~~Chapter 17~~
CHAPTER 1
~~Storage Tanks~~ STORAGE TANKS

February 12, 2018 - EQC

~~Part~~ PART A

~~STORAGE TANK SYSTEMS:~~ INTRODUCTION

Section 1. Authority. These standards are promulgated pursuant to the Wyoming Environmental Quality Act Statutes 35-11-101 through 35-11-180~~2~~3, specifically, but not limited to, Wyoming Statutes 35-11-501~~302,~~ and 35-11-1414 through 35-11-14~~28~~32.

Section 2. Codes and ~~s~~Standards ~~r~~Referenced in this Chapter.

(a) Wherever a Chapter is referenced, it means Wyoming Solid and Hazardous Waste Divison Rules and Regulations, Chapter 1 Storage Tank Program, Storage Tanks, unless otherwise specified. Wherever a Part or Section is referenced, it means that Part or Section in this Chapter 1 unless otherwise specified.

(~~a~~b) There are a number of places within this ~~c~~Chapter where codes and standards are referenced. There are also references to regulations issued by other agencies. The following apply to all such references in this ~~c~~Chapter:

(~~a~~i) In all cases, the referenced codes, standards, and regulations are lengthy documents in and of themselves. Inserting the entire text of these documents into this ~~c~~Chapter would be unduly cumbersome and expensive~~;~~.

(~~b~~ii) The references to these codes, standards, and regulations in this Chapter fully ~~identifies~~ identify the material by title and date, ~~facility, or statutory reference. All such referenced materials are incorporated as they stand on the day that this chapter is adopted into law,~~ and any later amendments or editions are specifically not incorporated into this ~~c~~Chapter~~;~~.

(~~c~~iii) The department has obtained a complete copy of the ~~current edition of every~~ code, standard, or regulation referenced in this ~~c~~Chapter and placed them in the Wyoming State

Library. These materials can be checked out either directly from the State Library or through interlibrary loan from any Wyoming library, which is part of that system~~;~~.

(~~d~~iv) Each code, standard, or regulation referenced in this ~~c~~Chapter is published independently and is available from the publisher. The name, address and contact information for all such publishers ~~is~~ are contained in ~~the definition~~ ~~s~~Section 5. ~~of this chapter.~~ Copies may be obtained from the publisher~~;~~.

(~~e~~v) Copies of the codes, standards, or regulations referenced in this ~~c~~Chapter are also available at cost by contacting the Storage Tank Program, 307-777-7752. ~~122 West 25th Street, Cheyenne, WY 82002.~~

(c) The full reference for all codes and standards is provided in this Section. The abbreviated reference is provided throughout the Chapter. When an abbreviated reference is encountered, refer to this Section for the full reference.

(i) A4A Airport Fuel Facilities Operations and Maintenance Guidance Manual, 2004.

(ii) American Petroleum Institute (API)

(A) API Recommended Practice 1007, “Loading and Unloading of MC 306/DOT 406 Cargo Tank Motor Vehicles, 2001.”

(B) API Recommended Practice 1604, “Closure of Underground Petroleum Storage Tanks, Third Edition, March 1996; Reaffirmed December 2010.”

(C) API Recommended Practice 1615, “Installation of Underground Petroleum Storage Systems, Fifth Edition, March 1996; Reaffirmed November 2011.”

(D) API Recommended Practice 1626, “Storing and Handling Ethanol and Gasoline-Ethanol Blends at Distribution Terminals and Filling Stations, Second Edition, 2010.”

(E) API Recommended Practice 2016, “Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks, First Edition, August 2001.”

(F) API Recommended Practice 2200, “Repairing Crude Oil, Liquefied Petroleum Gas, and Product Pipelines, Fifth

Edition, 2015."

(G) API Specification 12D, "Specification for Field Welded Tanks for Storage of Production Liquids, Eleventh Edition, 2008."

(H) API Standard 620, "Design and Construction of Large, Welded Low-Pressure Storage Tanks, Twelfth Edition, 2013."

(I)_ API Standard 650, "Welded Steel Tank for Oil Storage, Twelfth Edition, 2013."

(J) API Standard 651, "Cathodic Protection of Aboveground Storage Tanks, Fourth Edition, 2014."

(K) API Standard 653, "Tank Inspection, Repair, Alteration, and Reconstruction, Fifth Edition, 2014."

(L) API Standard 1631, "Interior Lining and Periodic Inspection of Underground Storage Tanks, Fifth Edition, 2001."

(M) API Standard 2000, "Venting Atmospheric and Low-Pressure Storage Tanks, Seventh Edition, 2014."

(N) API Standard 2015, "Safe Entry and Cleaning of Petroleum Storage Tanks, Planning and Managing Tank Entry From Decommissioning Through Recommissioning, Seventh Edition, 2014."

(iii) American Society for Testing and Materials (ASTM)

(A) ASTM D6751, "Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels, 2015."

(B) ASTM G158, "Standard Guide for Three Methods of Assessing Buried Steel Tanks, 2016."

(iv) Code of Federal Regulations (CFR)

(A) 10 CFR Part 50, as published on January 1, 2016.

(B) 29 CFR Part 1910, as published on July 1, 2016.

(C) 40 CFR Part 112, as published on July 1, 2016.

(D) 40 CFR Part 136, as published on July 1, 2016.

