financial mechanisms listed in §§ 50195 through 501107, including a guarantor, insurer, risk retention group, surety, issuer of a letter of credit, issuer of a state-required mechanism, or a state.

"Substantial business relationship" means the extent of a business relationship necessary under applicable state law to make a guarantee contract issued incident to that relationship valid and enforceable. A guarantee contract is issued "incident to that relationship" if it arises from and depends on existing economic transactions between the guarantor and the owner or operator.

"Substantial governmental relationship" means the extent of a governmental relationship necessary under applicable state law to make an added guarantee contract issued incident to that relationship valid and enforceable. A guarantee contract is issued "incident to that relationship" if it arises from a clear commonality of interest in the event of an UST or tank system release such as coterminous boundaries, overlapping constituencies, common groundwater aquifer, or other relationship other than monetary compensation that provides a motivation for the guarantor to provide a guarantee.

"Tangible net worth" means the tangible assets that remain after deducting liabilities; such assets do not include intangibles such as goodwill and rights to patents or royalties. For purposes of this definition, "assets" means all existing and all probable future economic benefits

obtained or controlled by a particular entity as a result of past transactions.

"Termination" under § 50197(b)(1) and (2) means only those changes that could result in a gap in coverage as where the insured has not obtained substitute coverage or has obtained substitute coverage with a different retroactive date than the retroactive date of the original policy.

§ 50193. Amount and Scope of Required Financial Responsibility.

(a) Owners or operators of petroleum USTs or tank systems must demonstrate financial responsibility for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum USTs or tank systems in at least the following per-occurrence amounts:

(1) For owners or operators of petroleum USTs or tank systems that are located at petroleum marketing facilities, or that handle an average of more than ten thousand gallons of petroleum per month based on annual throughput for the previous calendar year: $2,000,000; and

(2) For all other owners or operators of petroleum USTs or tank systems: $500,000.

(b) Owners or operators of petroleum USTs or tank systems must demonstrate financial responsibility for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum USTs or tank systems in at least the following annual aggregate amounts:

(1) For owners or operators of one to four petroleum USTs: $1,000,000; and

(2) For owners or operators of five or more petroleum USTs: $2,000,000.

(c) For the purposes of subsections (b) and (f) only, "a petroleum underground storage tank" or "a petroleum UST" means a single containment unit and does not mean combinations of single containment units.

(d) Except as provided in subsection (e), if the owner or

operator uses separate mechanisms or separate combinations of mechanisms to demonstrate financial responsibility for:

(1) Taking corrective action;

(2) Compensating third parties for bodily injury and property damage caused by sudden accidental releases; or

(3) Compensating third parties for bodily injury and property damage caused by nonsudden accidental releases, the amount of assurance provided by each mechanism or combination of mechanisms must be in the full amount specified in subsections (a) and (b).

(e) If an owner or operator uses separate mechanisms or separate combinations of mechanisms to demonstrate financial responsibility for different petroleum underground storage tanks, the annual aggregate required shall be based on the number of tanks covered by each such separate mechanism or combination of mechanisms.

(f) Owners or operators shall review the amount of aggregate assurance provided whenever additional petroleum underground storage tanks are acquired or installed. If the number of petroleum underground storage tanks for which assurance must be provided exceeds one hundred, the owner or operator shall demonstrate financial responsibility in the amount of at least $2,000,000 of annual aggregate assurance by the anniversary of the date on which the mechanism demonstrating financial responsibility became effective. If assurance is being demonstrated by a combination of mechanisms, the owner or operator shall demonstrate financial responsibility in the amount of at least $2,000,000 of annual aggregate assurance by the first-occurring effective date anniversary of any one of the mechanisms combined (other than a financial test or guarantee) to provide assurance.

(g) The amounts of assurance required under this section exclude legal defense costs.

(h) The required per-occurrence and annual aggregate coverage amounts do not in any way limit the liability of the owner or operator.

§ 50194. Allowable Mechanism and Combinations of Mechanisms.

(a) Subject to the limitations of subsections (b) and (c):

(1) An owner or operator, including a local government owner or operator, may use any one or combination of the mechanisms listed in §§ 50195 through 501103 to demonstrate financial responsibility under this Article for one or more USTs or tank systems; and

(2) A local government owner or operator may use any one or combination of the mechanisms listed in §§ 501104 through 501107 to demonstrate financial responsibility under this subchapter for one or more USTs or tank systems.

(b) An owner or operator may use a guarantee under § 50196 or surety bond under § 50198 to establish financial responsibility only if the State Attorney General has submitted a written statement to the administrator that a guarantee or surety bond executed as described in this section is a legally valid and enforceable obligation in the State.

(c) An owner or operator may use self-insurance in combination with a guarantee only if, for the purpose of meeting the requirements of the financial test under this rule, the financial statements of the owner or operator are not consolidated with the financial statements of the guarantor.

§ 50195. Financial Test of Self-Insurance.

(a) An owner or operator, and/or guarantor, may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by passing a financial test as specified in this section. To pass the financial test of self-insurance, the owner or operator, and/or guarantor, must meet the criteria of subsection (b) or (c) based on year-end financial statements for the latest completed fiscal year.

(b) (1) The owner or operator, and/or guarantor, must have a tangible net worth of at least ten times:

(A) The total of the applicable aggregate amount required by § 50193, Guam Administrative Rules and Regulations, based on the number of underground storage tanks for which a financial test is used to

demonstrate financial responsibility to the agency, to EPA, or to a state implementing agency under a state program approved by EPA under 40 C.F.R. part 281;

(B) The sum of the RCRA subtitle C corrective action cost estimates, the current closure and post-closure care cost estimates, and amount of liability coverage for which a financial test is used to demonstrate financial responsibility to demonstrate financial responsibility to the agency under 40 C.F.R. sections 261.143 and 261.147, as incorporated and amended in section 11-261.1-1, 40 C.F.R. sections 264.101, 264.143, 264.145, and 264.147, as incorporated and amended in section 11-264.1-1, and 40 C.F.R. sections 265.143, 265.145, and 265.147, as incorporated and amended in section 11-265.1-1, to EPA under 40 C.F.R. sections 261.143, 261.147, 264.101, 264.143, 264.145, 264.147, 265.143, 265.145, and 265.147, or to a state implementing agency under a state program authorized by EPA under 40 C.F.R. part 271; and

(C) The sum of current plugging and abandonment cost estimates for which a financial test is used to demonstrate financial responsibility to EPA under 40 C.F.R. section 144.63 or to a state implementing agency under a state program authorized by EPA under 40 C.F.R. part 145.

(2) The owner or operator, and/or guarantor, must have a tangible net worth of at least $10,000,000.

(3) The owner or operator, and/or guarantor, must have a letter signed by the chief financial officer worded as specified in subsection (d).

(4) The owner or operator, and/or guarantor, must either:

(A) File financial statements annually with the U.S. Securities and Exchange Commission, the Energy Information Administration, or the Rural Utilities Service; or

(B) Report annually the firm's tangible net worth to Dun and Bradstreet, and Dun and Bradstreet must have assigned the firm a financial strength rating of 4A or 5A.

(5) The firm's year-end financial statements, if independently audited, cannot include an adverse auditor's opinion, a disclaimer of opinion, or a "going concern" qualification.

(c) (1) The owner or operator, and/or guarantor, must meet the financial test requirements of 40 C.F.R. section 264.147(f)(1), substituting the appropriate amounts specified in § 50193(b)(1) and (2), Guam Administrative Rules and Regulations for the "amount of liability coverage" each time specified in that section.

(2) The fiscal year-end financial statements of the owner or operator, and/or guarantor, must be examined by an independent certified public accountant and be accompanied by the accountant's report of the examination.

(3) The firm's year-end financial statements cannot include an adverse auditor's opinion, a disclaimer of opinion, or a "going concern" qualification.

(4) The owner or operator, and/or guarantor, must have a letter signed by the chief financial officer, worded as specified in subsection (d).

(5) If the financial statements of the owner or operator, and/or guarantor, are not submitted annually to the U.S. Securities and Exchange Commission, the Energy Information Administration or the Rural Utilities Service, the owner or operator, and/or guarantor, must obtain a special report by an independent certified public accountant stating that:

(A) The accountant has compared the data that the letter from the chief financial officer specifies as having been derived from the latest year-end financial statements of the owner or operator, and/or guarantor, with the amounts in such financial statements; and

(B) In connection with that comparison, no matters came

to the accountant's attention, which caused the accountant to believe that the specified data should be adjusted.

(d) To demonstrate that it meets the financial test under subsection (b) or (c), the chief financial officer of the owner or operator, or guarantor, must sign, within one hundred twenty days of the close of each financial reporting year, as defined by the twelve-month period for which financial statements used to support the financial test are prepared, a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of the owner or operator, or guarantor]. This letter is in support of the use of [insert: "the financial test of self-insurance" or "guarantee" or both] to demonstrate financial responsibility for [insert: "taking corrective action" or "compensating third parties for bodily injury and property damage" or both] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s).

Underground storage tanks at the following facilities are assured by this financial test, or a corresponding financial test under EPA or another authorized state program, by this [insert: "owner or operator" or "guarantor"]:

[List for each facility: the name and address of the facility where tanks assured by this financial test are located, and whether tanks are assured by this financial test or a corresponding financial test under EPA or under a state program approved under 40 C.F.R. part 281. If separate mechanisms or combinations of mechanisms are being used to assure any of the tanks at this facility, list each tank assured by this financial test by the tank identification number provided in the notification submitted pursuant to 40 C.F.R. section 280.22, or in the permit applications submitted under §§ 501324 and

501326, Guam Administrative Rules and Regulations

A [insert: "financial test" and/or "guarantee"] is also used by this [insert: "owner or operator" or "guarantor"] to demonstrate evidence of financial responsibility in the following amounts under other EPA regulations or state programs authorized by EPA under 40 C.F.R. parts 271 and 145:

	Amount
EPA Regulations:	
Closure (§§261.143, 264.143, and 265.143)	$
Post-Closure Care (§§264.145 and 265.145)	
Liability Coverage (§§261.147, 264.147, and 265.147)	$
Corrective Action (§264.101(b))	
Plugging and Abandonment (§144.63)	$
	$
	$
Authorized State Programs:	
Closure	$
Post-Closure Care	$
Liability Coverage	$
Corrective Action	$
Plugging and Abandonment	$
TOTAL	$

This [insert: "owner or operator" or "guarantor"] has not received an adverse opinion, a disclaimer of opinion, or a "going concern" qualification from an independent auditor on his or her financial statements for the latest completed fiscal year.

[Fill in the information for Alternative I if the criteria of subsection (b) are being used to demonstrate compliance with the financial test requirements. Fill in the information for Alternative II if the criteria of

subsection (c) are being used to demonstrate compliance with the financial test requirements.]

ALTERNATIVE I

	Amount	
1. Amount of annual UST aggregate coverage being assured by a financial test, or guarantee or both	$	
2. Amount of corrective action, closure and post-closure care costs, liability coverage, and plugging and abandonment costs covered by a financial test, or guarantee or both	$	
3. Sum of lines 1 and 2	$	
4. Total tangible assets	$	
5. Total liabilities [if any of the amount reported on line 3 is included in total liabilities, you may deduct that amount from this line and add that amount to line 6]	$	
6. Tangible net worth [subtract line 5 from line 4]	$	
7. Is line 6 at least $10,000,000?	Yes	No
8. Is line 6 at least ten times line 3?	Yes	No
9. Have financial statements for the latest fiscal year been filed with the U.S. Securities and Exchange Commission?	Yes	No
10. Have financial statements for the latest fiscal year been filed with the federal Energy Information Administration?	Yes	No
11. Have financial statements for the latest fiscal year been filed with the federal Rural Utilities Service?	Yes	No
12. Has financial information been provided to Dun and Bradstreet, and has Dun and Bradstreet provided a financial strength rating of 4A or 5A? [Answer "Yes" only if both criteria have been met.]	Yes	No

ALTERNATIVE II

	Amount	
1. Amount of annual UST aggregate coverage being assured by a financial test, or guarantee or both	$	
2. Amount of corrective action, closure and post-closure care costs, liability coverage, and plugging and abandonment costs covered by a financial test, or guarantee or both	$	
3. Sum of lines 1 and 2	$	
4. Total tangible assets	$	
5. Total liabilities [if any of the amount reported on line 3 is included in total liabilities, you may deduct that amount from this line and add that amount to line 6]	$	
6. Tangible net worth [subtract line 5 from line 4]	$	
7. Total assets in the U.S. [required only if less than ninety per cent of assets are located in the U.S.]	$	
8. Is line 6 at least $10,000,000?	Yes	No
9. Is line 6 at least six times line 3?	Yes	No
10. Are at least ninety per cent of assets located in the U.S.? [If "No," complete line 11]	Yes	No
11. Is line 7 at least six times line 3?	Yes	No
[Fill in either lines 12-15 or lines 16-18:]		
12. Current assets	$	
13. Current liabilities	$	
14. Net working capital [subtract line 13 from line 12]	$	
15. Is line 14 at least six times line 3?	Yes	No
16. Current bond rating of most recent bond issue		

17. Name of rating service

18. Date of maturity of bond

19. Have financial statements for the latest fiscal year been filed with the U.S. Securities and Exchange Commission, the federal Energy Information Administration, or the federal Rural Utilities Service? Yes No

[If "No," please attach a report from an independent certified public accountant certifying that there are no material differences between the data as reported in lines 4-18 above and the financial statements for the latest fiscal year.]

[For both Alternative II and I complete the certification with this statement.]

I hereby certify that the wording of this letter is identical to the wording specified in § 50195(d), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Signature]
[Name]
[Title]
[Date]

(e) If an owner or operator using the test to provide financial assurance finds that he or she no longer meets the requirements of the financial test based on the year-end financial statements, the owner or operator must obtain alternative coverage within one hundred fifty days of the end of the year for which financial statements have been prepared.

(f) The Administrator may require reports of financial condition at any time from the owner or operator, and/or guarantor. If the Administrator finds, on the basis of such reports or other information, that the owner or operator, and/or guarantor, no longer meets the financial test requirements of subsections (b) or (c) and (d), the owner or operator must

obtain alternate coverage within thirty days after notification of such a finding.

(g) If the owner or operator fails to obtain alternate assurance within one hundred fifty days of finding that he or she no longer meets the requirements of the financial test based on the year-end financial statements, or within thirty days of notification by the Administrator that he or she no longer meets the requirements of the financial test, the owner or operator must notify the Administrator of such failure within ten days.

§ 50196. Guarantee.

(a) An owner or operator may satisfy the requirements of § 50193 by obtaining a guarantee that conforms to the requirements of this section. The guarantor must be:

(1) A firm that:

(A) Possesses a controlling interest in the owner or operator;

(B) Possesses a controlling interest in a firm described under subparagraph (A); or

(C) Is controlled through stock ownership by a common parent firm that possesses a controlling interest in the owner or operator; or

(2) A firm engaged in a substantial business relationship with the owner or operator and issuing the guarantee as an act incident to that business relationship.

(b) Within one hundred twenty days of the close of each financial reporting year the guarantor must demonstrate that it meets the financial test criteria of § 50195, Guam Administrative Rules and Regulations based on year-end financial statements for the latest completed financial reporting year by completing the letter from the chief financial officer described in § 50195(d), Guam Administrative Rules and Regulations and must deliver the letter to the owner or operator. If the guarantor fails to meet the requirements of the financial test at the end of any financial reporting year, within one hundred twenty days of the end of that financial reporting year the guarantor shall send by certified mail,

before cancellation or nonrenewal of the guarantee, notice to the owner or operator. If the Administrator notifies the guarantor that it no longer meets the requirements of the financial test of § 50195(b) or (c) and (d), Guam Administrative Rules and Regulations, the guarantor must notify the owner or operator within ten days of receiving such notification from the Administrator. In both cases, the guarantee will terminate no less than one hundred twenty days after the date the owner or operator receives the notification, as evidenced by the return receipt. The owner or operator must obtain alternative coverage as specified in § 501114(e), Guam Administrative Rules and Regulations.

(c) The guarantee must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

GUARANTEE

Guarantee made this [date] by [name of guaranteeing entity], a business entity organized under the laws of the State of [name of state], herein referred to as guarantor, to Guam Environmental Protection Agency and to any and all third parties, and obligees, on behalf of [owner or operator] of [business address].

Recitals.

(1) Guarantor meets or exceeds the financial test criteria of § 50195(b) or (c) and (d), Guam Administrative Rules and Regulations , and agrees to comply with the requirements for guarantors as specified in § 50196(b), Guam Administrative Rules and Regulations.

(2) [Owner or operator] owns or operates the following underground storage tank(s) covered by this guarantee: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. section 280.22, or in the permit

applications submitted under §§ 501324 and 501326 and the name and address of the facility.] This guarantee satisfies Article 8 of Guam Administrative Rules and Regulations, requirements for assuring funding for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the above-identified underground storage tank(s) in the amount of [insert dollar amount] per occurrence and [insert dollar amount] annual aggregate.