(E) 40 CFR Part 141, as published on July 1, 2016.

(F) 40 CFR Part 261, as published on July 1, 2016.

(G) 40 CFR Part 280, as published on July 1, 2016.

(H) 40 CFR Part 302, as published on July 1, 2016.

(v) Fiberglass Tank and Pipe Institute

(A) Recommended Practice T-95-02, "Remanufacturing of Fiberglass Reinforced Plastic (FRP) Underground Storage Tanks, 1995."

(B) Recommended Practice 2007-2, "Field Test Protocol for Testing the Annular Space of Installed Underground Fiberglass Double and Triple-Wall Tanks with Dry Annular Space, 2007."

(vi) International Fire Code (IFC), 5704.2.7.3, 5704.2.3.1, 5704.2.3.2, and 5703.5, 2015.

(vii) National Association of Corrosion Engineers (NACE)

(A) NACE International Standard Practice SP0169-2013, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems, 2013."

(B) NACE International Standard Practice SP0285-2011, "External Corrosion Control of Underground Storage Tank Systems by Cathodic Protection, 2011."

(C) NACE Standard SP0193-2016, "External Cathodic Protection of On-Grade Carbon Steel Storage Tank Bottoms, 2016."

(D) NACE International Test Method TM0101-2012, "Measurement Techniques Related to Criteria for Cathodic Protection of Underground Storage Tank Systems, 2012."

(E) NACE International Test Method TM0497-2012, "Measurement Techniques Related to Criteria for Cathodic Protection on Underground or Submerged Metallic Piping Systems, 2012."

(viii) National Fire Protection Association (NFPA)

(A) NFPA Standard 30, "Flammable and Combustible Liquids Code, 2015 Edition."

(B) NFPA Standard 30A, "Code for Motor Fuel Dispensing Facilities and Repair Garages, 2015 Edition."

(C) NFPA Standard 326, "Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair, 2015 Edition."

(D) NFPA Standard 385, "Standard for Tank Vehicles for Flammable and Combustible Liquids, 2017 Edition."

(ix) National Leak Prevention Association

(A) Standard 631, Chapter A, "Entry, Cleaning, Interior Inspection, Repair, and Lining of Underground Storage Tanks, 2009."

(B) Standard 631, Chapter C, "Internal Inspection of Steel Tanks for Retrofit of Cathodic Protection, 2009."

(x) Petroleum Equipment Institute (PEI)

(A) PEI RP100, "Recommended Practices for Installation of Underground Liquid Storage Systems, 2011."

(B) PEI RP200, "Recommended Practices for Installation of Aboveground Storage Systems for Motor Vehicle Fueling, 2013."

(C) PEI RP900, "Recommended Practices for the Inspection and Maintenance of UST Systems, 2008."

(D) PEI RP1200, “Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities, 2017.”

(xi) Steel Tank Institute (STI)

(A) Association for Composite Tanks ACT-100-U®, Specification F894, “Specification for External Corrosion Protection of FRP Composite Steel Underground Storage Tanks, 2015.”

(B) Association for Composite Tanks ACT-100-U®, Specification F961, “Specification for External Corrosion Protection of Composite Steel Underground Storage Tanks, 2015.”

(C) STI Recommended Practice R012, “Recommended Practice for Interstitial Tightness Testing of Existing Underground Double Wall Steel Tanks, 2007.”

(D) STI Recommended Practice R051, Cathodic Protection Testing Procedures for STI-P3® USTs, 2006.”

(E) STI Recommended Practice R892, “Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems, 2006.”

(F) STI Recommended Practice R972, “Recommended Practice for the Addition of Supplemental Anodes to STI-P3® Tanks, 2010.”

(G) STI-P3® Specification and Manual for External Corrosion Protection of Underground Steel Storage Tanks, 2015.

(H) STI Specification F922, “Steel Tank Institute Specification for Permatank®, 2014.”

(I) STI Standard F841, “Standard for Dual Wall Underground Steel Storage Tanks, 2006.”

(xii) Underwriters Laboratories, Inc. (UL)

(A) UL Standard 58, “Standard for Safety for Steel Underground Tanks for Flammable and Combustible Liquids, Ninth Edition, 1996.”

(B) UL Standard 142, “Steel Aboveground Tanks for

Flammable and Combustible Liquids, Ninth Edition, 2006."

(C) UL Standard 567, "Standard for Emergency Breakaway Fittings, Swivel Connectors and Pipe-Connection Fittings for Petroleum Products and LP-Gas, Tenth Edition, 2014."

(D) UL Standard 971, "Standard for Nonmetallic Underground Piping for Flammable Liquids, First Edition, 1995."

(E) UL Standard 1316, "Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures, Second Edition, 1994."

(F) UL Standard 1746, "Standard for External Corrosion Protection Systems for Steel Underground Storage Tanks, Third Edition, 2007."

(G) UL Standard 2085, "Protected Aboveground Tanks for Flammable and Combustible Liquids, Second Edition, 1997."

(H) UL Subject 971A, "Outline of Investigation for Metallic Underground Fuel Pipe, First Edition, 2006."

(xiii) Underwriters Laboratories of Canada (UL of Canada)

(A) UL of Canada S603, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids, 2014."

(B) UL of Canada S603.1, "Standard for External Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids, 2014."

(C) UL of Canada S615, "Standard for Reinforced Plastic Underground Tanks for Flammable and Combustible Liquids, 2014."

(D) UL of Canada S631, "Standard for Isolating Bushings for Steel Underground Tanks Protected with External Corrosion Protection Systems, 2005."

(E) UL of Canada S660, "Standard for Nonmetallic Underground Piping for Flammable and Combustible Liquids, 2008."

(xiv) U.S. Department of Defense

(A) Directive 4140.25, “DoD Management Policy for Energy Commodities and Related Services, 2015.”

(B) Unified Facilities Criteria (UFC) 3-460-01, “Petroleum Fuel Facilities, 2010.”

(xv) U.S. Department of Health, Education, and Welfare, Criteria for a Recommended Standard, Working in Confined Spaces, December 1979.

Section 3. Purpose. The purpose of these rules and regulations is to:

(a) Establish a storage tank leak prevention program to prevent releases and to minimize health hazards and environmental damage should a release occur;

(b) Allow Wyoming to assume primacy of the U.S. Environmental Protection Agency’s (EPA) underground storage tank (UST) program;

(c) Establish priorities for cleaning up releases from storage tank systems; ~~and~~

(d) Establish a procedure to determine environmental restoration standards;~~.~~

(e) Provide underground storage tank system owners and/or operators with the option of financial responsibility coverage to help meet the federal requirements; and

(f) Provide aboveground storage tank system owners and/or operators with the option of financial responsibility coverage.

Section 4. Applicability. The requirements of this Chapter apply to all owners and/or operators of aboveground storage tank systems as defined in W.S. 35-11-1415(xi). Only aboveground tank systems used by a dealer to dispense gasoline or diesel to the public are regulated by these regulations. The requirements of this Chapter apply to all owners and/or operators of underground storage tank systems as defined in W.S. 35-11-1415 except: ~~The requirements of this chapter apply to all owners and/or operators of storage tank systems as de0fined in W.S. 35-11-1415; except that Parts B, C, D, E, and G of this chapter do not apply for any of the following types of UST systems:~~

(a) Airport hydrant fuel distribution systems and UST systems with field-constructed tanks shall meet the requirements in Part M.

(b) Parts B, C, D, E, G, L, and M do not apply to:

(~~a~~i) Wastewater treatment tank systems (not excluded in W.S. 35-11-1415);

(ii) Aboveground storage tanks associated with airport hydrant fuel distribution systems regulated under Part M or UST systems with field-constructed tanks regulated under Part M;

(~~b~~iii) Any UST system containing radioactive materials that are regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 and following); and

(~~c~~iv) Any UST system that is part of an emergency generator system at nuclear power generation facilities licensed ~~regulated~~ by the Nuclear Regulatory Commission ~~under~~ and subject to Nuclear Regulatory Commission requirements regarding design and quality criteria, including but not limited to 10 CFR Part 50.~~, Appendix A;~~

~~(d) Airport hydrant fuel distribution systems; and~~

~~(e) UST systems with field-constructed tanks.~~

(c~~b~~) Part N does not apply to state or federal government entities whose debts and liabilities are the debts and liabilities of a state or the United States.

Section 5. Definitions. The following definitions supplement those found in the Environmental Quality Act W.S. 35-11-103~~, the "Environmental Quality Act,~~ and W.S. 35-11-1415, ~~the "Storage Tank Act of 2007.~~ and federal regulations 40 CFR Part 280.12.

(a) "A4A" means Airlines for America, 1275 Pennsylvania Avenue, NW, Suite 1300, Washington, DC 20004; (202) 626-4000.

(~~a~~b) "Above~~—~~ground release" means any release to the ~~surface of the land~~ ground surface or to surface water. This includes, but is not limited to, releases from the above~~—~~ground portion of any regulated storage tank system and above~~—~~ground releases

associated with overfills and transfer operations as the regulated substance moves to or from any regulated storage tank system.

(c) "Airport hydrant fuel distribution system" (also called airport hydrant system) means a UST system that 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.

(~~b~~d) "ALLD" means an automatic line leak detector. This is a device that either restricts the flow through a line or sounds an audible or visible alarm if there is a leak in the connected piping. ~~has a leak in it.~~ ALLDs may include mechanical line leak detectors, electronic line leak detectors, or sump sensors.

~~(c) "ANSI" means the American National Standards Institute, 25 West 43rd Street, Fourth Floor, New York, NY 10036, telephone: (212) 642-4900.~~

(~~h~~e) "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 a storage tank.

(~~d~~f) "API" means the American Petroleum Institute, 1220 L Street NW, Washington, DC 20005;~~, telephone:~~ (202) 682-8000.

(~~e~~g) "AST" means an above~~—~~ground storage tank as defined by W.S. 35-11-1415~~(a)(xi)~~ ~~which~~ that is used by a fuel dealer to dispense gasoline or diesel to the public.

(~~f~~h) "AST ~~S~~system" means ~~the~~ an above~~—~~ground storage tank and all connected piping.

(~~g~~i) "ASTM" means the American Society for Testing and Materials, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959; (610) 832-~~9585~~9500.~~,(610) 832-9555 (FAX).~~

(~~i~~j) "Below ground release" means any release to the subsurface of the land and to groundwater. This includes, but is not limited to, releases from the below ground portions of a storage tank system and below ground releases associated with

overfills and transfer operations as the regulated substance moves to or from a storage tank.