(3) [Insert appropriate phrase: "On behalf of our subsidiary" (if guarantor is corporate parent of the owner or operator); "On behalf of our affiliate" (if guarantor is a related firm of the owner or operator); or "Incident to our business relationship with" (if guarantor is providing the guarantee as an incident to a substantial business relationship with owner or operator)] [owner or operator], guarantor guarantees to Guam Environmental Protection Agency and to any and all third parties that:

In the event that [owner or operator] fails to provide alternative coverage within sixty days after receipt of a notice of cancellation of this guarantee and the Administrator of Guam Environmental Protection Agency has determined or suspects that a release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon instructions from the Administrator of Guam Environmental Protection Agency, shall fund a standby trust fund in accordance with the provisions of § 501112 Guam Administrative Rules and Regulations, in an amount not to exceed the coverage limits specified above.

In the event that the Administrator of Guam Environmental Protection Agency determines that [owner or operator] has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with Article 6 Guam Administrative Rules and Regulations, the guarantor, upon written instructions from the Administrator of Guam Environmental Protection Agency, shall fund a standby trust in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, in an amount not to

exceed the coverage limits specified above.

If [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by ["sudden" and/or "nonsudden"] accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written instructions from the Administrator of Guam Environmental Protection Agency, shall fund a standby trust in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, to satisfy such judgment(s), award(s), or settlement agreement(s) up to the limits of coverage specified above.

(4) Guarantor agrees that if, at the end of any fiscal year before cancellation of this guarantee, the guarantor fails to meet the financial test criteria of § 50195(b) or (c) and (d), Guam Administrative Rules and Regulations, guarantor shall send within one hundred twenty days of such failure, by certified mail, notice to [owner or operator]. The guarantee will terminate one hundred twenty days from the date of receipt of the notice by [owner or operator], as evidenced by the return receipt.

(5) Guarantor agrees to notify [owner or operator] by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within ten days after commencement of the proceeding.

(6) Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of [owner or operator] pursuant to Title 22, Guam Administrative Rules and Regulations, Chapter 50.

(7) Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] must comply with the applicable financial responsibility requirements of Article 8, Guam Administrative Rules and Regulations, for the above-identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to [owner or operator], such cancellation to become effective no earlier than one hundred twenty days after receipt of such notice by [owner or operator],

as evidenced by the return receipt.

(8) The guarantor's obligation does not apply to any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily damage or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

(9) Guarantor expressly waives notice of acceptance of this guarantee by the Guam Environmental Protection Agency, by any or all third parties, or by [owner or operator].

I hereby certify that the wording of this guarantee is identical to the wording specified in § 50196(c) Guam Administrative Rules and Regulations, as such regulations were constituted on the effective date shown immediately below.

Effective date:
[Name of guarantor]
[Authorized signature for guarantor]
[Name of person signing]
[Title of person signing]

Signature of witness or notary:

(d) An owner or operator who uses a guarantee to satisfy the requirements of § 50193 Guam Administrative Rules and Regulations must establish a standby trust fund when the guarantee is obtained. Under the terms of the guarantee, all amounts paid by the guarantor under the guarantee will be deposited directly into the standby trust fund in accordance with instructions from the Administrator of Guam Environmental Protection Agency under § 501112. This standby trust fund must meet the requirements specified in § 501103.

§ 50197. Insurance and Risk Retention Group Coverage.

(a) An owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by obtaining liability insurance that conforms to the requirements of this section from a qualified insurer or risk retention group. Such insurance may be in the form of a separate insurance policy or an endorsement to an existing insurance policy.

(b) Each insurance policy must be amended by an endorsement worded as specified in paragraph (l) or evidenced by a certificate of insurance worded as specified in paragraph (2), except that instructions in brackets must be replaced with the relevant information and the brackets deleted:

(1) ENDORSEMENT

Name: [name of each covered location]
Address: [address of each covered location]
Policy Number:
Period of Coverage: [current policy period]
Name of [Insurer or Risk Retention Group]:
Address of [Insurer or Risk Retention Group]:
Name of Insured:
Address of Insured:

Endorsement:

1. This endorsement certifies that the policy to which the endorsement is attached provides liability insurance covering the following underground storage tanks:

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility.] for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; in accordance with and subject to the limits of liability, exclusions, conditions, and other terms of the policy; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tank(s) identified above.

The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's or Group's liability; if the amount of coverage is different for different types of coverage or for different underground storage tanks or locations, indicate the amount of coverage for each type of coverage, and/or for each underground storage tank or location], exclusive of legal defense costs, which are subject to a separate limit under the policy. This coverage is provided under [policy number]. The effective date of said policy is [date].

2. The insurance afforded with respect to such

occurrences is subject to all of the terms and conditions of the policy; provided, however, that any provisions inconsistent with subsections (a) to (e) of this paragraph are hereby amended to conform with subsections (a) to (e);

a. Bankruptcy or insolvency of the insured shall not relieve the ["Insurer" or "Group"] of its obligations under the policy to which this endorsement is attached.

b. The ["Insurer" or "Group"] is liable for the payment of amounts within any deductible applicable to the policy to the provider of corrective action or a damaged third-party, with a right of reimbursement by the insured for any such payment made by the ["Insurer" or "Group"]. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated under another mechanism or combination of mechanisms as specified in §§ 50195 to 501102 and §§ 501104 to 501107, Guam Administrative Rules and Regulations.

c. Whenever requested by the Administrator of Guam Environmental Protection Agency, the ["Insurer" or "Group"] agrees to furnish to the Administrator of Guam Environmental Protection Agency a signed duplicate original of the policy and all endorsements.

d. Cancellation or any other termination of the insurance by the ["Insurer" or "Group"], except for non-payment of premium or misrepresentation by the insured, will be effective only upon written notice and only after the expiration of sixty days after a copy of such written notice is received by the insured. Cancellation for non-payment of premium or misrepresentation by the insured will be effective only upon written notice and only after expiration of a minimum of ten days after a copy of such written notice is received by the insured. Insert for claims-

made policies:

e. The insurance covers claims otherwise covered by the policy that are reported to the ["Insurer" or "Group"] within six months of the effective date of cancellation or non-renewal of the policy except where the new or renewed policy has the same retroactive date or a retroactive date earlier than that of the prior policy, and which arise out of any covered occurrence that commenced after the policy retroactive date, if applicable, and prior to such policy renewal or termination date. Claims reported during such extended reporting period are subject to the terms, conditions, limits, including limits of liability, and exclusions of the policy.]

I hereby certify that the wording of this instrument is identical to the wording in § 50197(b)(1) , Guam Administrative Rules and Regulations, and that the ["Insurer" or "Group"] is ["licensed to transact the business of insurance or eligible to provide insurance as an excess or surplus lines insurer in Guam"].

[Signature of authorized representative of Insurer or Risk Retention Group]
[Name of person signing]
[Title of person signing], Authorized Representative of [name of Insurer or Risk Retention Group]
[Address of Representative]

(2) CERTIFICATE OF INSURANCE

Name: [name of each covered location]
Address: [address of each covered location]
Policy Number:

Endorsement (if applicable):
Period of Coverage: [current policy period]
Name of [Insurer or Risk Retention Group]:
Address of [Insurer or Risk Retention Group]:
Name of Insured:
Address of Insured:

Certification:

1. [Name of Insurer or Risk Retention Group], [the "Insurer" or "Group"], as identified above, hereby certifies that it has issued liability insurance covering the following underground storage tank(s):

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility.] for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; in accordance with and subject to the limits of liability, exclusions, conditions, and other terms of the policy; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tank(s) identified above.

The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's or Group's liability; if the amount of coverage is different for different types of coverage or for different

underground storage tanks or locations, indicate the amount of coverage for each type of coverage and/or for each underground storage tank or location], exclusive of legal defense costs, which are subject to a separate limit under the policy. This coverage is provided under [policy number]. The effective date of said policy is [date].

2. The ["Insurer" or "Group"] further certifies the following with respect to the insurance described in Paragraph 1:

a. Bankruptcy or insolvency of the insured shall not relieve the ["Insurer" or "Group"] of its obligations under the policy to which this certificate applies.

b. The ["Insurer" or "Group"] is liable for the payment of amounts within any deductible applicable to the policy to the provider of corrective action or a damaged third-party, with a right of reimbursement by the insured for any such payment made by the ["Insurer" or "Group"]. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated under another mechanism or combination of mechanisms as specified in §§ 50195 to 501102 and 501104 to 501107, Guam Administrative Rules and Regulations.

c. Whenever requested by the Administrator of Guam Environmental Protection Agency, the ["Insurer" or "Group"] agrees to furnish to the Administrator a signed duplicate original of the policy and all endorsements.

d. Cancellation or any other termination of the insurance by the ["Insurer" or "Group"], except for non-payment of premium or misrepresentation by the insured, will be effective only upon written notice and only after the expiration of sixty days after a copy of such written notice is received by the insured. Cancellation for non-payment of premium or

misrepresentation by the insured will be effective only upon written notice and only after expiration of a minimum of ten days after a copy of such written notice is received by the insured. Insert for claims-made policies:

e. The insurance covers claims otherwise covered by the policy that are reported to the ["Insurer" or "Group"] within six months of the effective date of cancellation or non-renewal of the policy except where the new or renewed policy has the same retroactive date or a retroactive date earlier than that of the prior policy, and which arise out of any covered occurrence that commenced after the policy retroactive date, if applicable, and prior to such policy renewal or termination date. Claims reported during such extended reporting period are subject to the terms, conditions, limits, including limits of liability, and exclusions of the policy.]

I hereby certify that the wording of this instrument is identical to the wording in § 50197(b)(2), Guam Administrative Rules and Regulations, and that the ["Insurer" or "Group"] is ["licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in Guam"].

[Signature of authorized representative of Insurer]
[Type Name]
[Title], Authorized Representative of [name of Insurer or Risk Retention Group]
[Address of Representative]

(c) Each insurance policy must be issued by an insurer or a risk retention group that, at a minimum, is licensed to transact the business of

insurance or eligible to provide insurance as an excess or surplus lines insurer in Guam.

§ 50198. Surety Bond.

(a) An owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by obtaining a surety bond that conforms to the requirements of this section. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in the latest Circular 570 of the U.S. Department of the Treasury.

(b) The surety bond must be worded as follows, except that instructions in brackets must be replaced with the relevant information and the brackets deleted:

PERFORMANCE BOND

Date bond executed:
Period of coverage:
Principal: [legal name and business address of owner or operator]
Type of organization: [insert: "individual", "joint venture", "partnership", or "corporation"]
State of incorporation (if applicable):
Surety(ies): [name(s) and business address(es)]
Scope of Coverage: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility. List the coverage guaranteed by the bond: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"

"arising from operating the underground storage tank"].
Penal sums of bond:
Per occurrence $
Annual aggregate $
Surety's bond number:

Know All Persons by These Presents, that we, the Principal and Surety(ies), hereto are firmly bound to the Guam Environmental Protection Agency, in the above penal sums for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sums jointly and severally only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sums only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sums.

Whereas said Principal is required under Article 8, Guam Administrative Rules and Regulations, to provide financial assurance for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tanks identified above, and

Whereas said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

Now, therefore, the conditions of the obligation are such that if the Principal shall faithfully ["take corrective action, in accordance with Article 6, Guam Administrative Rules and Regulations, and the Administrator of Guam Environmental Protection Agency instructions for," and/or "compensate injured third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "sudden and nonsudden accidental

releases"] arising from operating the tank(s) identified above, or if the Principal shall provide alternate financial assurance, as specified in Article 8, Guam Administrative Rules and Regulations, within one hundred twenty days after the date the notice of cancellation is received by the Principal from the Surety(ies), then this obligation shall be null and void; otherwise it is to remain in full force and effect.

Such obligation does not apply to any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by the Administrator of Guam Environmental Protection Agency that the Principal has failed to ["take corrective action, in accordance with Article 6, Guam Administrative Rules and Regulations and the Administrator of Guam Environmental Protection Agency's instructions," and/or "compensate injured third parties"] as guaranteed by this bond, the Surety(ies) shall either perform ["corrective action in accordance with Chapter 50, Guam Administrative Rules and Regulations

and the Administrator of Guam Environmental Protection Agency's instructions," and/or "third party liability compensation"] or place funds in an amount up to the annual aggregate penal sum into the standby trust fund as directed by the Administrator of Guam Environmental Protection Agency under § 501112 , Guam Administrative Rules and Regulations.

Upon notification by the Administrator of Guam Environmental Protection Agency that the Principal has failed to provide alternate financial assurance within sixty days after the date the notice of cancellation is received by the determined or suspects that a release has occurred, the Surety(ies) shall place funds in an amount not exceeding the annual aggregate penal sum into the standby trust fund as directed by the Administrator of Guam Environmental Protection Agency and § 501112, Guam Administrative Rules and Regulations.

The Surety(ies) hereby waive(s) notification of amendments to applicable laws, statutes, rules, and regulations and agrees that no such amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the annual shall the obligation of the Surety(ies) hereunder exceed the amount of said annual aggregate penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal, provided, however, that cancellation shall not occur during the one hundred twenty days beginning on the date of return receipt.

The Principal may terminate this bond by sending written notice to the Surety(ies).

In Witness Thereof, the Principal and Surety(ies) have executed this Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in § 50198(b), Guam Administrative Rules and Regulations, as such regulations were constituted on the date this bond

was executed.

Principal
[Signature(s)]
[Name(s)]
[Title(s)]
[Corporate seal]

Corporate Surety(ies)
[Name and address]
State of Incorporation:
Liability limit: $
[Signature(s)]
[Name(s) and title(s)]
[Corporate seal]

[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]

Bond premium: $

(c) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. In all cases, the surety's liability is limited to the per-occurrence and annual aggregate penal sums.

(d) The owner or operator who uses a surety bond to satisfy the requirements of § 50193, Guam Administrative Rules and Regulations must establish a standby trust fund when the surety bond is acquired. Under the terms of the bond, all amounts paid by the surety under the bond will be deposited directly into the standby trust fund in accordance with instructions from the Administrator of Guam Environmental Protection Agency under § 501112, Guam Administrative Rules and Regulations. This standby trust fund must meet the requirements specified in § 501103, Guam Administrative Rules and Regulations.

§ 50199. Letter of Credit.

(a) An owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by obtaining an irrevocable standby letter of credit that conforms to the requirements of this section. The issuing institution must be an entity that has the authority to issue letters of credit in Guam and whose letter-of-credit operations are regulated and examined by a federal or Guam agency.

(b) The letter of credit must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

IRREVOCABLE STANDBY LETTER OF CREDIT

[Name and address of issuing institution]
[Name and address of the Administrator of Guam Environmental Protection Agency]

Dear Sir or Madam: We hereby establish our Irrevocable Standby Letter of Credit No. _ in your favor, at the request and for the account of [owner or operator name] of [address] up to the aggregate amount of [in words] U.S. dollars ($[insert dollar amount]), available upon presentation of

(1) Your sight draft, bearing reference to this letter of credit, No. _, and

(2) Your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under authority of 10 GCA Chapter 76."

This letter of credit may be drawn on to cover [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] arising from operating the underground storage tank(s) identified below in the amount of [in words] $[insert dollar amount] per occurrence and [in words] $[insert dollar amount] annual aggregate:

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than

one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 C.F.R. 280.22, or permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility.]

The letter of credit may not be drawn on to cover any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

This letter of credit is effective as of [date] and shall expire on [date], but such expiration date shall be automatically extended for a period of [at least the length of the original term] on [expiration date] and on each successive expiration date, unless, at least one hundred twenty days before the current expiration date, we notify [owner or operator] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date. In the event that [owner or operator] is so notified, any unused portion of the credit shall be available upon presentation of your sight draft for one hundred twenty days after the

date of receipt by [owner or operator], as shown on the signed return receipt.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us, and we shall deposit the amount of the draft directly into the standby trust fund of [owner or operator] in accordance with your instructions.

We certify that the wording of this letter of credit is identical to the wording specified in § 50199(b), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Signature(s) and title(s) of official(s) of issuing institution]
[Date]

This credit is subject to [insert: "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce," or "the Uniform Commercial Code"].

(c) An owner or operator who uses a letter of credit to satisfy the requirements of § 50193, Guam Administrative Rules and Regulations must also establish a standby trust fund when the letter of credit is acquired. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the Administrator will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Administrator of Guam Environmental Protection Agency under § 501112, Guam Administrative Rules and Regulations. This standby trust fund must meet the requirements specified in § 501103, Guam Administrative Rules and Regulations.

(d) The letter of credit must be irrevocable with a term specified by the issuing institution. The letter of credit must provide that credit be automatically renewed for the same term as the original term, unless, at least one hundred twenty days before the current expiration date, the issuing institution notifies the owner or operator by certified mail of its decision not to renew the letter of credit. Under the terms of the letter of

credit, the one hundred twenty days will begin on the date when the owner or operator receives the notice, as evidenced by the return receipt.