(~~j~~k) “Biodiesel” means a fuel composed of mono-alkyl esters of long fatty chain acids derived from vegetable oils or animal fats, meeting the requirements of ASTM ~~s~~Specification D6751 as reference in Section 2. “Biodiesel” is interchangeable with ~~D~~diesel for all purposes of this ~~c~~Chapter.

(l) “Biofuel blend” means any regulated substance containing greater than 10 percent ethanol or greater than 20 percent biodiesel.

(~~k~~m) “CAP” means a “corrective action plan” designed to restore a site contaminated by regulated substances from a storage tank release to a condition ~~which~~ that is protective of the public health and safety and consistent with published standards found in this ~~c~~Chapter.

(n) "CERCLA" means the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended.

(o) “CFR” means Code of Federal Regulations, as revised and published on the dates provided in Section 2, and not including any later amendments or editions. Copies of the CFR can be purchased at cost from the publisher: the U.S. Government Printing Office, 732 N. Capitol St., NW, Washington, DC 20401, or viewed on the Government Printing Office website.

(p) “Class A Operator” means the individual who has primary responsibility to operate and maintain the tank system in accordance with applicable requirements established by the department. The Class A Operator typically manages resources and personnel, such as establishing work assignments, to achieve and maintain compliance with regulatory requirements. The Class A Operator shall obtain a Class A Operator’s license from the department in accordance with requirements established by the department.

(q) “Class B Operator” means the individual who has day-to-day responsibility for implementing applicable regulatory requirements. The Class B Operator typically implements in-field aspects of operation, maintenance, and associated recordkeeping for the tank system. The Class B Operator shall obtain a Class B Operator’s license from the department in accordance with requirements established by the department.

(r) “Class C Operator” means the individual responsible for initially addressing emergencies presented by a spill or release from a tank system. The Class C Operator typically controls or monitors the dispensing or sale of regulated substances, e.g., gas station attendants. The Class C Operator shall be trained by the Class A or B Operator for the facility in accordance with requirements established by the department.

(~~o~~s) "Compatible" means the ability of two ~~(2)~~ 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 storage tank system.

(~~p~~t) "Connected piping" means all ~~underground~~ piping including valves, elbows, joints, unions, flanges, and flexible connectors attached to a storage tank system through which regulated substances flow and which routinely contains the regulated substance. The piping that joins two ~~(2)~~ storage tank systems ~~should~~ shall be allocated equally between them for purposes of determining how much piping is connected to any individual storage tank system.

(u) “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-wall or secondarily contained and located at the top of the 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).

(~~q~~v) "Contaminated ~~S~~site" means a site where ~~at which~~ release(s) from storage tank systems have resulted in concentrations of regulated substances in environmental media ~~which~~ that exceed criteria for the protection of human health or the environment.

(~~r~~w) "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 shall be accredited or certified as being qualified by the NACE 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.

(x) “Corrosion protection” is a technique to prevent corrosion of a metal surface. Corrosion protection may be provided by sacrificial/galvanic anode cathodic protection systems, impressed current cathodic protection systems, isolation from ground contact, or dielectric materials.

(~~l~~y) “CP” means cathodic protection, which is a technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell. CP may be provided by ~~either~~ sacrificial/galvanic anodes or impressed current.

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

~~(s) "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 underground storage system from each other (e.g., tank from piping).~~

(~~t~~aa) "Drinking ~~w~~Water ~~e~~Equivalent ~~l~~Level or DWEL” means the maximum concentration of a contaminant established by the Wyoming Department of Environmental Quality, ~~Water Quality Division,~~ pursuant to this ~~c~~Chapter or Chapter 8, Water Quality Rules and Regulations, Quality Standards for Wyoming Groundwaters, for which no known or anticipated adverse effects on human health will occur.

(~~v~~bb) "Emergency" means a situation where replacement or retrofit of ancillary equipment to an existing storage tank system because of a sudden release or existing ancillary equipment failure is essential to continued operation of any facility, and the owner and/or operator can easily and quickly replace or retrofit the equipment to remain in operation.

(~~u~~cc) "Ethanol" means an alcohol derived from the fermentation of sugar, grain, or other biomass and used as fuel for internal combustion engines. Ethanol is usually denatured using gasoline, petroleum condensate, or some other petroleum product prior to being marketed for fuel. For purposes of this ~~c~~Chapter, "~~E~~ethanol" will be treated interchangeably with "gasoline."

~~(w) "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.~~

(dd) "Fiberglass Tank and Pipe Institute," 14323 Heatherfield, Houston, TX 77079-7407; (281) 568-4100.

(ee) "Field-constructed tank" means a tank constructed in the field (i.e., constructed at the site of use). For example, a tank constructed of concrete that is poured in the field, or a steel or fiberglass tank primarily fabricated in the field.

(ff) "Financial responsibility" terms are as defined in 40 CFR 280.92.

~~(x) "Free product" means a regulated substance that is present as a nonaqueous phase liquid (e.g., liquid not dissolved in water).~~

(~~y~~gg) "Hazardous substance UST system" means an UST system that contains a hazardous substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 ~~listed in Appendix A of this chapter,~~ (but not including any substance regulated as a hazardous waste under Subtitle C of the Resource ~~c~~Conservation and Recovery Act of 1984) or any mixture of such substances and petroleum, and which is not a petroleum UST system.

(~~z~~hh) "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.

(~~aa~~ii) "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, or other similar devices.

(jj) “Implementing agency” means Wyoming Department of Environmental Quality’s Storage Tank Program pursuant to the memorandum of agreement with EPA dated August 3, 1989.

(~~bb~~kk) “Licensed ~~O~~operator” means a person ~~human being~~, employed by the facility owner and/or operator ~~“Operator,”~~ who is in responsible charge of the storage tanks at one or more locations. “Licensed ~~O~~operator” refers to the holder of any of the licenses referred to in Section 46 of this ~~c~~Chapter.

(~~cc~~ll) "Maintenance" means the normal operational upkeep to prevent a storage tank system from releasing a regulated substance.

(~~dd~~mm) "Maximum ~~c~~Contaminant ~~l~~Level or MCL" means the maximum allowed concentration of a contaminant established by the U.S. Environmental Protection Agency under the Safe Drinking Water Act and published in 40 CFR Part 141.

(~~ee~~nn) “Minimum Site Assessment~~”~~ or ~~“~~MSA” means a limited subsurface investigation performed at a storage tank facility to determine ~~whether~~ if a regulated substance has been released from a storage tank system(s) ~~which~~ and has caused, or is causing, soil and/or groundwater contamination that exceeds applicable standards.

(~~ff~~oo) "NACE" means the National Association of Corrosion Engineers, ~~1440 South Creek Drive, P.O. Box 201009,~~ 15835 Park Ten Place, Houston, TX 77084; ~~77216-1009 telephone~~ (281) 228-6200~~, FAX (281) 228-6300~~.

(pp) “National Leak Prevention Association,” 75-4 Main Street, Suite 300, Plymouth, NH 03264; (815)301-2785.

(~~gg~~ qq) "NFPA" means the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269;~~,~~ ~~telephone:~~ (800) 344-3555.

(~~qq~~rr) “Operating facility” means a gas station actively selling fuel to the public, a fleet fueling facility used to actively fuel fleet vehicles, or a facility where emergency power generators are being used. “Operating facility” does not include any other type of facility, such as a car wash or other business

that does not routinely sell fuel to the public, or is not routinely used for fleet fueling, or is not routinely used for emergency power generation. A facility that has not been used to sell fuel to the public, or fuel fleet vehicles, or power emergency generators for a period of 12 months or more is not considered an “operating facility.”

(~~hh~~ss) "Operational life" means the period beginning when installation of the storage tank system has commenced until the time the storage tank system is properly closed under Part G.

(~~ii~~tt) "Overfill release" means a release that occurs when a storage tank system is filled beyond its capacity resulting in a discharge of the regulated substance to the environment.

(~~jj~~uu) "PEI” means the Petroleum Equipment Institute, P.O. Box 2380, Tulsa, OK 74101~~;, telephone:~~ (918) 494-9696.

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

(vv) “Regulated substance” means any substance defined in Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 (but not including any substance regulated as a hazardous waste under Subtitle C). Further, petroleum, including crude oil or any fraction thereof that is liquid at standard conditions of temperature and pressure (60 degrees F and 14.7 psi absolute) is a regulated substance. 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.

(~~ll~~ww) "RCRA" means the Resource Conservation and Recovery Act of 1984, as amended.

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

(yy) “Replaced” means:

(A) Tank replacement: to remove a tank and install another tank.

(B) Piping replacement: For tanks with multiple piping runs, this definition applies independently to each piping run. Piping replacement means to remove 50 percent or more of piping and install other piping, excluding connectors, connected to a single tank except: 1) piping connected to field-constructed underground storage tank systems with a capacity exceeding 50,000 gallons or piping that is used for an airport hydrant system, or 2) if existing single-wall underground piping connected to a storage tank system fails due to corrosion or fails and has been recalled by the manufacturer, the entire run of single-wall piping shall be replaced with double-wall piping with interstitial monitoring regardless of the length of piping requiring repair.

(~~oo~~zz) "Statistical Inventory Reconciliation~~"~~ or ~~"~~SIR" means a method using statistics ~~as well as~~ and simple inventory reconciliation to determine if a tank system is leaking. SIR providers ~~must~~ shall use a method ~~which~~ that has been approved in writing for use in the UST program by the U.S. Environmental Protection Agency.

(~~nn~~aaa) "STI" means the Steel Tank Institute, ~~570 Oakwood Road,~~ 944 Donata Court, Lake Zurich, IL 60047~~;~~, ~~telephone:~~ (847) 438-8265.

(~~pp~~bbb) "Storage ~~T~~tank" means either a regulated above~~-~~ground storage tank or an underground storage tank.

(~~qq~~ccc) "Substantial modification" means the addition or retrofit ~~(not routine maintenance)~~ of any fundamental portion of a storage tank system ~~which~~ to improve or upgrade the system that would affect the daily operation of the ~~storage tank~~ system~~,~~. Fundamental portions of the system include, ~~including,~~ but are not limited to, CP, internal or external piping system(s), liners, leak detection equipment, ~~spill and overfill controls,~~ manholes ~~installation~~, etc.~~, to improve or upgrade the storage tank system.~~ Substantial modifications also include the addition of canopies, new electrical conduits, and other items ~~which~~ that may not be directly related to the storage tank system, but where the construction could adversely affect the storage tank system. Changing an existing tank system for biofuel blend or any other regulated product storage is a substantial modification. All

substantial modifications require inspection and approval by the department prior to operation.