§ 501100 to § 501101. [Reserved.]

§ 501102. Trust Fund.

(a) An owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by establishing a trust fund that conforms to the requirements of this section. The trustee must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal agency or an agency of the state in which the fund is established.

(b) The wording of the trust agreement must be identical to the wording specified in § 501103(b)(1), Guam Administrative Rules and Regulations, and must be accompanied by a formal certification of acknowledgment as specified in § 501103(b)(2), Guam Administrative Rules and Regulations.

(c) The trust fund, when established, must be funded for the full required amount of coverage, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining required coverage.

(d) If the value of the trust fund is greater than the required amount of coverage, the owner or operator may submit a written request to the Administrator for release of the excess.

(e) If other financial assurance as specified in this subchapter is substituted for all or part of the trust fund, the owner or operator may submit a written request to the Administrator for release of the excess.

(f) Within sixty days after receiving a request from the owner or operator for release of funds as specified in subsection (d) or (e), the Administrator will instruct the trustee to release to the owner or operator such funds as the Administrator specifies in writing.

§ 501103. Standby Trust Fund.

a) An owner or operator using any one of the mechanisms authorized by §§ 50196, 50198, or 50199, Guam Administrative Rules and Regulations must establish a standby trust fund when the mechanism is acquired. The trustee of the standby trust fund must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal agency or an agency of the state in which the fund is established.

(b)(l) The standby trust agreement, or trust agreement, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

TRUST AGREEMENT

Trust agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator], a [name of state] [insert: "corporation", "partnership", "association", or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert: "Incorporated in the State of __" or "a national bank"], the "Trustee".

Whereas, Guam Environmental Protection Agency has established certain regulations applicable to the Grantor, requiring that an owner or operator of an underground storage tank shall provide assurance that funds will be available when needed for corrective action and third-party compensation for bodily injury and property damage caused by sudden and nonsudden accidental releases arising from the operation of the underground storage tank. The attached Schedule A lists the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located that are covered by the [insert "standby" where trust agreement is standby trust agreement] trust agreement;

[Whereas, the Grantor has elected to establish [insert either "a guarantee", "surety bond", or "letter of credit"] to

provide all or part of such financial assurance for the underground storage tanks identified herein and is required to establish a standby trust fund able to accept payments from the instrument (This paragraph is only applicable to the standby trust agreement.)];

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee;

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of the Financial Assurance Mechanism. This Agreement pertains to the [identify the financial assurance mechanism, either a guarantee, surety bond, or letter of credit, from which the standby trust fund is established to receive payments (This paragraph is only applicable to the standby trust agreement.)].

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, the "Fund," for the benefit of Guam Environmental Protection Agency. The Grantor and the Trustee intend that no third party have access to the Fund except as herein provided. [The Fund is established initially as a standby to receive payments and shall not consist of any property.] Payments made by the provider of financial assurance pursuant to the Administrator of Guam Environmental Protection Agency's instruction are transferred to the Trustee and are referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee

pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor as provider of financial assurance, any payments necessary to discharge any liability of the Grantor established by Guam Environmental Protection Agency.

Section 4. Payment for ["Corrective Action" or "Third-Party Liability Claims" or both]. The Trustee shall make payments from the Fund as the Administrator of Guam Environmental Protection Agency shall direct, in writing, to provide for the payment of the costs of [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] arising from operating the tanks covered by the financial assurance mechanism identified in this Agreement.

The Fund may not be drawn upon to cover any of the following:

(a) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert owner or operator] arising from, and in the course of employment by [insert owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert owner or operator] that is not the direct result of a release from a petroleum

underground storage tank;

(e) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193 Guam Administrative Rules and Regulations.

The Trustee shall reimburse the Grantor, or other persons as specified by the Administrator of Guam Environmental Protection Agency, from the Fund for corrective action expenditures and/or third-party liability claims, in such amounts as the Administrator shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the Administrator specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of cash and securities acceptable to the Trustee.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his or her duties with respect to the trust fund solely in the interest of the beneficiaries and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(i) Securities or other obligations of the Grantor, or any

other owner or operator of the tanks, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2(a), shall not be acquired or held, unless they are securities or other obligations of the federal or a state government;

(ii) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the federal or state government; and

(iii) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall

be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the federal or state government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund

shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any questions arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 11. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 12. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in writing sent to the Grantor and the present Trustee by certified mail ten days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in

Section 9.

Section 13. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Schedule B or such other designees as the Grantor may designate by amendment to Schedule B. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the Administrator of Guam Environmental Protection Agency to the Trustee shall be in writing, signed by the Administrator, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the Administrator hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or the Administrator of Guam Environmental Protection Agency, except as provided for herein.

Section 14. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor and the Trustee, or by the Trustee and the Administrator of Guam Environmental Protection Agency if the Grantor ceases to exist.

Section 15. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 14, this Trust shall be irrevocable and shall continue until terminated at the written direction of the Grantor and the Trustee, or by the Trustee and the Administrator of Guam Environmental Protection Agency, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration

expenses, shall be delivered to the Grantor.

Section 16. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the Administrator of Guam Environmental Protection Agency issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 17. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of Guam or the Comptroller of the Currency in the case of National Association banks.

Section 18. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

In Witness whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals (if applicable) to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in § 501103(b)(1), Guam Administrative Rules and Regulations, as such regulations were constituted on the date written above.

[Signature of Grantor]
[Name of the Grantor]

[Title]

Attest:
[Signature of Trustee]
[Name of the Trustee]
[Title]
[Seal]

[Signature of Witness]
[Name of the Witness]
[Title]
[Seal]

(2) The standby trust agreement, or trust agreement, must be accompanied by a formal certification of acknowledgment similar to the following:

State of ___
County of ___

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation; and that she/he signed her/his name thereto by like order.

[Signature of Notary Public]
[Name of Notary Public]

(c) The Administrator will instruct the trustee to refund the balance of the standby trust fund to the provider of financial assurance if

the Administrator determines that no additional corrective action costs or third-party liability claims will occur as a result of a release covered by the financial assurance mechanism for which the standby trust fund was established.

(d) An owner or operator may establish one trust fund as the depository mechanism for all funds assured in compliance with this rule.

§ 501104. Local Government Bond Rating Test.

(a) A general purpose local government owner or operator and/or local government serving as a guarantor may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by having a currently outstanding issue or issues of general obligation bonds of $1,000,000 or more, excluding refunded obligations, with a Moody's rating of Aaa, Aa, A, or Baa, or a Standard & Poor's rating of AAA, AA, A, or BBB. Where a local government has multiple outstanding issues, or where a local government's bonds are rated by both Moody's and Standard and Poor's, the lowest rating must be used to determine eligibility. Bonds that are backed by credit enhancement other than municipal bond insurance may not be considered in determining the amount of applicable bonds outstanding.

(b) A local government owner or operator or local government serving as a guarantor that is not a general-purpose local government and does not have the legal authority to issue general obligation bonds may satisfy the requirements of § 50193, Guam Administrative Rules and Regulation by having a currently outstanding issue or issues of revenue bonds of $1,000,000 or more, excluding refunded issues and by also having a Moody's rating of Aaa, Aa, A, or Baa, or a Standard & Poor's rating of AAA, AA, A or BBB as the lowest rating for any rated revenue bond issued by the local government. Where bonds are rated by both Moody's and Standard & Poor's, the lower rating for each bond must be used to determine eligibility. Bonds that are backed by credit enhancement may not be considered in determining the amount of applicable bonds outstanding.

(c) The local government owner or operator and/or guarantor

must maintain a copy of its bond rating published within the last twelve months by Moody's or Standard & Poor's.

(d) To demonstrate that it meets the local government bond rating test, the chief financial officer of a general purpose local government owner or operator and/or guarantor must sign a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM THE CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of local government owner or operator, or guarantor]. This letter is in support of the use of the bond rating test to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s).

Underground storage tanks at the following facilities are assured by this bond rating test: [List for each facility: the name and address of the facility where tanks are assured by the bond rating test].

The details of the issue date, maturity, outstanding amount, bond rating, and bond rating agency of all outstanding bond issues that are being used by [name of local government owner or operator, or guarantor] to demonstrate financial responsibility are as follows: [complete table]

Issue Date	Maturity Date	Outstanding Amount	Bond Rating	Rating Agency*

*[Moody's or Standard & Poor's]

The total outstanding obligation of [insert amount], excluding refunded bond issues, exceeds the minimum amount of $1,000,000. All outstanding general obligation bonds issued by this government that have been rated by Moody's or Standard & Poor's are rated as at least investment grade (Moody's Baa or Standard & Poor's BBB) based on the most recent ratings published within the last twelve months. Neither rating service has provided notification within the last twelve months of downgrading of bond ratings below investment grade or of withdrawal of bond rating other than for repayment of outstanding bond issues.

I hereby certify that the wording of this letter is identical to the wording specified in § 501104(d), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Date]
[Signature]
[Name]
[Title]

(e) To demonstrate that it meets the local government bond rating test, the chief financial officer of local government owner or operator and/or guarantor other than a general purpose government must sign a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM THE CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of local government owner or operator, or guarantor]. This letter is in support of the use of the bond rating test to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence

and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s). This local government is not organized to provide general governmental services and does not have the legal authority under state law or constitutional provisions to issue general obligation debt.

Underground storage tanks at the following facilities are assured by this bond rating test: [List for each facility: the name and address of the facility where tanks are assured by the bond rating test.]

The details of the issue date, maturity, outstanding amount, bond rating, and bond rating agency of all outstanding revenue bond issues that are being used by [name of local government owner or operator, or guarantor] to demonstrate financial responsibility are as follows: [complete table]

Issue Date	Maturity Date	Outstanding Amount	Bond Rating	Rating Agency*

*[Moody's or Standard & Poor's]

The total outstanding obligation of [insert amount], excluding refunded bond issues, exceeds the minimum amount of $1,000,000. All outstanding revenue bonds issued by this government that have been rated by Moody's or Standard & Poor's are rated as at least investment grade (Moody's Baa or Standard & Poor's BBB) based on the most recent ratings published within the last twelve months. The revenue bonds listed are not backed by third-party credit enhancement or insured by a municipal bond insurance company. Neither rating service has provided notification within the last twelve months of downgrading of bond ratings below investment grade or of withdrawal of bond rating other than for repayment of outstanding bond issues.

I hereby certify that the wording of this letter is identical to the wording specified in § 501104 (e), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown

immediately below.

[Date]
[Signature]
[Name]
[Title]

(f) The Administrator may require reports of financial condition at any time from the local government owner or operator and/or local government guarantor. If the Administrator finds, on the basis of such reports or other information, that the local government owner or operator and/or guarantor no longer meets the local government bond rating test requirements of this section, the local government owner or operator must obtain alternative coverage within thirty days after notification of such a finding.

(g) If a local government owner or operator using the bond rating test to provide financial assurance finds that it no longer meets the bond rating test requirements, the local government owner or operator must obtain alternative coverage within one hundred fifty days of the change in status.

(h) If the local government owner or operator fails to obtain alternate assurance within one hundred fifty days of finding that it no longer meets the requirements of the bond rating test or within thirty days of notification by the Administrator that it no longer meets the requirements of the bond rating test, the owner or operator must notify the Administrator of such failure within ten days.

§ 501105. Local Government Financial Test.

(a) A local government owner or operator may satisfy the requirements of § 50193 by passing the financial test specified in this section. To be eligible to use the financial test, the local government owner or operator must have the ability and authority to assess and levy taxes or to freely establish fees and charges. To pass the local government financial test, the owner or operator must meet the criteria of subsection

(b)(2) and (3) based on year-end financial statements for the latest completed fiscal year.

(b) (1) The local government owner or operator must have the following information available, as shown in the year-end financial statements for the latest completed fiscal year:

(A) Total Revenues: Consists of the sum of general fund operating and non-operating revenues including net local taxes, licenses and permits, fines and forfeitures, revenues from use of money and property, charges for services, investment earnings, sales (property, publications, etc.), intergovernmental revenues (restricted and unrestricted), and total revenues from all other governmental funds including enterprise, debt service, capital projects, and special revenues, but excluding revenues to funds held in a trust or agency capacity. For purposes of this test, the calculation of total revenues shall exclude all transfers between funds under the direct control of the local government using the financial test (interfund transfers), liquidation of investments, and issuance of debt.

(B) Total Expenditures: Consists of the sum of general fund operating and non-operating expenditures including public safety, public utilities, transportation, public works, environmental protection, cultural and recreational, community development, revenue sharing, employee benefits and compensation, office management, planning and zoning, capital projects, interest payments on debt, payments for retirement of debt principal, and total expenditures from all other governmental funds including enterprise, debt service, capital projects, and special revenues. For purposes of this test, the calculation of total expenditures shall exclude all transfers between funds under the direct control of

the local government using the financial test (interfund transfers).

(C) Local Revenues: Consists of total revenues (as defined in subparagraph (A)) minus the sum of all transfers from other governmental entities, including all monies received from federal, state, or local government sources.

(D) Debt Service: Consists of the sum of all interest and principal payments on all long-term credit obligations and all interest-bearing short-term credit obligations. Includes interest and principal payments on general obligation bonds, revenue bonds, notes, mortgages, judgments, and interest-bearing warrants. Excludes payments on non-interest-bearing short-term obligations, interfund obligations, amounts owed in a trust or agency capacity, and advances and contingent loans from other governments.

(E) Total Funds: Consists of the sum of cash and investment securities from all funds, including general, enterprise, debt service, capital projects, and special revenue funds, but excluding employee retirement funds, at the end of the local government's financial reporting year. Includes federal securities, federal agency securities, state and local government securities, and other securities such as bonds, notes and mortgages. For purposes of this test, the calculation of total funds shall exclude agency funds, private trust funds, accounts receivable, value of real property, and other non-security assets.

(F) Population consists of the number of people in the area served by the local government.

(2) The local government's year-end financial statements, if independently audited, cannot include an adverse auditor's opinion or a disclaimer of opinion. The local government cannot have outstanding issues of general obligation or

revenue bonds that are rated as less than investment grade.

(3) The local government owner or operator must have a letter signed by the chief financial officer worded as specified in subsection (c).

(c) To demonstrate that it meets the financial test under subsection (b), the chief financial officer of the local government owner or operator, must sign, within one hundred twenty days of the close of each financial reporting year, as defined by the twelve-month period for which financial statements used to support the financial test are prepared, a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of the owner or operator]. This letter is in support of the use of the local government financial test to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating [an] underground storage tank[s].

Underground storage tanks at the following facilities are assured by this financial test [List for each facility: the name and address of the facility where tanks assured by this financial test are located. If separate mechanisms or combinations of mechanisms are being used to assure any of the tanks at this facility, list each tank assured by this financial test by the tank identification number provided in the notification submitted pursuant to 10 GCA Chapter 76, 40 C.F.R. section 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations.

This owner or operator has not received an adverse opinion, or a disclaimer of opinion from an independent auditor on its financial statements for the latest completed fiscal year. Any outstanding issues of

general obligation or revenue bonds, if rated, have a Moody's rating of Aaa, Aa, A, or Baa or a Standard and Poor's rating of AAA, AA, A, or BBB; if rated by both firms, the bonds have a Moody's rating of Aaa, Aa, A or Baa and a Standard and Poor's rating of AAA, AA, A, or BBB.

WORKSHEET FOR MUNICIPAL FINANCIAL TEST

PART I: BASIC INFORMATION

1. Total Revenues
    a. Revenues (dollars)
       Value of revenues excludes liquidation of investments and issuance of debt. Value includes all general fund operating and non-operating revenues, as well as all revenues from all other governmental funds including enterprise, debt service, capital projects, and special revenues, but excluding revenues to funds held in a trust or agency capacity.
    b. Subtract interfund transfers (dollars)
    c. Total Revenues (dollars)
2. Total Expenditures
    a. Expenditures (dollars)
       Value consists of the sum of general fund operating and non-operating expenditures including interest payments on debt, payments for retirement of debt principal, and total expenditures from all other governmental funds including enterprise, debt service, capital projects, and special revenues.
    b. Subtract interfund transfers (dollars)
    c. Total Expenditures (dollars)
3. Local Revenues
    a. Total Revenues (from 1c) (dollars)
    b. Subtract total intergovernmental transfers (dollars)
    c. Local Revenues (dollars)
4. Debt Service

a. Interest and fiscal charges (dollars)
b. Add debt retirement (dollars)
c. Total Debt Service (dollars)

5. Total Funds (Dollars)
(Sum of amounts held as cash and investment securities from all funds, excluding amounts held for employee retirement funds, agency funds, and trust funds)
6. Population (Persons)

PART II: APPLICATION OF TEST

7. Total Revenues to Population
   a. Total Revenues (from 1c)
   b. Population (from 6)
   c. Divide 7a by 7b
   d. Subtract 417
   e. Divide by 5,212
   f. Multiply by 4.095
8. Total Expenses to Population
   a. Total Expenses (from 2c)
   b. Population (from 6)
   c. Divide 8a by 8b
   d. Subtract 524
   e. Divide by 5,401
   f. Multiply by 4.095
9. Local Revenues to Total Revenues
   a. Local Revenues (from 3c)
   b. Total Revenues (from 1c)
   c. Divide 9a by 9b
   d. Subtract 0.695
   e. Divide by 0.205
   f. Multiply by 2.840
10. Debt Service to Population
   a. Debt Service (from 4c)
   b. Population (from 6)

c. Divide 10a by 10b
d. Subtract 51
e. Divide by 1,038
f. Multiply by -1.866

11. Debt Service to Total Revenues
    a. Debt Service (from 4c)
    b. Total Revenues (from 1c)
    c. Divide 11a by 11b
    d. Subtract 0.068
    e. Divide by 0.259
    f. Multiply by -3.533
12. Total Revenues to Total Expenses
    a. Total Revenues (from 1c)
    b. Total Expenses (from 2c)
    c. Divide 12a by 12b
    d. Subtract 0.910
    e. Divide by 0.899
    f. Multiply by 3.458
13. Funds Balance to Total Revenues
    a. Total Funds (from 5)
    b. Total Revenues (from 1c)
    c. Divide 13a by 13b
    d. Subtract 0.891
    e. Divide by 9.156
    f. Multiply by 3.270
14. Funds Balance to Total Expenses
    a. Total Funds (from 5)
    b. Total Expenses (from 2c)
    c. Divide 14a by 14b
    d. Subtract 0.866
    e. Divide by 6.409
    f. Multiply by 3.270
15. Total Funds to Population
    a. Total Funds (from 5)
    b. Population (from 6)

c. Divide 15a by 15b
d. Subtract 270
e. Divide by 4,548
f. Multiply by 1.866

16. Add 7f+8f+9f+10f+11f+12f+13f+14f+15f+4.937

I hereby certify that the financial index shown on line 16 of the worksheet is greater than zero and that the wording of this letter is identical to the wording specified in § 501105(c), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Date]
[Signature]
[Name]
[Title]

(d) If a local government owner or operator using the test to provide financial assurance finds that it no longer meets the requirements of the financial test based on the year-end financial statements, the owner or operator must obtain alternative coverage within one hundred fifty days of the end of the year for which financial statements have been prepared.

(e) The Administrator may require reports of financial condition at any time from the local government owner or operator. If the Administrator finds, on the basis of such reports or other information, that the local government owner or operator no longer meets the financial test requirements of subsections (b) and (c), the owner or operator must obtain alternate coverage within thirty days after notification of such a finding.

(f) If the local government owner or operator fails to obtain alternate assurance within one hundred fifty days of finding that it no longer meets the requirements of the financial test based on the year-end financial statements or within thirty days of notification by the Administrator that it no longer meets the requirements of the financial test, the owner or operator must notify the Administrator of such failure

within ten days.

§ 501106. Local Government Guarantee.

(a) A local government owner or operator may satisfy the requirements of § 50193, by obtaining a guarantee that conforms to the requirements of this section. The guarantor must be a local government having a "substantial governmental relationship" with the owner or operator and issuing the guarantee as an act incident to that relationship. A local government acting, as the guarantor must:

(1) Demonstrate that it meets the bond rating test requirement of § 501104, and deliver a copy of the chief financial officer's letter as contained in § 591104(d) and (e), to the local government owner or operator;

(2) Demonstrate that it meets the worksheet test requirements of § 501105, and deliver a copy of the chief financial officer's letter as contained in § 501105(c), to the local government owner or operator; or

(3) Demonstrate that it meets the local government fund requirements of § 501107(1), (2), or (3), and deliver a copy of the chief financial officer's letter as contained in § 501107, to the local government owner or operator.

(b) If the local government guarantor is unable to demonstrate financial assurance under §§ 501104, 501105, or 501107(1), (2), or (3), at the end of the financial reporting year, the guarantor shall send by certified mail, before cancellation or non-renewal of the guarantee, notice to the owner or operator. The guarantee will terminate no less than one hundred twenty days after the date the owner or operator receives the notification, as evidenced by the return receipt. The owner or operator must obtain alternative coverage as specified in § 501114(e).

(c) The guarantee agreement must be worded as specified in subsection (d) or (e), depending on which of the following alternative guarantee arrangements is selected:

(1) If, in the default or incapacity of the owner or operator, the guarantor guarantees to fund a standby trust as directed by

the Administrator, the guarantee shall be worded as specified in subsection (d).

(2) If, in the default or incapacity of the owner or operator, the guarantor guarantees to make payments as directed by the Administrator for taking corrective action or compensating third parties for bodily injury and property damage, the guarantee shall be worded as specified in subsection (e).

(d) The local government guarantee with standby trust must be worded exactly as follows, except that instructions in brackets are to be replaced with relevant information and the brackets deleted:

LOCAL GOVERNMENT GUARANTEE WITH STANDBY TRUST MADE BY A LOCAL GOVERNMENT

Guarantee made this [date] by [name of guaranteeing entity], a local government organized under the laws of Guam, herein referred to as guarantor, to the Guam Environmental Protection Agency and to any and all third parties, and obliges, on behalf of [local government owner or operator].

Recitals

(1) Guarantor meets or exceeds [select one: the local government bond rating test requirements of § 501104, Guam Administrative Rules and Regulations, the local government financial test requirements of § 501105, Guam Administrative Rules, or the local government fund under § 501107(1),(2) or (3), Guam Administrative Rules and Regulations.

(2) [Local government owner or operator] owns or operates the following underground storage tank(s) covered by this guarantee: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 10 GCA Chapter 76, 40 C.F.R. section 280.22, or in the permit applications submitted under §§ 501324 and

501326, Guam Administrative Rules and Regulations, and the name and address of the facility.] This guarantee satisfies Article 8 requirements for assuring funding for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the above-identified underground storage tank(s) in the amount of [insert dollar amount] per occurrence and [insert: dollar amount] annual aggregate.

(3) Incident to our substantial governmental relationship with [local government owner or operator], guarantor guarantees to the Guam Environmental Protection Agency and to any and all third parties that:

In the event that [local government owner or operator] fails to provide alternative coverage within sixty days after receipt of a notice of cancellation of this guarantee and the Administrator of Guam Environmental Protection Agency has determined or suspects that a release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon instructions from the Administrator shall fund a standby trust fund in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, in an amount not to exceed the coverage limits specified above.

In the event that the Administrator determines that [local government owner or operator] has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with Article 6, the guarantor upon written instructions from the Administrator shall fund a standby trust fund in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, in an amount not to exceed the coverage limits specified above.

If [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by ["sudden" and/or "nonsudden"] accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written

instructions from the Administrator, shall fund a standby trust in accordance with the provisions of § 501112, Guam Administrative Rules and Regulations, to satisfy such judgment(s), award(s), or settlement agreement(s) up to the limits of coverage specified above.

(4) Guarantor agrees that, if at the end of any fiscal year before cancellation of this guarantee, the guarantor fails to meet or exceed the requirements of the financial responsibility mechanism specified in paragraph (1), guarantor shall send within one hundred twenty days of such failure, by certified mail, notice to [local government owner or operator], as evidenced by the return receipt.

(5) Guarantor agrees to notify [owner or operator] by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code naming guarantor as debtor, within ten days after commencement of the proceeding.

(6) Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of [owner or operator] pursuant to Article 1.

(7) Guarantor agrees to remain bound under this guarantee for so long as [local government owner or operator] must comply with the applicable financial responsibility requirements of Article 8, for the above identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to [owner or operator], such cancellation to become effective no earlier than one hundred twenty days after receipt of such notice by [owner or operator], as evidenced by the return receipt.

(8) The guarantor's obligation does not apply to any of the following:

(a) Any obligation of [local government owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert: local government owner or operator] arising from, and in the course of, employment by [insert: local government owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert: local government owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily damage or property damage for which [insert: owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

(9) Guarantor expressly waives notice of acceptance of this guarantee by the Guam Environmental Protection Agency, by any or all third parties, or by [local government owner or operator].

I hereby certify that the wording of this guarantee is identical to the wording specified in § 501106(d), Guam Administrative Rules and Regulations, as such regulations were constituted on the effective date shown immediately below.

Effective date:
[Name of guarantor]
[Authorized signature for guarantor]
[Name of person signing]
[Title of person signing]
Signature of witness or notary:

(e) The local government guarantee without standby trust must be worded exactly as follows, except that instructions in brackets are to be replaced with relevant information and the brackets deleted:

LOCAL GOVERNMENT GUARANTEE WITHOUT STANDBY TRUST MADE BY A LOCAL GOVERNMENT

Guarantee made this [date] by [name of guaranteeing entity], a local government organized under the laws of Guam, herein referred to as guarantor, to the Guam Environmental Protection Agency and to any and all third parties, and obliges, on behalf of [local government owner or

operator].

Recitals

(1) Guarantor meets or exceeds [select one: the local government bond rating test requirements of § 501104, Guam Administrative Rules and Regulations, the local government financial test requirements of § 501105, Guam Administrative Rules and Regulations, or the local government fund under § 501107(1),(2) or (3), Guam Administrative Rules and Regulations.

(2) [Local government owner or operator] owns or operates the following underground storage tank(s) covered by this guarantee: [List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 10 GCA Chapter 76, 40 C.F.R. section 280.22, or in the permit applications submitted under §§ 501324 and 501326, Guam Administrative Rules and Regulations, and the name and address of the facility.] This guarantee satisfies Article 8, requirements for assuring funding for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the above-identified underground storage tank(s) in the amount of [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate.

(3) Incident to our substantial governmental relationship with [local government owner or operator], guarantor guarantees to the Guam Environmental Protection Agency and to any and all third parties and obliges that:

In the event that [local government owner or operator] fails to provide alternative coverage within sixty days after receipt of a notice of cancellation of this guarantee and the Administrator of Guam

Environmental Protection Agency has determined or suspects that a release has occurred at an underground storage tank covered by this guarantee, the guarantor, upon written instructions from the Administrator shall make funds available to pay for corrective actions and compensate third parties for bodily injury and property damage in an amount not to exceed the coverage limits specified above.

In the event that the Administrator determines that [local government owner or operator] has failed to perform corrective action for releases arising out of the operation of the above-identified tank(s) in accordance with Article 6, the guarantor upon written instructions from the Administrator shall make funds available to pay for corrective actions in an amount not to exceed the coverage limits specified above.

If [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by ["sudden" and/or "nonsudden"] accidental releases arising from the operation of the above-identified tank(s), or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor, upon written instructions from the Administrator, shall make funds available to compensate third parties for bodily injury and property damage in an amount not to exceed the coverage limits specified above.

(4) Guarantor agrees that if at the end of any fiscal year before cancellation of this guarantee, the guarantor fails to meet or exceed the requirements of the financial responsibility mechanism specified in paragraph (1), guarantor shall send within one hundred twenty days of such failure, by certified mail, notice to [local government owner or operator], as evidenced by the return receipt.

(5) Guarantor agrees to notify [owner or operator] by certified mail of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code naming guarantor as debtor, within ten days after commencement of the proceeding.

(6) Guarantor agrees to remain bound under this guarantee notwithstanding any modification or alteration of any obligation of [owner or operator] pursuant to Chapter 50, Guam Administrative Rules and Regulations.

(7) Guarantor agrees to remain bound under this guarantee for so long as [local government owner or operator] must comply with the applicable financial responsibility requirements of Article 8, for the above identified tank(s), except that guarantor may cancel this guarantee by sending notice by certified mail to [owner or operator], such cancellation to become effective no earlier than one hundred twenty days after receipt of such notice by [owner or operator], as evidenced by the return receipt. If notified of a probable release, the guarantor agrees to remain bound to the terms of this guarantee for all charges arising from the release, up to the coverage limits specified above, notwithstanding the cancellation of the guarantee with respect to future releases.

(8) The guarantor's obligation does not apply to any of the following:

(a) Any obligation of [local government owner or operator] under a workers' compensation disability benefits, or unemployment compensation law or other similar law;

(b) Bodily injury to an employee of [insert: local government owner or operator] arising from and in the course of, employment by [insert: local government owner or operator];

(c) Bodily injury or property damage arising from the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(d) Property damage to any property owned, rented, loaned to, in the care, custody, or control of, or occupied by [insert: local government owner or operator] that is not the direct result of a release from a petroleum underground storage tank;

(e) Bodily damage or property damage for which [insert: owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement other than a contract or agreement entered into to meet the requirements of § 50193, Guam Administrative Rules and Regulations.

(9) Guarantor expressly waives notice of acceptance of this guarantee by the Guam Environmental Protection Agency, by any or all third parties, or by [local government owner or operator].

I hereby certify that the wording of this guarantee is identical to the

wording specified in § 501106(e), Guam Administrative Rules and Regulations, as such regulations were constituted on the effective date shown immediately below.

Effective date:
[Name of guarantor]
[Authorized signature for guarantor]
[Name of person signing]
[Title of person signing]
Signature of witness or notary:

§ 501107. Local Government Fund.

A local government owner or operator may satisfy the requirements of § 50193, Guam Administrative Rules and Regulations by establishing a dedicated fund account that conforms to the requirements of this section. Except as specified in paragraph (2), a dedicated fund may not be commingled with other funds or otherwise used in normal operations. A dedicated fund will be considered eligible if it meets one of the following requirements:

(1) The fund is dedicated by state constitutional provision, or local government statute, charter, ordinance, or order to pay for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks or tank systems and is funded for the full amount of coverage required under § 50193, Guam Administrative Rules and Regulations, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage; or

(2) The fund is dedicated by state constitutional provision, or local government statute, charter, ordinance, or order as a contingency fund for general emergencies, including taking corrective action and compensating third parties for bodily

injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks or tank systems, and is funded for five times the full amount of coverage required under § 50193, Guam Administrative Rules and Regulations, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage. If the fund is funded for less than five times the amount of coverage required under § 50193, Guam Administrative Rules and Regulations, the amount of financial responsibility demonstrated by the fund may not exceed one-fifth the amount in the fund; or

(3) The fund is dedicated by state constitutional provision, or local government statute, charter, ordinance or order to pay for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks or tank systems. A payment is made to the fund once every year for seven years until the fund is fully-funded. This seven-year period is hereafter referred to as the "pay-in-period". The amount of each payment must be determined by this formula:

$$\frac{TF - CF}{Y}$$

Where TF is the total required financial assurance for the owner or operator, CF is the current amount in the fund, and Y is the number of years remaining in the pay-in-period, and;

(A) The local government owner or operator has available bonding authority, approved through voter referendum (if such approval is necessary prior to the issuance of bonds), for an amount equal to the difference between the required amount of coverage and the amount held in the dedicated fund. This bonding authority shall be available for taking

corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases arising from the operation of petroleum underground storage tanks or tank systems, or

(B) The local government owner or operator has a letter signed by the appropriate state attorney general stating that the use of the bonding authority will not increase the local government's debt beyond the legal debt ceilings established by the relevant state laws. The letter must also state that prior voter approval is not necessary before use of the bonding authority.

(4) To demonstrate that it meets the requirements of the local government fund, the chief financial officer of the local government owner or operator and/or guarantor must sign a letter worded exactly as follows, except that the instructions in brackets are to be replaced by the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

I am the chief financial officer of [insert: name and address of local government owner or operator, or guarantor.] This letter is in support of the use of the local government fund mechanism to demonstrate financial responsibility for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage"] caused by [insert: "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases"] in the amount of at least [insert: dollar amount] per occurrence and [insert: dollar amount] annual aggregate arising from operating (an) underground storage tank(s).

Underground storage tanks at the following facilities are assured by this local government fund mechanism: [List for each facility: the name and address of the facility where

tanks are assured by the local government fund].

[Insert: "The local government fund is funded for the full amount of coverage required under section § 50193, Guam Administrative Rules and Regulations, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage." or "The local government fund is funded for five times the full amount of coverage required under § 50193, Guam Administrative Rules and Regulations, or funded for part of the required amount of coverage and used in combination with other mechanism(s) that provide the remaining coverage." or "A payment is made to the fund once every year for seven years until the fund is fully-funded and [name of local government owner or operator] has available bonding authority, approved through voter referendum, of an amount equal to the difference between the required amount of coverage and the amount held in the dedicated fund" or "A payment is made to the fund once every year for seven years until the fund is fully-funded and I have attached a letter signed by the State Attorney General stating that (1) the use of the bonding authority will not increase the local government's debt beyond the legal debt ceilings established by the relevant state laws and (2) that prior voter approval is not necessary before use of the bonding authority"].

The details of the local government fund are as follows:

Amount in Fund (market value of fund at close of last fiscal year):

[If fund balance is incrementally funded as specified in § 501107(3), Guam Administrative Rules and Regulations, insert:

Amount added to fund in the most recently completed fiscal year:

Number of years remaining in the pay-in period:]

A copy of the state constitutional provision, or local government statute, charter, ordinance or order dedicating the fund is attached.