(ddd) “Training program” means the licensing program established by the department to test and/or evaluate the knowledge of a Class A, Class B, or Class C Operator regarding requirements for tank systems as established in Part L of this Chapter.

(~~rr~~eee) "Upgrade" means the addition or retrofit of ~~some systems~~ a portion of a tank system (such as CP, lining, spill and overfill controls, ~~or~~ secondary containment, etc.) ~~systems,~~ to improve the ability of a storage tank system to prevent the release of a regulated substance.

(~~uu~~fff) "UL” means the Underwriters Laboratories, Inc., 333 Pfingsten Road, Northbrook, IL 60062;~~,~~ ~~telephone:~~ (631) 271-6200.

(ggg) “UL of Canada” means Underwriters Laboratories of Canada, 7 Underwriters Road, Toronto, ON M1R 3A9, Canada; (866) 937-3852.

(hhh) “U.S. Department of Defense,” 1000 Defense Pentagon, Washington, D.C. 20301-1000.

(~~ss~~iii) "UST” means underground storage tank.

(~~tt~~jjj) "UST system" means an underground storage tank, connected underground piping, underground ancillary equipment, and a containment system, if any. A UST system includes multiple tanks connected with common piping (e.g., manifold systems or siphon systems).

(~~tt~~kkk) "Wastewater treatment tank" means a tank that is designed to receive and treat an influent wastewater through physical, chemical, or biological methods.

PART B

~~STORAGE TANK SYSTEMS:~~ TECHNICAL SPECIFICATIONS

Section 6. Design and Construction Standards for UST Systems. 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, all owners and/or operators of UST systems shall meet the ~~following~~ requirements in this Section. In addition, all tanks and piping installed or replaced after December 1, 2005, shall be secondarily contained and use interstitial monitoring in accordance with Part D Section 16(f). Secondary containment shall be able to contain regulated substances leaked from the primary containment until they are detected and removed and prevent the release of regulated substances to the environment at any time during the operational life of the tank system. Where the piping is considered to be replaced, the entire piping run shall be secondarily contained.

(a) *Tanks.* ~~Each~~ tTanks shall be properly designed, constructed, and installed~~, and any~~ uUnderground components that routinely contain~~s~~ regulated substances shall be protected from corrosion~~,~~ in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as specified below:

(i) Fiberglass-~~R~~reinforced ~~P~~plastic tanks shall be manufactured and installed in accordance with ~~one or more of the following industry standards or practices:(A)~~ UL Standard 1316~~,~~ or UL of Canada S615, both as referenced in Section 2. ~~"Standard for Glass-Fiber-Reinforced Plastic underground storage tanks for Petroleum Products"; or~~

~~(B) ASTM Standard D 4021-1992, "Standard Specification for Glass-Fiber-Reinforced Polyester underground storage tanks."~~

(ii) Cathodically ~~P~~protected ~~S~~steel USTs shall be manufactured and installed to meet the following requirements:

(A) The outside surface of all steel tanks installed after the date of these regulations shall be coated with a suitable dielectric material;

(B) Field-installed CP systems shall be designed by a corrosion expert;

(C) Impressed current CP systems shall be designed to allow determination of current operating status as required in Section 11, including a voltage meter, an amperage meter, and an hour meter showing the hours that the rectifier actually operated; and

(D) CP systems shall be operated and maintained in accordance with Section 11. Once installed, CP systems shall not be removed as long ~~at~~ as the steel UST system exists.

(E) In addition to the above requirements, all cathodically protected steel USTs shall be manufactured and installed in accordance with one or more of the following industry standards or practices:

(I) ~~STI, "Specification for STI-P3 System of External Corrosion Protection of Underground Storage Tanks";~~STI-P3® Specification and Manual for External Corrosion Protection of Underground Steel Storage Tanks, as referenced in Section 2; or

(II) UL Standard 1746, as referenced in Section 2 ~~"Corrosion Protection Systems for underground storage tanks"~~; or

(III) UL of Canada S603, S603.1, and S631, all three as referenced in Section 2; or

(IV~~II~~) NACE Standard SP0285 ~~RP0285-2002, "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems";~~ and UL Standard 58, both as referenced in Section 2; or~~"Standard for Steel Underground Tanks for Flammable and Combustible Liquids."~~

(~~I~~V) STI Standard F841, as referenced in Section 2.

(iii) ~~Steel-Fiberglass-Reinforced-Plastic Composite t~~Tanks constructed of steel and clad or jacketed with a non-corrodible material shall be manufactured and installed in accordance with one or more of the following industry standards or practices:

(A) UL Standard 1746, as referenced in Section 2; ~~"Corrosion Protection Systems for Underground Storage Tanks";~~ or

(B) STI ~~Association for Composite Tanks~~ ACT-100-U® Specification F894, as referenced in Section 2; or ~~"Specification for the Fabrication of FRP Clad Underground Storage Tanks".~~

(C) STI ACT-100-U® Specification F961, as referenced in Section 2; or

(D) STI Specification F922, as referenced in Section 2.