I hereby certify that the wording of this letter is identical to the wording specified in § 501107(4), Guam Administrative Rules and Regulations, as such regulations were constituted on the date shown immediately below.

[Date]
[Signature]
[Name]
[Title]

§ 501108. Substitution of Financial Assurance Mechanisms by Owner or operator.

(a) An owner or operator may substitute any alternate financial assurance mechanisms as specified in this subchapter, provided that at all times the owner or operator maintains an effective financial assurance mechanism or combination of mechanisms that satisfies the requirements of § 50193, Guam Administrative Rules and Regulations.

(b) After obtaining alternate financial assurance as specified in this Article, an owner or operator may cancel a financial assurance mechanism by providing notice to the provider of financial assurance.

§ 501109. Cancellation or Non-renewal by a Provider of Financial Assurance.

(a) Except as otherwise provided, a provider of financial assurance may cancel or fail to renew an assurance mechanism by sending a notice of termination by certified mail to the owner or operator.

(1) Termination of a local government guarantee, a guarantee, a surety bond, or a letter of credit may not occur until one hundred twenty days after the date on which the owner or

operator receives the notice of termination, as evidenced by the return receipt.

(2) Termination of insurance or risk retention coverage, except for non-payment or misrepresentation by the insured, may not occur until sixty days after the date on which the owner or operator receives the notice of termination, as evidenced by the return receipt. Termination for non-payment of premium or misrepresentation by the insured may not occur until a minimum of ten days after the date on which the owner or operator receives the notice of termination, as evidenced by the return receipt.

(b) If a provider of financial responsibility cancels or fails to renew for reasons other than incapacity of the provider as specified in § 501114, Guam Administrative Rules and Regulations, the owner or operator must obtain alternate coverage as specified in this Article within sixty days after receipt of the notice of termination. If the owner or operator fails to obtain alternate coverage within sixty days after receipt of the notice of termination, the owner or operator must notify the Administrator of such failure and submit:

(1) The name and address of the provider of financial assurance;

(2) The effective date of termination; and

(3) The evidence of the financial assurance mechanism subject to the termination maintained in accordance with § 501111(b), Guam Administrative Rules and Regulations.

§ 501110. Reporting by Owner or Operator.

(a) An owner or operator must submit the appropriate forms listed in § 501111(b), Guam Administrative Rules and Regulations documenting current evidence of financial responsibility to the Administrator:

(1) Within thirty days after the owner or operator identifies a release from an underground storage tank or tank system required to be reported under §§ 50153 or 50161, Guam Administrative Rules and Regulations;

(2) If the owner or operator fails to obtain alternate coverage as required by this subchapter, within thirty days after the owner or operator receives notice of:

(A) Commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a provider of financial assurance as a debtor;

(B) Suspension or revocation of the authority of a provider of financial assurance to issue a financial assurance mechanism;

(C) Failure of a guarantor to meet the requirements of the financial test; or

(D) Other incapacity of a provider of financial assurance; or

(3) As required by §§ 50195(g) and 501109(b).

(b) An owner or operator must certify compliance with the financial responsibility requirements of this subchapter as specified in the notification form submitted pursuant to 10 GCA Chapter 76, § 50134, Guam Administrative Rules and Regulations, or the permit applications under §§ 501324 and 501326, Guam Administrative Rules and Regulations.

(c) The Administrator may require an owner or operator to submit evidence of financial assurance as described in § 501111(b), Guam Administrative Rules and Regulations or other information relevant to compliance with this Article at any time.

§ 501111. Record Keeping.

(a) Owners or operators must maintain evidence of all financial assurance mechanisms used to demonstrate financial responsibility under this subchapter for an underground storage tank or tank system until released from the requirements of this Article under § 501113, Guam Administrative Rules and Regulations. An owner or operator must maintain such evidence at the underground storage tank or tank system site or the owner's or operator's place of work. Records maintained off-

site must be made available upon request of the Administrator.

(b) An owner or operator must maintain the following types of evidence of financial responsibility:

(1) An owner or operator using an assurance mechanism specified in §§ 50195 to 50199 or § 501102 or §§ 501104 to 501107, Guam Administrative Rules and Regulations must maintain a copy of the instrument worded as specified.

(2) An owner or operator using a financial test or guarantee, or a local government financial test or a local government guarantee supported by the local government financial test must maintain a copy of the chief financial officer's letter based on year-end financial statements for the most recent completed financial reporting year. Such evidence must be on file no later than one hundred twenty days after the close of the financial reporting year.

(3) An owner or operator using a guarantee, surety bond, or letter of credit must maintain a copy of the signed standby trust fund agreement and copies of any amendments to the agreement.

(4) A local government owner or operator using a local government guarantee under § 501106(d), Guam Administrative Rules and Regulations must maintain a copy of the signed standby trust fund agreement and copies of any amendments to the agreement.

(5) A local government owner or operator using the local government bond rating test under § 501104, Guam Administrative Rules and Regulations must maintain a copy of its bond rating published within the last twelve months by Moody's or Standard & Poor's.

(6) A local government owner or operator using the local government guarantee under § 501106, Guam Administrative Rules and Regulations, where the guarantor's demonstration of financial responsibility relies on the bond rating test under § 501104, Guam Administrative Rules and Regulations must maintain a copy

of the guarantor's bond rating published within the last twelve months by Moody's or Standard & Poor's.

(7) An owner or operator using an insurance policy or risk retention group coverage must maintain a copy of the signed insurance policy or risk retention group coverage policy, with the endorsement or certificate of insurance and any amendments to the agreements.

(8) An owner or operator using a local government fund under § 501107, Guam Administrative Rules and Regulations must maintain the following documents:

(A) A copy of the state constitutional provision or local government statute, charter, ordinance, or order dedicating the fund;

(B) Year-end financial statements for the most recent completed financial reporting year showing the amount in the fund. If the fund is established under § 501107(3), Guam Administrative Rules and Regulations using incremental funding backed by bonding authority, the financial statements must show the previous year's balance, the amount of funding during the year, and the closing balance in the fund; and

(C) If the fund is established under § 501107(3), Guam Administrative Rules and Regulations using incremental funding backed by bonding authority, the owner or operator must also maintain documentation of the required bonding authority, including either the results of a voter referendum (under § 501107(3)(A), Guam Administrative Rules and Regulations, or attestation by the state attorney general as specified under § 501107(3)(B), Guam Administrative Rules and Regulations).

(9) A local government owner or operator using the local government guarantee supported by the local government fund must maintain a copy of the guarantor's year-end

financial statements for the most recent completed financial reporting year showing the amount of the fund.

(10) (A) An owner or operator using an assurance mechanism specified in §§ 50195 to 501107, Guam Administrative Rule and Regulations must maintain an updated copy of a certification of financial responsibility worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CERTIFICATION OF FINANCIAL RESPONSIBILITY

[Owner or operator] hereby certifies that it is in compliance with the requirements of Article 8 of Chapter 50, Guam Administrative Rules and Regulations.

The financial assurance mechanism(s) used to demonstrate financial responsibility under Article 8 of Chapter 50, Guam Administrative Rules and Regulations, is (are) as follows:

[For each mechanism, list the type of mechanism, name of issuer, mechanism number (if applicable), amount of coverage, effective period of coverage and whether the mechanism covers "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental releases".]

[Signature of owner or operator]
[Name of owner or operator]
[Title]
[Date]
[Signature of witness or notary]
[Name of witness or notary]

[Date]

(B) The owner or operator must update this certification whenever the financial assurance mechanism(s) used to demonstrate financial responsibility change(s).

§ 501112. Drawing of Financial Assurance Mechanisms.

(a) Except as specified in subsection (d), the Administrator shall require the guarantor, surety, or institution issuing a letter of credit to place the amount of funds stipulated by the Administrator, up to the limit of funds provided by the financial assurance mechanism, into the standby trust if:

(1) (A) The owner or operator fails to establish alternate financial assurance within sixty days after receiving notice of cancellation of the guarantee, surety bond, letter of credit, or, as applicable, other financial assurance mechanism; and

(B) The Administrator determines or suspects that a release from an underground storage tank or tank system covered by the mechanism has occurred and so notifies the owner or operator or the owner or operator has notified the Administrator pursuant to Articles 5 or 6 of a release from an underground storage tank or tank system covered by the mechanism; or

(2) The conditions of subsection (b)(1), (b)(2)(A), or (b)(2)(B) are satisfied.

(b) The Administrator may draw on a standby trust fund when:

(1) The Administrator makes a final determination that a release has occurred and immediate or long-term corrective action for the release is needed, and the owner or operator, after appropriate notice and opportunity to comply, has not conducted release response action as required under Article 6; or

(2) The Administrator has received either:

(A) Certification from the owner or operator and the third-party liability claimant(s) and from attorneys representing the owner or operator and the third-party liability claimant(s) that a third-party liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CERTIFICATION OF A VALID CLAIM

The undersigned, as principals and as legal representatives of [insert: owner or operator] and [insert: name and address of third-party claimant], hereby certify that the claim of bodily injury [and/or] property damage caused by an accidental release arising from operating [owner's or operator's] underground storage tank should be paid in the amount of $[___].

[Signatures]
Owner or Operator
Attorney for Owner or Operator
(Notary)
Date
[Signatures]
Claimant(s)
Attorney(s) for Claimant(s)
(Notary)
Date

or;

(B) A valid final court order establishing a judgment against the owner or operator for bodily injury or

property damage caused by an accidental release from an underground storage tank or tank system covered by financial assurance under this subchapter and the Administrator determines that the owner or operator has not satisfied the judgment.

(c) If the Administrator determines that the amount of corrective action costs and third-party liability claims eligible for payment under subsection (b) may exceed the balance of the standby trust fund and the obligation of the provider of financial assurance, the first priority for payment shall be corrective action costs necessary to protect human health and the environment. The Administrator shall pay third-party liability claims in the order in which the Administrator receives certifications under subsection (b)(2)(A), and valid court orders under subsection (b)(2)(B).

(d) A governmental entity acting as guarantor under § 501106(e), Guam Administrative Rules and Regulations, the local government guarantee without standby trust, shall make payments as directed by the Administrator under the circumstances described in subsections (a), (b), and (c).

§ 501113. Release from the Requirements.

An owner or operator is no longer required to maintain financial responsibility under this subchapter for an underground storage tank or tank system after the tank or tank system has been permanently closed or undergoes a change-in-service or, if release response action is required, after release response action has been completed and the tank or tank system has been permanently closed or undergoes a change-in-service as required by Article 7.

§ 501114. Bankruptcy or Other Incapacity of Owner or Operator or Provider of Financial Assurance.

(a) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming

an owner or operator as debtor, the owner or operator must notify the Administrator by certified mail of such commencement and submit the appropriate forms listed in § 501111(b), Guam Administrative Rules and Regulations documenting current financial responsibility.

(b) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a guarantor providing financial assurance as debtor, such guarantor must notify the owner or operator by certified mail of such commencement as required under the terms of the guarantee specified in § 50196, Guam Administrative Rules and Regulations.

(c) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a local government owner or operator as debtor, the local government owner or operator must notify the Administrator by certified mail of such commencement and submit the appropriate forms listed in § 501111(b), Guam Administrative Rules and Regulations documenting current financial responsibility.

(d) Within ten days after commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming a guarantor providing a local government financial assurance as debtor, such guarantor must notify the local government owner or operator by certified mail of such commencement as required under the terms of the guarantee specified in § 501106, Guam Administrative Rules and Regulations.

(e) An owner or operator who obtains financial assurance by a mechanism other than the financial test of self-insurance will be deemed to be without the required financial assurance in the event of a bankruptcy or incapacity of its provider of financial assurance, or a suspension or revocation of the authority of the provider of financial assurance to issue a guarantee, insurance policy, risk retention group coverage policy, surety bond, or letter of credit. The owner or operator must obtain alternate financial assurance as specified in this Article within thirty days after receiving notice of such an event. If the owner or operator does not obtain alternate coverage within thirty days after such notification, the owner or operator must notify the Administrator.

§ 501115. Replenishment of Guarantee, Letters of Credit, or Surety Bond.

(a) If at any time after a standby trust is funded upon the instruction of the Administrator with funds drawn from a guarantee, local government guarantee with standby trust, letter of credit, or surety bond, and the amount in the standby trust is reduced below the full amount of coverage required, the owner or operator shall by the anniversary date of the financial mechanism from which the funds were drawn:

(1) Replenish the value of financial assurance to equal the full amount of coverage required; or

(2) Acquire another financial assurance mechanism for the amount by which funds in the standby trust have been reduced.

(b) For purposes of this section, the full amount of coverage required is the amount of coverage to be provided by § 50193, Guam Administrative Rule and Regulations. If a combination of mechanisms was used to provide the assurance funds, which were drawn upon, replenishment shall occur by the earliest anniversary date among the mechanisms.

§ 501116 to § 501199. [Reserved.]

ARTICLE 9
LENDER LIABILITY

§ 501200. Definitions
§ 501201 to § 501209. [Reserved.]
§ 501210. Participation in Management
§ 501211 to § 501219. [Reserved.]
§ 501220. Ownership of an Underground Storage Tank or Underground Storage Tank System or Facility or Property on which an Underground Storage Tank or Underground

Storage Tank System is Located
§ 501221 to § 501229. [Reserved.]
§ 501230. Operating an Underground Storage Tank or Underground Storage Tank System
§ 501231 to § 501239. [Reserved.]

§ 501200. Definitions.

(a) UST technical standards, as used in this Article, refers to the UST preventative and operating requirements under Articles 2, 3, 4, 7, and 10 and § 50150, Guam Administrative Rules and Regulations.

(b) Petroleum production, refining, and marketing.

(a) (1) "Petroleum production" means the production of crude oil or other forms of petroleum (as defined in § 50112, Guam Administrative Rules and Regulations) as well as the production of petroleum products from purchased materials.

(2) "Petroleum refining" means the cracking, distillation, separation, conversion, upgrading, and finishing of refined petroleum or petroleum products.

(3) "Petroleum marketing" means the distribution, transfer, or sale of petroleum or petroleum products for wholesale or retail purposes.

(c) "Indicia of ownership" means evidence of a secured interest, evidence of an interest in a security interest, or evidence of an interest in real or personal property securing a loan or other obligation, including any legal or equitable title or deed to real or personal property acquired through or incident to foreclosure. Evidence of such interests include, but are not limited to, mortgages, deeds of trust, liens, surety bonds and guarantees of obligations, title held pursuant to a lease financing transaction in which the lessor does not select initially the leased property (hereinafter "lease financing transaction"), and legal or equitable title obtained pursuant to foreclosure. Evidence of such interests also includes assignments, pledges, or other rights to or other forms of encumbrance against property that are held primarily to protect a security interest. A person is not required to hold title or a security interest in order to

maintain indicia of ownership.

(d) A "holder" is a person who, upon October 13, 2015, or in the future, maintains indicia of ownership (as defined in subsection (c)) primarily to protect a security interest (as defined in subsection (f)(1)) in a petroleum UST or UST system or facility or property on which a petroleum UST or UST system is located. A holder includes the initial holder (such as a loan originator); any subsequent holder (such as a successor-in-interest or subsequent purchaser of the security interest on the secondary market); a guarantor of an obligation, surety, or any other person who holds ownership indicia primarily to protect a security interest; or a receiver or other person who acts on behalf or for the benefit of a holder.

(e) A "borrower, debtor, or obligor" is a person whose UST or UST system or facility or property on which the UST or UST system is located is encumbered by a security interest. These terms may be used interchangeably.

(f) "Primarily to protect a security interest" means that the holder's indicia of ownership are held primarily for the purpose of securing payment or performance of an obligation.

(1) "Security interest" means an interest in a petroleum UST or UST system or in the facility or property on which a petroleum UST or UST system is located, created or established for the purpose of securing a loan or other obligation. Security interests include but are not limited to mortgages, deeds of trusts, liens, and title pursuant to lease financing transactions. Security interests may also arise from transactions such as sale and leasebacks, conditional sales, installment sales, trust receipt transactions, certain assignments, factoring agreements, accounts receivable financing arrangements, and consignments, if the transaction creates or establishes an interest in an UST or UST system or in the facility or property on which the UST or UST system is located, for the purpose of securing a loan or other obligation.

(2) "Primarily to protect a security interest", as used in this

subchapter, does not include indicia of ownership held primarily for investment purposes, nor ownership indicia held primarily for purposes other than as protection for a security interest. A holder may have other, secondary reasons for maintaining indicia of ownership, but the primary reason why any ownership indicia are held must be as protection for a security interest.

(g) "Operation" means, for purposes of this Article, the use, storage, filling, or dispensing of petroleum contained in an UST or UST system.

§ 501201 to § 501209. [Reserved.]

§ 501210. Participation in Management.

(a) The term "participating in the management of an UST or UST system" means that the holder is engaging in decision making control of, or activities related to, operation of the UST or UST system, as defined in this section. Actions that are participation in management:

(1) Participation in the management of an UST or UST system means, for purposes of this subchapter, actual participation by the holder in the management or control of decision making related to the operation of an UST or UST system. Participation in management does not include the mere c capacity or ability to influence or the unexercised right to control UST or UST system operations. A holder is participating in the management of the UST or UST system only if the holder either:

(A) Exercises decision making control over the operational (as opposed to financial or administrative) aspects of the UST or UST system, such that the holder has undertaken responsibility for all or substantially all of the management of the UST or UST system; or

(B) Exercises control at a level comparable to that of a

manager of the borrower's enterprise, such that the holder has assumed or manifested responsibility for the overall management of the enterprise encompassing the day-to-day decision making of the enterprise with respect to all, or substantially all, of the operational (as opposed to financial or administrative) aspects of the enterprise.

(2) Operational aspects of the enterprise relate to the use, storage, filling, or dispensing of petroleum contained in an UST or UST system, and include functions such as that of a facility or plant manager, operations manager, chief operating officer, or chief executive officer. Financial or administrative aspects include functions such as that of a credit manager, accounts payable/receivable manager, personnel manager, controller, chief financial officer, or similar functions. Operational aspects of the enterprise do not include the financial or administrative aspects of the enterprise, or actions associated with environmental compliance, or actions undertaken voluntarily to protect the environment in accordance with applicable requirements in this Article.

(b) Actions that are not participation in management pre-foreclosure:

(1) Actions at the inception of the loan or other transaction. No act or omission prior to the time that indicia of ownership are held primarily to protect a security interest constitutes evidence of participation in management within the meaning of this Article. A prospective holder who undertakes or requires an environmental investigation (which could include a site assessment, inspection, and/or audit) of the UST or UST system or facility or property on which the UST or UST system is located (in which indicia of ownership are to be held), or requires a prospective borrower to clean up contamination from the UST or UST system or to comply or come into compliance (whether prior or subsequent to the time that indicia of ownership are held primarily to protect a security interest) with any applicable law or regulation, is not by such action considered to be participating in

the management of the UST or UST system or facility or property on which the UST or UST system is located.

(2) Loan policing and work out. Actions that are consistent with holding ownership indicia primarily to protect a security interest do not constitute participation in management for purposes of this subchapter. The authority for the holder to take such actions may, but need not, be contained in contractual or other documents specifying requirements for financial, environmental, and other warranties, covenants, conditions, representations or promises from the borrower. Loan policing and work out activities cover and include all such activities up to foreclosure, exclusive of any activities that constitute participation in management.

(A) Policing the security interest or loan.

(i) A holder who engages in policing activities prior to foreclosure will remain within the exemption provided that the holder does not together with other actions participate in the management of the UST or UST system as provided in § 501210(a), Guam Administrative Rules and Regulations. Such policing actions include, but are not limited to, requiring the borrower to clean up contamination from the UST or UST system during the term of the security interest; requiring the borrower to comply or come into compliance with applicable federal, state, and local environmental and other laws, rules, and regulations during the term of the security interest; securing or exercising authority to monitor or inspect the UST or UST system or facility or property on which the UST or UST system is located (including on-site inspections) in which indicia of ownership are maintained, or the borrower's business or financial condition during the term of the

security interest; or taking other actions to adequately police the loan or security interest (such as requiring a borrower to comply with any warranties, covenants, conditions, representations, or promises from the borrower).

(ii) Policing activities also include undertaking by the holder of UST environmental compliance actions and voluntary environmental actions taken in compliance with this chapter, provided that the holder does not otherwise participate in the management or daily operation of the UST or UST system as provided in §§ 501210(a) and 50130, Guam Administrative Rules and Regulations sections. Such allowable actions include, but are not limited to, release detection and release reporting, release response and corrective action, temporary or permanent closure of an UST or UST system, UST upgrading or replacement, and maintenance of corrosion protection. A holder who undertakes these actions must do so in compliance with the applicable requirements in this chapter. A holder may directly oversee these environmental compliance actions and voluntary environmental actions, and directly hire contractors to perform the work, and is not by such action considered to be participating in the management of the UST or UST system.

(B) Loan work out. A holder who engages in work out activities prior to foreclosure will remain within the exemption provided that the holder does not together with other actions participate in the management of

the UST or UST system as provided in § 501210(a) Guam Administrative Rules and Regulations. For purposes of this rule, "work out" refers to those actions by which a holder, at any time prior to foreclosure, seeks to prevent, cure, or mitigate a default by the borrower or obligor; or to preserve, or prevent the diminution of, the value of the security. Work out activities include, but are not limited to, restructuring or renegotiating the terms of the security interest; requiring payment of additional rent or interest; exercising forbearance; requiring or exercising rights pursuant to an assignment of accounts or other amounts owing to an obligor; requiring or exercising rights pursuant to an escrow agreement pertaining to amounts owing to an obligor; providing specific or general financial or other advice, suggestions, counseling, or guidance; and exercising any right or remedy the holder is entitled to by law or under any warranties, covenants, conditions, representations, or promises from the borrower.

(c) Foreclosure on an UST or UST system or facility or property on which an UST or UST system is located, and participation in management activities post-foreclosure.

(1) Foreclosure.

(A) Indicia of ownership that are held primarily to protect a security interest include legal or equitable title or deed to real or personal property acquired through or incident to foreclosure. For purposes of this Article, the term "foreclosure" means that legal, marketable or equitable title or deed has been issued, approved, and recorded, and that the holder has obtained access to the UST, UST system, UST facility, and property on which the UST or UST system is located, provided that the holder acted diligently to acquire marketable title or deed and to gain access to

the UST, UST system, UST facility, and property on which the UST or UST system is located. The indicia of ownership held after foreclosure continue to be maintained primarily as protection for a security interest provided that the holder undertakes to sell, re-lease an UST or UST system or facility or property on which the UST or UST system is located, held pursuant to a lease financing transaction (whether by a new lease financing transaction or substitution of the lessee), or otherwise divest itself of the UST or UST system or facility or property on which the UST or UST system is located, in a reasonably expeditious manner, using whatever commercially reasonable means are relevant or appropriate with respect to the UST or UST system or facility or property on which the UST or UST system is located, taking all facts and circumstances into consideration, and provided that the holder does not participate in management (as defined in § 501210(a), Guam Administrative Rules and Regulations prior to or after foreclosure.

(B) For purposes of establishing that a holder is seeking to sell, re-lease pursuant to a lease financing transaction (whether by a new lease financing transaction or substitution of the lessee), or divest in a reasonably expeditious manner an UST or UST system or facility or property on which the UST or UST system is located, the holder may use whatever commercially reasonable means as are relevant or appropriate with respect to the UST or UST system or facility or property on which the UST or UST system is located, or may employ the means specified in § 501210(c)(2), Guam Administrative Rules and Regulations). A holder that outbids, rejects, or fails to act upon a written, bona fide, firm offer of fair consideration for the UST or UST system or facility or

property on which the UST or UST system is located, as provided in § 501210(c)(2), Guam Administrative Rules and Regulations, is not considered to hold indicia of ownership primarily to protect a security interest.

(2) Holding foreclosed property for disposition and liquidation. A holder, who does not participate in management prior to or after foreclosure, may sell, re-lease, pursuant to a lease financing transaction (whether by a new lease financing transaction or substitution of the lessee), an UST or UST system or facility or property on which the UST or UST system is located, liquidate, wind up operations, and take measures, prior to sale or other disposition, to preserve, protect, or prepare the secured UST or UST system or facility or property on which the UST or UST system is located. A holder may also arrange for an existing or new operator to continue or initiate operation of the UST or UST system. The holder may conduct these activities without voiding the security interest exemption, subject to the requirements of this Article.

(A) A holder establishes that the ownership indicia maintained after foreclosure continue to be held primarily to protect a security interest by, within twelve months following foreclosure, listing the UST or UST system or the facility or property on which the UST or UST system is located, with a broker, dealer, or agent who deals with the type of property in question, or by advertising the UST or UST system or facility or property on which the UST or UST system is located, as being for sale or disposition on at least a monthly basis in either a real estate publication or a trade or other publication suitable for the UST or UST system or facility or property on which the UST or UST system is located, or a newspaper of general circulation (defined as one with a circulation over

10,000, or one suitable under any applicable federal, state, or local rules of court for publication required by court order or rules of civil procedure) covering the location of the UST or UST system or facility or property on which the UST or UST system is located. For purposes of this provision, the twelve-month period begins to run from the date that the marketable title or deed has been issued, approved and recorded, and the holder has obtained access to the UST, UST system, UST facility and property on which the UST or UST system is located, provided that the holder acted diligently to acquire marketable title or deed and to obtain access to the UST, UST system, UST facility and property on which the UST or UST system is located. If the holder fails to act diligently to acquire marketable title or deed or to gain access to the UST or UST system, the twelve-month period begins to run from the date on which the holder first acquires either title to or possession of the secured UST or UST system, or facility or property on which the UST or UST system is located, whichever is later.

(B) A holder that outbids, rejects, or fails to act upon an offer of fair consideration for the UST or UST system or the facility or property on which the UST or UST system is located, establishes by such outbidding, rejection, or failure to act, that the ownership indicia in the secured UST or UST system or facility or property on which the UST or UST system is located are not held primarily to protect the security interest, unless the holder is required, in order to avoid liability under federal or state law, to make a higher bid, to obtain a higher offer, or to seek or obtain an offer in a different manner.

(i) Fair consideration, in the case of a holder

maintaining indicia of ownership primarily to protect a senior security interest in the UST or UST system or facility or property on which the UST or UST system is located, is the value of the security interest as defined in this section. The value of the security interest includes all debt and costs incurred by the security interest holder, and is calculated as an amount equal to or in excess of the sum of the outstanding principal (or comparable amount in the case of a lease that constitutes a security interest) owed to the holder immediately preceding the acquisition of full title (or possession in the case of a lease financing transaction) pursuant to foreclosure, plus any unpaid interest, rent, or penalties (whether arising before or after foreclosure). The value of the security interest also includes all reasonable and necessary costs, fees, or other charges incurred by the holder incident to work out, foreclosure, retention, preserving, protecting, and preparing, prior to sale, the UST or UST system or facility or property on which the UST or UST system is located, re-lease, pursuant to a lease financing transaction (whether by a new lease financing transaction or substitution of the lessee), of an UST or UST system or facility or property on which the UST or UST system is located, or other disposition. The value of the security interest also includes environmental investigation costs (which could include a site assessment, inspection, and/or audit of the UST or UST system or facility or property on which the UST or UST system is located), and release

response and corrective action costs incurred under §§ 50151 to 50167, Guam Administrative Rules and Regulations or any other costs incurred as a result of reasonable efforts to comply with any other applicable federal, state or local law or regulation; less any amounts received by the holder in connection with any partial disposition of the property and any amounts paid by the borrower (if not already applied to the borrower's obligations) subsequent to the acquisition of full title (or possession in the case of a lease financing transaction) pursuant to foreclosure. In the case of a holder maintaining indicia of ownership primarily to protect a junior security interest, fair consideration is the value of all outstanding higher priority security interests plus the value of the security interest held by the junior holder, each calculated as set forth in this subsection.

(ii) Outbids, rejects, or fails to act upon an offer of fair consideration means that the holder outbids, rejects, or fails to act upon within ninety days of receipt, a written, bona fide, firm offer of fair consideration for the UST or UST system or facility or property on which the UST or UST system is located received at any time after six months following foreclosure, as defined in § 501210(c), Guam Administrative Rules and Regulations. A "written, bona fide, firm offer" means a legally enforceable, commercially reasonable, cash offer solely for the foreclosed UST or UST system or facility or property on which the UST or UST system is located, including all

material terms of the transaction, from a ready, willing, and able purchaser who demonstrates to the holder's satisfaction the ability to perform. For purposes of this provision, the six-month period begins to run from the date that marketable title or deed has been issued, approved and recorded to the holder, and the holder has obtained access to the UST, UST system, UST facility and property on which the UST or UST system is located, provided that the holder was acting diligently to acquire marketable title or deed and to obtain access to the UST or UST system, UST facility and property on which the UST or UST system is located. If the holder fails to act diligently to acquire marketable title or deed or to gain access to the UST or UST system, the six-month period begins to run from the date on which the holder first acquires either title to or possession of the secured UST or UST system, or facility or property on which the UST or UST system is located, whichever is later.

(3) Actions that are not participation in management post-foreclosure. A holder is not considered to be participating in the management of an UST or UST system or facility or property on which the UST or UST system is located when undertaking actions under this chapter, provided that the holder does not otherwise participate in the management or daily operation of the UST or UST system as provided in §§ 501210(a) and 501230, Guam Administrative Rules and Regulations. Such allowable actions include, but are not limited to, release detection and release reporting, release response and corrective action, temporary or permanent closure of an UST or UST system, UST upgrading or replacement, and maintenance of corrosion protection. A

holder who undertakes these actions must do so in compliance with the applicable requirements in this Article. A holder may directly oversee these environmental compliance actions and voluntary environmental actions, and directly hire contractors to perform the work, and is not by such action considered to be participating in the management of the UST or UST system.

§ 501211 to § 501219. [Reserved.]

§ 501220. Ownership of an Underground Storage Tank or Underground Storage Tank System or Facility or Property on which an Underground Storage Tank or Underground Storage Tank System is Located.

Ownership of an UST or UST system or facility or property on which an UST or UST system is located. A holder is not an "owner" of a petroleum UST or UST system or facility or property on which a petroleum UST or UST system is located for purposes of compliance with the UST technical standards as defined in § 501200(a), Guam Administrative Rules and Regulations, the UST release response and corrective action requirements under §§ 50151 to 50167, Guam Administrative Rules and Regulations, and the UST financial responsibility requirements under §§ 50190 to 501111, Guam Administrative Rules and Regulations, provided the person:

(1) Does not participate in the management of the UST or UST system as defined in § 501210, Guam Administrative Rules and Regulations; and

(2) Does not engage in petroleum production, refining, and marketing as defined in § 501200(b), Guam Administrative Rules and Regulations.

§§ 501221 to 501229. [Reserved.]

§ 501230. Operating an Underground Storage Tank or Underground Storage Tank System.

(a) Operating an UST or UST system prior to foreclosure. A holder, prior to foreclosure, as defined in § 501210(c), Guam Administrative Rules and Regulations, is not an "operator" of a petroleum UST or UST system for purposes of compliance with the UST technical standards as defined in § 501200(a), Guam Administrative Rules and Regulations, the UST corrective action requirements under §§ 50151 to 50167, Guam Administrative Rules and Regulations, and the UST financial responsibility requirements under §§ 50190 to 501111, Guam Administrative Rules and Regulations, provided that the holder is not in control of or does not have responsibility for the daily operation of the UST or UST system.

(b) Operating an UST or UST system after foreclosure. The following provisions apply to a holder who, through foreclosure, as defined in § 501210(c), Guam Administrative Rules and Regulations, acquires a petroleum UST or UST system or facility or property on which a petroleum UST or UST system is located.

(1) A holder is not an "operator" of a petroleum UST or UST system for purposes of compliance with this chapter if there is an operator, other than the holder, who is in control of or has responsibility for the daily operation of the UST or UST system, and who can be held responsible for compliance with applicable requirements of this chapter.

(2) If another operator does not exist, as provided for under paragraph (1), a holder is not an "operator" of the UST or UST system, for purposes of compliance with the UST technical standards as defined in § 501200(a), Guam Administrative Rules and Regulations, the UST corrective action requirements under §§ 50151 to 50167, Guam Administrative Rules and Regulations, and the UST financial responsibility requirements under §§ 50190 to 501111, Guam Administrative Rules and Regulations, provided that the holder:

(A) Empties all of its known USTs and UST systems within sixty calendar days after foreclosure, or

another reasonable time period specified by the agency, so that no more than 2.5 centimeters (one inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remains in the system; leaves vent lines open and functioning; and caps and secures all other lines, pumps, manways, and ancillary equipment; and

(B) Empties those USTs and UST systems that are discovered after foreclosure within sixty calendar days after discovery, or another reasonable time period specified by the agency, so that no more than 2.5 centimeters (one inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remains in the system; leaves vent lines open and functioning; and caps and secures all other lines, pumps, manways, and ancillary equipment.

(3) If another operator does not exist, as provided for under paragraph (1), in addition to satisfying the conditions under paragraph (2), the holder must either:

(A) Permanently close the UST or UST system in accordance with §§ 50171 to 50174, Guam Administrative Rules and Regulations, except § 50172(b), Guam Administrative Rules and Regulations; or

(B) Temporarily close the UST or UST system in accordance with the following applicable provisions of § 50170, Guam Administrative Rules and Regulations:

(i) Continue operation and maintenance of corrosion protection in accordance with § 50131, Guam Administrative Rules and Regulations;

(ii) Report suspected releases to the agency; and

(iii) Conduct a site assessment in accordance with

§ 50172(a), Guam Administrative Rules and Regulations if the UST system is temporarily closed for more than twelve months and the UST system does not meet the applicable system design, construction, and installation requirements in Article 2, except that the spill and overfill equipment requirements do not have to be met. The holder must report any suspected releases to the agency.