(iv) ~~Interior lining:~~ Owners and/or operators may continue to operate tanks upgraded with an internal lining as long as CP is in place that meets all requirements of this Chapter. ~~without added CP if:~~

~~(A) Within ten (10) years after lining, and every five (5) years thereafter, the lined tank is internally inspected and found to be structurally sound with the lining still performing in accordance with original design specifications. This requires that the tank be entered and cleaned out to allow an internal inspection; and~~

~~(B) The lining was installed in accordance with the requirements of API Publication 1631, "Recommended Practice for the Interior Lining of Existing Underground Storage Tanks", or~~

~~(C) The lining was installed in accordance with the requirements of the National Leak Prevention Association Standard 631, "Spill Prevention, Minimum 10 Year Life Extension of Existing Steel Underground Tanks by Lining Without the Addition of CP".~~

(v) New steel tanks shall not be installed with a liner without the addition of CP. No existing steel tank with a liner and added CP shall be modified to remove the CP.

(vi) After the effective date of these regulations, no UST may be installed for any purpose regulated ~~by~~ under this Chapter ~~program~~ with any penetration into the UST except in the top.

(vii) All USTs installed ~~in Wyoming~~ after the effective date of these regulations shall be anchored using deadmen to prevent flotation. No tank shall be installed without

providing for the maximum possible buoyancy force assuming that the tank is completely under the local groundwater table. No tank shall be installed using a concrete slab above the tank as the primary method of resisting buoyancy forces.

(b) *Piping.* Piping that routinely contains regulated substances and is in contact with the ground shall be properly designed, constructed, installed, and protected from corrosion in accordance with the following applicable industry standards or practices:

(i) ~~Fiberglass-Reinforced Plastic~~ ~~p~~Piping constructed of a non-corrodible material shall be manufactured and installed in accordance with ~~one or more of the following industry standards or practices:~~

~~(A)~~ UL ~~Subject~~ Standard 971, or UL of Canada S660, both as referenced in Section 2. ~~"UL Listed Non-Metal Pipes"; or~~

~~(B) UL Standard 567, "Pipe Connectors for Flammable and Combustible and LP Gas."~~

(ii) Steel piping shall be cathodically protected in the following manner:

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

(B) Field-installed CP systems shall be designed by a corrosion expert;

(C) Impressed current CP systems shall be designed to allow determination of current operating status as required in Section 11; and

(D) CP systems shall be operated and maintained in accordance with Section 11.

(E) In addition to the above, cathodically protected steel pipe shall be manufactured and installed in accordance with one or more of the following industry standards or practices:

~~(I) NFPA Standard 30,"Flammable and Combustible Liquids Code";~~

~~(II) API Publication 1615, "Installation of Underground Petroleum Storage Systems";~~

~~(III) API Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems"; or~~

(I) UL Subject 971A, as referenced in Section 2;

(II) STI Recommended Practice R892, as referenced in Section 2;

(III~~IV~~) NACE International Standard Practice SP~~RP~~0169~~-2002~~, as referenced in Section 2; ~~"Control of External Corrosion of Submerged Metallic Piping Systems";~~ or

(IV) NACE International Standard Practice SP0285, as referenced in Section 2.

(iii) Other ~~P~~piping systems will be allowed if they are determined by the department, pursuant to Section 33 ~~of this chapter~~, to be designed to prevent the release of any regulated substance in a manner that is no less protective than the requirements in Section 6(b).

(c) *Spill and ~~o~~Overfill ~~p~~Prevention ~~e~~Equipment*.

(i) Except as provided in Sections 6(c)(ii) and 6(c)(iii), to prevent spilling and overfilling associated with regulated substance transfer to the UST system, owners and/or operators shall use the following spill and overfill prevention equipment:

(A) Spill prevention equipment that will prevent release of regulated substances 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 percent (~~95%~~)~~ full; or

(II) Alert the transfer operator when the tank is no more than ~~ninety percent (~~90%~~)~~ full by restricting the flow into the tank or triggering a high-level alarm. The high-level alarm shall be audible and visible to the transfer operator; or

(III) Restrict flow 30 minutes prior to overfilling, alert the transfer operator with a high-level alarm (audible and visible to the transfer operator) 1 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.

(ii) Owners and/or ~~O~~operators are not required to use the spill and overfill prevention equipment specified in Section 6(c)(i) if the UST system is filled by transfers of no more than ~~twenty-five (~~25~~)~~ gallons at one time.

(iii) Flow restrictors (ball valves) used in vent lines may not be used to comply with Section 6(c)(i)(B) when overfill prevention is installed or replaced after April 11, 2016. Flow restrictors may continue to be used for reasons other than meeting the overfill prevention requirement so long as the flow restrictor does not interfere with the operation of the overfill prevention equipment being used.

(iv) Spill and overfill prevention equipment shall be periodically tested or inspected in accordance with Section 10(d).