For purposes of this provision, the twelve-month period begins to run from the date on which the UST system is emptied and secured under paragraph (2).

(4) The UST system can remain in temporary closure until a subsequent purchaser has acquired marketable title to the UST or UST system or facility or property on which the UST or UST system is located. Once a subsequent purchaser acquires marketable title to the UST or UST system or facility or property on which the UST or UST system is located, the purchaser must decide whether to operate or close the UST or UST system in accordance with applicable requirements in this chapter.

§§ 501231 to 501239. [Reserved.]

ARTICLE 10
OPERATOR TRAINING

§ 501240. General Requirement for All UST Systems
§ 501241. Designation of Class A, B, and C Operators
§ 501242. Requirements for Operator Training
§ 501243. Timing of Operator Training
§ 501244. Retraining
§ 501245. Documentation
§ 501246 to § 501249. [Reserved.]

§ 501240. General Requirement for All UST Systems.

All owners and operators of UST systems must ensure they have designated Class A, Class B, and Class C operators who meet the requirements of this subchapter.

§ 501241. Designation of Class A, B, and C Operators.

(a) UST system owners and operators must designate:

(1) At least one Class A and one Class B operator for each UST or group of USTs at a facility; and

(2) Each individual who meets the definition of Class C operator at the UST facility as a Class C operator.

(b) Separate individuals may be designated for each class of operator or an individual may be designated for more than one of the operator classes.

(c) Owners and operators shall submit written notice to the agency identifying the Class A and Class B operators for each UST or tank system in use or temporarily out of use no later than thirty (30) calendar days after an operator assumes the operator's responsibilities as a Class A or Class B operator. The notification must include the name of each operator, the date training was completed, the name and address of each facility where the USTs or tank systems for which the operator has been designated is located, and written verification from a training program approved or administered by the agency that the Class A and Class B operator for each UST or tank system has successfully completed operator training in the operator's class.

§ 501242. Requirements for Operator Training.

UST system owners and operators must ensure Class A, Class B, and Class C operators meet the requirements of this section. Any individual designated for more than one operator class must successfully complete the required training program or comparable examination according to

the operator classes in which the individual is designated.

(1) Class A operators. Each designated Class A operator must either be trained in accordance with subparagraphs (A) and (B) or pass a comparable examination in accordance with paragraph (5).

(A) At a minimum, the training must teach the Class A operators about the purpose, methods, and function of:

(i) Spill and overfill prevention;

(ii) Release detection;

(iii) Corrosion protection;

(iv) Emergency response;

(v) Product and equipment compatibility and demonstration;

(vi) Financial responsibility;

(vii) Notification and permitting;

(viii) Temporary and permanent closure;

(ix) Reporting, recordkeeping, testing, and inspections;

(x) Environmental and regulatory consequences of releases; and

(xi) Training requirements for Class B and Class C operators.

(B) At a minimum, the training program must evaluate Class A operators to determine these individuals have the knowledge and skills to make informed decisions regarding compliance and determine whether appropriate individuals are fulfilling the operation, maintenance, and recordkeeping requirements for UST systems in accordance with subparagraph (A).

(2) Class B operators. Each designated Class B operator must either receive training in accordance with subparagraphs (A) and (B) or pass a comparable examination, in accordance with paragraph (5).

(A) At a minimum, the training program for Class B

operators must teach the Class B operator about the purpose, methods, and function of:

(i) Operation and maintenance, including components of UST systems, materials of UST system components, and methods of release detection and release prevention applied to UST components;

(ii) Spill and overfill prevention;

(iii) Release detection and related reporting;

(iv) Corrosion protection;

(v) Emergency response;

(vi) Product and equipment compatibility and demonstration;

(vii) Reporting, recordkeeping, testing, and inspections;

(ix) Environmental and regulatory consequences of releases; and

(x) Training requirements for Class C operators.

(B) At a minimum, the training program must evaluate Class B operators to determine these individuals have the knowledge and skills to implement applicable UST regulatory requirements in the field on the components of typical UST systems in accordance with subparagraph (A).

(3) Class C operators. Each designated Class C operator must either: be trained by a Class A or Class B operator in accordance with subparagraphs (A) and (B); complete a training program in accordance with subparagraphs (A) and (B); or pass a comparable examination, in accordance with paragraph (5).

(A) At a minimum, the training program for the Class C operator must teach the Class C operators to take appropriate actions (including notifying appropriate authorities) in response to emergencies or alarms caused by spills or releases resulting from the

operation of the UST system.

(B) At a minimum, the training program must evaluate Class C operators to determine these individuals have the knowledge and skills to take appropriate action (including notifying appropriate authorities) in response to emergencies or alarms caused by spills or releases from an underground storage tank system.

(4) Training program requirements. Any training program must meet the minimum requirements of this section, must incorporate an evaluation of operator knowledge through written examination, a practical demonstration, or other reasonable testing methods acceptable to the agency, and must be approved or administered by the agency. An operator training program may consist of in-class or on-line instruction and may include practical exercises.

(5) Comparable examination. A comparable examination must, at a minimum, test the knowledge of the Class A, Class B, or Class C operators in accordance with the requirements of paragraph (1), (2), or (3), as applicable. The acceptability of a comparable examination to meet the requirements of this section is determined by the agency. The agency may accept operator training verification from other states if the operator training is deemed by the agency to be equivalent to the requirements of this section.

§ 501243. Timing of Operator Training.

(a) An owner and operator must ensure that designated Class A, Class B, and Class C operators meet the requirements in § 501242 not later than October 13, 2015.

(b) Class A and Class B operators designated on or after October 13, 2015, must meet requirements in § 501242 within thirty (30) calendar days of assuming duties.

(c) Class C operators designated after October 13, 2015, must be trained

before assuming duties of a Class C operator.

§ 501244. Retraining.

(a) Class A and class B operators shall be retrained every two (2) years. Class C operators shall be retrained every three hundred sixty-five (365) calendar days.
(b) Class A and Class B operators of UST systems determined by the agency to be out of compliance must complete a training program or comparable examination in accordance with requirements in § 501242. The training program or comparable examination must be developed or administered by the agency or an independent organization. An UST or tank system is out of compliance if the system:

(1) Meets any of the delivery prohibition criteria outlined in § 501429; or
(2) Is in significant violation of other requirements, such as temporary or permanent closure, tank registration, or financial responsibility, as determined by the Administrator.

(c) UST system owners and operators must ensure Class A and Class B operators are retrained as required in subsection (b) no later than thirty (30) calendar days from the date the agency determines the facility is out of compliance except in one of the following situations:

(1) Class A and Class B operators take annual refresher training. Refresher training for Class A and Class B operators must cover all applicable requirements in § 501242;
(2) The agency, at its discretion, waives this retraining requirement for either the Class A or Class B operator or both.

§ 501245. Documentation.

Owners and operators of underground storage tank systems must maintain a list of designated Class A, Class B, and Class C operators and maintain records verifying that training and retraining, as applicable, have been completed, in accordance with § 50134 as follows:

(1) The list must:
   (A) Identify all Class A, Class B, and Class C operators currently designated for the facility; and
   (B) Include names, class of operator trained, date assumed duties, date each completed initial training, and any retraining.

(2) Records verifying completion of training or retraining must be a paper or electronic record for Class A, Class B, and Class C operators. The records, at a minimum, must identify name of trainee, date trained, operator training class completed, and list the name of the trainer or examiner and the training company name, address, and telephone number. Owners and operators must maintain these records for as long as Class A, Class B, and Class C operators are designated. The following requirements also apply to the following types of training:
   (A) Records from classroom or field training programs (including Class C operator training provided by the Class A or Class B operator) or a comparable examination must, at a minimum, be signed by the trainer or examiner;
   (B) Records from computer based training must, at a minimum, indicate the name of the training program and web address, if Internet based; and
   (C) Records of retraining must include those areas on which the Class A or Class B operator has been retrained.

§ 501246 to § 501249. [Reserved.]

ARTICLE 11
RESERVED

§ 501250 to § 501299. [Reserved.]

ARTICLE 12
PERMITS AND VARIANCES

§ 501300 to § 501322. [Reserved]
§ 501323. Permit Required
§ 501324. Application for Permit
§ 501325. Permit
§ 501326. Permit Renewal
§ 501327. Action On and Timely Approval of Application for Permit
§ 501328. Permit Conditions
§ 501329. Modification of Permit
§ 501330. Revocation or Suspension of Permit
§ 501331. Change in Owner or Operation for a Permit
§ 501332. Variance Allowed
§ 501333. Variance Application
§ 501334. Maintenance of Permit or Variance
§ 501335. Fees
§ 501336 to § 501339. [Reserved.]

§ 501300 to § 501322. [Reserved]

§ 501323. Permit Required.

(a) No person shall install, operate, modify, or close an UST or tank system without first obtaining a permit from the Administrator.
(b) The Administrator shall approve an application for a permit only if the applicant has submitted sufficient information to the satisfaction of the Administrator that the technical, financial, and other requirements of this chapter are or can be met and the installation and operation of the UST or

tank system will be done in a manner that is protective of human health and the environment.
(c) A permit shall be issued only in accordance with 10 GCA Chapter 76, and this Article, and it shall be the duty of the permittee to ensure compliance with the law in the installation, operation, and closure of the UST or tank system.
(d) Issuance of a permit shall not relieve any person of the responsibility to comply fully with all applicable laws

§ 501324. Application for Permit.

(a) Every application for a permit shall be submitted to the agency on the "Application for an Underground Storage Tank Permit" form prescribed by the agency.
(b) A permit fee in accordance with § 501335 shall accompany each application for a permit.
(c) The applicant shall submit sufficient information to enable the Administrator to make a decision on the application. Information submitted shall include but not be limited to the following:

(1) General information on involved parties, including the landowner, UST owner, and UST operator; location of the property; and basic description of the UST or tank system;
(2) Age, size, precise location within the property, and use of each UST;
(3) Other information required in the form prescribed by the Administrator; and
(4) Other information as the agency may require.

(d) Every application shall be signed by the owner and the operator and shall constitute an acknowledgment that the applicants assume responsibility for the installation and operation of the UST or tank system in accordance with this Article and the conditions of the permit, if issued. Each signatory shall be:

(1) In the case of a corporation, a principal executive officer of at least the level of vice president, or a duly authorized

representative if that representative is responsible for the overall operation of the UST or tank system;

(2) In the case of a partnership, a general partner;

(3) In the case of a sole proprietorship, the proprietor; or

(4) In the case of a county, state, or federal entity, either a principal executive officer, ranking elected official, or other duly authorized employee.

§ 501325. Permit.

(a) Upon approval of an application for a permit to install and operate an UST or tank system, the Administrator shall issue a permit for a term of one (1) year.

(b) The owner or operator shall have one (1) year from the issuance of the permit to install an UST or tank system. If the installation is not completed within one (1) year, the permit expires and the owner or operator must apply for a new permit.

(c) The owner or operator must inform the agency at least seven (7) calendar days prior to performing the actual installation. The information shall include the permit number, name and address of the UST or tank system, the contact person, the contact person's phone number, and date and time of actual installation.

(d) The owner or operator must notify the agency within thirty (30) calendar days after the installation of the UST or tank system. The notification shall be submitted on the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator. If information submitted on the form has changed since the original application. The form must certify compliance with the following requirements:

(1) Installation of tanks and piping under § 50120(f);

(2) Cathodic protection of steel tanks and piping under § 50120(b) and (c);

(3) Financial responsibility under Article 8; and

(4) Release detection under §§ 50141 and 50142.

(e) The agency, where practicable and appropriate, may issue one (1)

permit to the owner or operator of an UST system for the purpose of combining all USTs, piping, and any ancillary equipment constituting that UST system under one permit, irrespective of the number of individual USTs, so long as that UST system is part of one reasonably contiguous physical location.

§ 501326. Permit Renewal.

(a) On application, a permit may be renewed for a term of one (1) year.
(b) A renewal fee in accordance with § 501335 shall accompany each application for renewal of a permit.
(c) An application for a renewal shall be received by the agency at least sixty (60) calendar days prior to the expiration of the existing permit and shall be submitted on the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator.

§ 501327. Action On and Timely Approval of Application for Permit.

(a) The Administrator need not act upon nor consider any incomplete application for a permit. An application shall be deemed complete only when:

(1) All required and requested information, including the application form, plans, specifications, and other information required by this Article have been submitted in a timely fashion;
(2) All fees have been paid as prescribed in § 501335; and
(3) The Administrator determines that the application is complete.

(b) The Administrator shall approve, approve with conditions, or deny a complete application for a permit to install or operate an UST or tank system or a permit renewal, or modification, required under this chapter.

§ 501328. Permit Conditions.

The Administrator may impose conditions on a permit that the Administrator deems reasonably necessary to ensure compliance with this Article and any other relevant state requirement, including conditions relating to equipment, work practice, or operation. Conditions may include, but shall not be limited to, the requirement that devices for measurement or monitoring of regulated substances be installed and maintained and the results reported to the Administrator, all costs and expenses to be borne by the applicant.

§ 501329. Modification of Permit.

(a) The Administrator may modify a permit if there is a change that requires a modification to an existing permit. Changes requiring a permit modification shall include but not be limited to:

(1) The addition or removal of an UST from an UST system; and

(2) Any change to or modification of an UST or UST system which would otherwise place the existing UST or UST system out of compliance with this Article or an existing permit.

(b) An application for modification of a permit shall be made in writing to the agency and shall be accompanied by sufficient information on the planned renovation or modification to the UST or tank system to assist the agency in making a determination as to whether the application for modification should be denied or granted.

(c) Applications for a permit modification shall be received by the agency no later than sixty (60) calendar days prior to the occurrence of the event that prompted the application except that applications for change-in-service must be received by the agency at least thirty (30) calendar days before the owner or operator begins the change-in-service. Applications shall be submitted on the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator.

(d) Owners and operators shall submit a permit application to add USTs or tank systems to an existing permit. If the Administrator approves the

addition, the existing permit shall be terminated, and a new permit shall be issued which covers the additional USTs as well as the already-permitted USTs. The term of the new permit shall be for the remaining term of the original permit.

§ 501330. Revocation or Suspension of Permit.

The Administrator may revoke or suspend a permit if the Administrator finds any one of the following:

(1) There is a release or threatened release of regulated substances that the agency deems to pose an imminent and substantial risk to human health or the environment;
(2) The permittee violated a condition of the permit; or
(3) The permit was obtained by misrepresentation, or failure to disclose fully all relevant facts.

§ 501331. Change in Owner or Operator for a Permit.

(a) Should a change in owner or operator of an UST or tank system occur, the new owner or operator shall complete and submit the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator.
(b) The new owner or operator shall submit the completed form to the agency at least thirty (30) calendar days prior to the change in owner or operator.

§ 501332. Variance Allowed.

Provisions pursuant to this Article relating to USTs or tank systems which are more stringent than Title 40, Part 280 of the Code of Federal Regulations, published by the Office of the Federal Register, as amended as of July 1, 2017, may be varied by the Administrator in accordance with this Article. No variance may be less stringent than the federal requirements.

§ 501333. Variance Application.

(a) An application for a variance shall be submitted to the agency on the "Notification for Underground Storage Tanks Permits" form prescribed by the Administrator.
(b) A variance fee in accordance with § 501335 shall accompany each application for a variance.
(c) Every application shall be signed by the owner and operator, and the signature shall be by one of the following:

(1) In the case of a corporation, by a principal executive officer of at least the level of vice president, or a duly authorized representative if that representative is responsible for the overall operation of the UST or tank system;
(2) In the case of a partnership, by a general partner;
(3) In the case of a sole proprietorship, by the proprietor; or
(4) In the case of a county, state, or federal entity, by a principal executive officer, ranking elected official or other duly authorized employee.

(d) The Administrator shall approve, approve with conditions, or deny a complete application as required under this Article. The Administrator shall notify the applicant of the agency's decision, within one hundred eighty (180) calendar days of receipt of a complete application. Otherwise, a complete application is deemed approved one hundred eighty (180) calendar days after it is received by the agency.

§ 501334. Maintenance of Permit or Variance.

(a) Permits and variances, including application records, shall be maintained at the location of the UST or tank system for which the permit was issued and shall be made available for inspection upon request of any duly authorized representative of the agency.
(b) No person shall willfully deface, alter, forge, counterfeit, or falsify any permit or variance.

§ 501335. Fees.

(a) Every applicant for a permit or a variance, or applicant for modification or renewal of a permit or variance, shall pay the applicable fees as set forth below:

Type of Application	Permit	Variance
Permit Application Fee per Tank (New Installation)	$500.00	$550.00
Permit to Operate Fee per Tank (Annual)	$250.00	
Permit to Modify	$150.00	$200.00
Permit to Close	$500.00	$550.00
Permit to Install OWS	$500.00	$550.00
Permit to Close OWS	$500.00	
Request for Proposal (Copy)	$25.00	
Installer's Certification (2 years)	$150.00	
Operator's Certification A & B (2 years)	$150.00	
Operator's Re-Certification (2 years)	$100.00	

(b) Fees shall be submitted with the application and are nonrefundable.
(c) Fees shall be made payable to Guam Environmental Protection Agency UST-LUST Fund.
(d) If more than one type of application is combined, the highest applicable fee will be assessed. However, a permit application and a variance application shall not be combined under one fee.

§ 501336 to § 501399. [Reserved.]

ARTICLE 13
ENFORCEMENT

§ 501400 to § 501420. [Reserved.]
§ 501421. Purpose.
§ 501422. Field Citation
§ 501423 to § 501428. [Reserved.]
§ 501429. Delivery, Deposit, and Acceptance Prohibition

§ 501400 to § 501420. [Reserved.]

§ 501421. Purpose.

The purpose of this Article is to create an enforcement program that facilitates the effective and expeditious resolution of violations of 10 GCA Chapter 76 and this Chapter.

§ 501422. Field Citations.

(a) Field citations may be issued for violations of 10 GCA Chapter 76 and this Chapter, that the agency deems appropriate for resolution through the issuance of a field citation. Nothing in this section requires the agency to elect one enforcement mechanism over another and the decision to proceed with one course of action over, or in conjunction with, another is within the discretion of the Administrator.
(b) The field citation is an offer to settle an allegation of noncompliance with this Chapter. If the owner or operator declines to accept the agency's offer to settle within the time period set forth in the field citation, the agency may bring administrative or civil enforcement action under 10 GCA Chapter 76.
(c) The field citation shall set forth sufficient facts to notify the recipient of the alleged violations, the applicable law, the proposed settlement amount, and the time period during which to respond.
(d) By returning the signed settlement agreement attached to the field citation and payment of the proposed settlement amount to the agency, the owner or operator will be deemed to have accepted the terms and

conditions of the settlement offer.
(e) By signing the settlement agreement, the owner or operator waives his or her right to a contested case hearing pursuant to 10 GCA Chapter 76 and 5 GCA Chapter 9.

§ 501423 to § 501428. [Reserved.]

§ 501429. Delivery, Deposit, and Acceptance Prohibition.

(a) No person shall deliver to, deposit into, or accept a regulated substance into an UST or tank system that has been identified by the agency as ineligible for delivery, deposit, or acceptance.
(b) An UST or tank system shall be identified by the agency as ineligible for delivery, deposit, or acceptance by placement of a tag or other notice of ineligibility onto the fill pipe of the ineligible UST or tank system. If an owner or operator is not present at the facility at the time the underground storage tank is identified as ineligible, the agency may notify an employee at the facility at the time of identification in lieu of the owner or operator.
(c) No person shall remove, tamper with, destroy, or damage a tag or other notice of ineligibility affixed to any UST or tank system unless authorized to do so by the agency. Removal of a tag or other notice of ineligibility by the agency or person authorized by the agency shall occur only after the agency confirms that the conditions giving rise to the delivery prohibition have been corrected to the agency's satisfaction. The agency shall make this determination either at a hearing, if one is requested in accordance with this section, or as soon as practicable.
(d) Pursuant to this section, a tag or other notice of ineligibility may immediately be affixed to the fill pipe of an UST or tank system upon finding by the agency of any of the following:

(1) Operating without a permit issued by the agency;
(2) Operating inconsistently with one or more conditions of a permit issued by the agency;
(3) Required spill prevention equipment is not installed or

properly functioning or maintained;

(4) Required overfill protection equipment is not installed or properly functioning or maintained;

(5) Required release detection equipment is not installed or properly functioning or maintained;

(6) Required corrosion protection equipment is not installed or properly functioning or maintained;

(7) Failure to maintain financial responsibility; or

(8) Failure to protect a buried metal flexible connector from corrosion.

(e) An owner or operator of an UST or tank system designated by the agency to be ineligible may request a hearing to contest the agency's determination of ineligibility. The hearing shall modify or affirm the agency's determination of ineligibility and shall be conducted in accordance with 10 GCA Chapter 76 and 5 GCA Chapter 9, and the agency's rules of practice and procedure.

AAL CHECKLIST FOR ADOPTION OF GUAM ADMINISTRATIVE RULES
(current as of 2-6-19)

____ 1. Check to make sure that either the Guam Legislature or some federal law has delegated authority to the agency or board to adopt regulations.

____ 2. Check for proper rule numbering and format in accordance with the Compiler of Law's rule citation format. 5 GCA § 9303(a)(1).

____ 3. Draft regulations. They must be consistent with:

____ a. The agency's or board's enabling legislation.

____ b. Any GovGuam statutes affecting or creating agency's programs.

____ c. Any federal statute or regulation creating or affecting your program.

____ 4. Draft either the Economic Impact Statement (EIS) or the Preliminary Cost Assessment (PCA) and have it available for public inspection prior to the public hearing. 5 GCA § 9301(d), (e), (f), (g), (h), (i), and (j).

____ 5. Public notice of your hearing must be given in a newspaper of general circulation in Guam (the *Pacific Daily News* or *Marianas Variety)* at least ten (10) calendar days before the date of your hearing. 5 GCA § 9301(a). Contents of this notice must include:

____ a. Date, hour, and place of the public hearing. 5 GCA § 9301(a).

____ b. A statement describing the subject matter of the regulations. 5 GCA § 9301(a).

____ c. A statement that at least 5 copies of the agency's proposed regulations are on file at your agency's office where it may be examined by any interested member of the public AND that copies of the proposed rules are also available on your agency's website. 5 GCA § 9301(a).

____ 6. Public hearing is conducted by the agency. Testimony by any interested party must be heard, given consideration, and recorded. 5 GCA §§ 9301(b) and 9303(a)(2), (3), and (4).

____ 7. A transcript of the public hearing must be prepared. 5 GCA § 9303(a)(2), (3), and (4).

____ 8. Agency approval of final draft of regulations with any changes made subsequent to the public hearing may take place any time after public hearing---either through Director approval or Board approval through resolution or meeting minutes. 5 GCA § 9303(a)(2), (3), (4), and (b).

____ 9. Formal referral to the Governor of Guam. 5 GCA § 9303(a)(2). Contents should include:

____ a. A short cover memo containing:

____ 1. Reference to statutory grant of authority.

____ 2. Reference to any other applicable GovGuam or federal statutes, regulations or executive orders.

____ 3. A certification of the record for the proposed rules. 5 GCA § 9303(a)(2).

____ 3. Request for policy review under the AAL. 5 GCA § 9303(a)(2).

____ b. A printed copy of the proposed regulations and an electronic copy in both pdf and word formats. 5 GCA § 9303(a)(2).

____ c. A printed copy of the entire record and an electronic (pdf.) copy of the entire record, 5 GCA § 9303(a)(2), including:

____ 1. Director memorandum or Board Meeting Minutes or resolution approving the proposed rules. 5 GCA § 9303(a)(2).

____ 2. A copy of the public notice. 5 GCA § 9303(a)(2).

____ 3. A copy of the EIS or the PCA. 5 GCA § 9303(a)(2).

____ 4. The transcript of the public hearing. 5 GCA § 9303(a)(2).

____ 10. Formal approval by the Governor. 5 GCA § 9303(a)(2). Contents should include:

____ a. Approved version of the proposed rules.

____ b. Written Memorandum approving the rules, signed by the Governor.

____ 11. Formal referral to the Attorney General. 5 GCA § 9303(a)(3). Contents should include:

____ a. A short cover memo signed by the Director, containing:

____ 1. Reference to statutory grant of authority.

____ 2. Reference to any other applicable GovGuam or federal statutes, regulations or executive orders.

____ 3. A certification of the record for the proposed rules. 5 GCA § 9303(a)(3).

____ 3. Request for review of constitutionality and legality under the AAL and all applicable statutory authority, laws, regulations, or Executive Orders. 5 GCA § 9303(a)(3).

____ b. A printed copy of the proposed regulations and an electronic copy in both pdf and word formats. 5 GCA § 9303(a)(3).

____ c. A printed copy of the entire record and an electronic (pdf.) copy of the entire record, including: 5 GCA § 9303(a)(3).

____ 1. Director's Memorandum or Board meeting minutes or resolution approving the proposed rules. 5 GCA § 9303(a)(3).

____ 2. A copy of the public notice. 5 GCA § 9303(a)(3).

____ 3. A copy of the EIS or the PCA. 5 GCA § 9303(a)(3).

____ 4. The transcript of the public hearing. 5 GCA § 9303(a)(3).

____ 5. Governor's written approval. 5 GCA § 9303(a)(2), and (3).

____ 12. Formal approval by the Attorney General. Contents should include:

____ a. Final approved version of the proposed rules.

____ b. Written memorandum approving the rules, signed by the Attorney General.

____ 13. Filing with the Speaker of the Legislature. 5 GCA § 9303(a)(4). Contents should include:

____ a. A short cover memo signed by the Director, containing:

____ 1. The statement: **"This is a Transmittal to I Liheslaturan Guåhan of Proposed Rules and Regulations pursuant to the Administrative Adjudication Law."** 5 GCA § 9303(a)(4).

____ 2. Reference to the statutory grant of authority and any other applicable GovGuam or federal statutes, regulations or executive orders.

____ 3. A certification of the record for the proposed rules. 5 GCA § 9303(a)(4).

____ b. A printed copy of the proposed regulations and an electronic copy in both pdf and word formats. 5 GCA § 9303(a)(4).

____ c. A printed copy of the entire record and an electronic (pdf.) copy of the entire record, including: 5 GCA § 9303(a)(4).

____ 1. Director's Memorandum or Board meeting minutes or resolution approving the proposed rules. 5 GCA § 9303(a)(4) and (b).

____ 2. A copy of the public notice. 5 GCA § 9303(a)(4).

____ 3. A copy of the EIS or the PCA. 5 GCA § 9303(a)(4).

____ 4. The transcript of the public hearing. 5 GCA § 9303(a)(4).

____ 5. The Governor's written approval. 5 GCA § 9303(a)(4).

____ 6. The Attorney General's written approval. 5 GCA § 9303(a)(4).

____ 14. The Proposed rules shall be referred to the legislative committee with oversight of the subject matter, and that committee or the Committee of the Whole shall conduct one (1) or more public hearings on the proposed rules within seventy-five (75) calendar days from the date of filing of the rules with the Speaker. 5 GCA § 9303(b).

____ 15. 90 days after filing with the Speaker, the regulations become law by default, unless the Legislature approves, disapproves, or amends the rules within the 90 days, OR the rules are disapproved upon adjournment with no appointed date for action. 5 GCA § 9303(c).

AHENSIAN PRUTEKSION LINA'LA GUÅHAN

LOURDES A. LEON GUERRERO, GOVERNOR OF GUAM • JOSHUA F. TENORIO, LIEUTENANT GOVERNOR OF GUAM
WALTER S. LEON GUERRERO, ADMINISTRATOR

DEC 17 2019

The Honorable Leevin T. Camacho
Attorney General of Guam
590 South Marine Corps Drive, Suite 901
Tamuning, Guam 96913

RE: DRAFT UNDERGROUND STORAGE TANK RULES AND REGULATIONS

Hafa Adai Attorney General Camacho:

The Guam Environmental Protection Agency (Guam EPA) is requesting your review and approval of the proposed Underground Storage Tank Rules and Regulations as to form, constitutionality, compliance with the requirements of the Administrative Adjudication Law (AAL), and compliance with Guam EPA's statutory authority to promulgate rules. Pursuant to 5 Guam Code Annotated (GCA) § 9303(a)(1) of the AAL, as amended by Public Law 34-032 (July 13, 2017) and 10 GCA , Chapter 76, Article 1, § 76104(a).

Guam EPA hereby submits pursuant to 5 GCA § 9303(a)(3) a copy of the proposed UST Rules and Regulations in printed and identical electronic (pdf and word) version and other supporting information and documents for your review and approval:

(1) Guam EPA's Board of Directors Resolution # 19-002;
(2) Guam EPA Letter/DOA Response, pursuant to 5 GCA § 9301(e);
(3) Fact Sheet;
(4) Ads for the Notice of Public Hearing and Public Comment and Review Period for the proposed UST Rules and Regulations. The Ads were posted in the Guam Daily Post on August 5 and August 30, 2019, and at Guam EPA's website at www.epa.guam.gov pursuant to 5 GCA § 9301(a);
(5) Guam EPA's Economic Impact Statement; and
(6) Public Hearing Transcript.

The Agency looks forward to your expertise in assisting us in our effort to promulgate rules and regulations. Should you have any questions, please feel free to contact our office at 300-4751 or email me at walter.leonguerrero@epa.guam.gov.

Sincerely,

for WALTER S. LEON GUERRERO
Administrator

RECEIVED 12/18/19
OFFICE OF THE ATTORNEY GENERAL
ADMINISTRATION
@8:50

Doc. No. 35GL-20-2341.

October 19, 2020

Transmitted via Central Files

RECEIVED
OCT 2 2 2020
Guam Environmental Protection Agency

Walter S. Leon Guerrero
Administrator
Guam Environmental Protection Agency
17-3304 Mariner Avenue
Tiyan Barrigada, Guam 96913-1617

Re: *Proposed* Rules and Regulations for the Underground Storage Tank

Dear Mr. Leon Guerrero,

Thank you for submitting the proposed Rules and Regulations Governing the Adoption of Codes of Professional Conduct/Ethics by the Guam Environmental Protection Agency. In reviewing the documents, I was pleased to see the attention and detail that was afforded in their preparation. These rules and regulations, in describing the minimum standards for the regulation of underground storage tanks describe well the policy of the government of Guam to protect our environment.

I encourage you to continue the good work in protecting the natural resources of our island.

Now, therefore, I, Lourdes A. Leon Guerrero, *I Maga'hågan Guahan,* Governor of Guam, pursuant to Title 5, Chapter 9, Article 3, am approving these rules and regulations as to policy.

Senseremente,

LOURDES A. LEON GUERRERO
Maga'hågan Guahan
Governor of Guam

Enclosure(s): EPA letter dated 10 14 2020 with enclosed rules and regulations

cc: Honorable Joshua F. Tenorio, *I Sigundo Maga'låhen Guahan*
Jon Junior Calvo, Chief of Staff

GUAM ENVIRONMENTAL PROTECTION AGENCY • *AHENSIAN PRUTEKSIÓN LINA'LA' GUÅHAN*
LOURDES A. LEON GUERRERO • GOVERNOR OF GUAM | JOSHUA F. TENORIO • LIEUTENANT GOVERNOR OF GUAM
WALTER S. LEON GUERRERO • ADMINISTRATOR | MICHELLE C. R. LASTIMOZA • DEPUTY ADMINISTRATOR

The Honorable Lourdes A. Leon Guerrero
I Maga'hågan Guåhan – Governor of Guam
Ricardo J. Bordallo Complex
513 West Marine Corps Drive
Hagåtna, Guam 96910

OCT 14 2020
Lillian Kosaka

RE: DRAFT UNDERGROUND STORAGE TANK RULES AND REGULATIONS

Buenas yan Hafa Adai Madam Governor,

The Guam Environmental Protection Agency (Guam EPA) is requesting your review and approval of the proposed Underground Storage Tank (UST) Rules and Regulations in compliance with the requirements of the Administrative Adjudication Law (AAL), and compliance with Guam EPA's statutory authority to promulgate rules. Pursuant to 5 Guam Code Annotated (GCA) § 9303(a)(1) of the AAL, as amended by Public Law 34-032 (July 13, 2017) and 10 GCA, Chapter 76, Article 1, § 76104(a).

Guam EPA hereby submits pursuant to 5 GCA § 9303(a)(3) a copy of the proposed UST Rules and Regulations in printed and identical electronic (pdf and word) version and other supporting information and documents for your review and approval:

(1) Guam EPA's Board of Directors Resolution # 19-002;
(2) Posted at Guam EPA's website at www.epa.guam.gov;
(3) DOA Letter for concurrence and approval;
(4) Fact Sheet;
(5) Ads for the Notice of Public Hearing and Public Comment and Review Period for the proposed UST Rules and Regulations. The Ads were posted in the Guam Daily Post on August 5 and August 30, 2019, pursuant to 5 GCA § 9301(a);
(6) Guam EPA's Economic Impact Statement and EPA's Assessment of the Potential Costs, Benefits, and Other Impacts of the Final Revisions to EPA's UST Regulations;
(7) Public Hearing Transcript;
(8) Guam EPA's cover letter to the Attorney General dated December 17, 2019; and
(9) Attorney General's Letter of Approval dated September 17, 2020.

The Agency looks forward to your review and approval of the Draft UST Rules and Regulations. Should you have any questions, please feel free to contact our office at 300-4751 or email me at walter.leonguerrero@epa.guam.gov.

Sincerely,

WALTER S. LEON GUERRERO
Administrator