(d) *Installation*. ~~All tanks and piping~~ The tank system shall be properly installed in accordance with one of the following industry standards or practices (as long as the standard or practice does not conflict with the manufacturer's instructions and recommendations) and in accordance with the manufacturer's instructions and recommendations:

(i) API Publication 1615, as referenced in Section 2; or ~~"Installation of Underground Petroleum Storage Systems"; or~~

(ii) PEI RP100~~Publication RP100~~, as referenced in Section 2; or ~~"Recommended Practices for Installation for Underground Liquid Storage Systems".~~

~~(iii) ANSI Standard B31.3, "Petroleum Refinery Piping," and ANSI Standard B31.4 "Liquid Petroleum Transportation~~

~~Piping System."~~

(iii) NFPA Standard 30 and Standard 30A, both as referenced in Section 2.

(e) ~~*Certification of*~~ *Installation* *Certification*. No storage tank system shall be operated until the department determines the installation or substantial modification meets the applicable standards of this ~~p~~Part. The department shall not issue any such determination until all construction on the site of the storage tank system is complete. Owners and/or operators shall:

(i) Notify the department by telephone or in writing at least ~~thirty (~~30~~)~~ days prior to the installation, repair or substantial modification of any storage tank system. Installations, repairs, or substantial modifications shall be scheduled at mutually acceptable times so ~~that~~ the department can ensure a representative is on site at various phases of installation or substantial modification. Inspections shall be completed within ~~ten (~~10~~)~~ days of the date ~~when~~ the department is notified that the installation, repair or substantial modification is complete; and

(ii) Pay the department a fee for each storage tank system or multiple storage tank systems installed, repaired or substantially modified at the same time and at the same site pursuant to W.S. 35-11-1420(c). The department will invoice the owner and/or operator upon completion of the final installation, repair or substantial modification inspection. The owner and/or operator shall remit payment to the department within ~~thirty (~~30~~)~~ days of receipt of the department's invoice; and

(iii) Ensure that the installation, repair, or substantial modification of all USTs meets the performance standards of this ~~part~~ Chapter; and

(iv) Obtain a certification from the licensed installer~~, or person modifying the UST,~~ certifying that the tank system was installed or modified to meet the requirements of this Chapter~~part~~. Such certification shall be provided on the UST notification form required under Section 9; and

(v) In the case of an emergency where the owner and/or operator cannot comply with the notification requirement of Section 6(e)(i), notify the department by telephone as soon as the emergency is found. Before proceeding with any substantial

modification or installation:

(A) The department shall determine ~~whether~~ if an inspection can be made within the owner and/or operator's work schedule; ~~of work;~~ or

(B) If the department cannot make the inspection, the owner and/or operator shall provide by mail, the specifications of materials and industry standards or practices used to accomplish the installation or substantial modification and documentation of any tests required within ~~five (~~5~~)~~ days of completion.

(f) *Compatibility*. In accordance with Section 12, owners and/or operators shall demonstrate that all components of a new UST system are compatible with the substance to be stored in the UST system.

(g) *Dispenser Systems*. Any new dispenser system installed after April 11, 2016, shall be equipped with under-dispenser containment.

(i) A dispenser system is considered new when both the dispenser and the equipment needed to connect the dispenser to the storage tank system are installed. The equipment necessary to connect the dispenser to the 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. Sensors are not required for monitoring under-dispenser containment. However, sensors may need to be added to meet the periodic monitoring requirement for sumps that cannot be visually inspected or to meet the piping interstitial monitoring requirement.

(ii) Under-dispenser containment shall be liquid-tight on its sides, bottom, and at all penetrations. Under-dispenser containment shall allow for visual inspection and access to the components in the containment system or be periodically monitored for leaks from the dispenser system.

(h) Owners and/or operators shall install a UST system listed in Section 4(b)(i), (iii), or (iv) storing regulated substances (whether single- or double-wall construction) that meets the following:

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

(ii) 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

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

Section 7. Substandard USTs. UST systems ~~which~~ that do not meet the standards of Section 6 shall not be placed back into service if they have been temporarily closed ~~out of use~~ for more than ~~one~~ 1 year. Substandard USTs shall be permanently closed or removed from the ground in accordance with Part G ~~of this chapter~~. A tank that has been permanently closed or that has gone through a change in service shall not be brought back into service unless the tank meets the requirements in Section 6 and the double-wall requirements in Section 14(h). This Section does not apply to previously deferred UST systems described in Part M.

Section 8. Repairs Allowed.

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

(i) Repairs to UST systems shall be properly conducted in accordance with one or more of the following industry standards or practices:

(A) NFPA Standard 30, as referenced in Section 2; ~~"Flammable and Combustible Liquids Code";~~

(B) API ~~Publication~~ Recommended Practice 2200, as referenced in Section 2; ~~"Repairing Crude Oil, Liquified Gas, and Product Pipelines"; or~~

(C) API Standard ~~Publication~~ 1631, as referenced in Section 2; ~~"Recommended Practice for the Interior Lining of Existing underground storage tanks;"~~

(D) NFPA Standard 326, as referenced in Section

2;

(E) National Leak Prevention Association Standard 631, as referenced in Section 2;

(F) STI Recommended Practice R972, as referenced in Section 2;

(G) NACE International Standard Practice SP0285, as referenced in Section 2; or

(H) Fiberglass Tank and Pipe Institute Recommended Practice T-95-02, as referenced in Section 2.

(ii) Repairs to above-ground storage tank systems shall be properly conducted in accordance with one or more of the following industry standards or practices:

(A) NFPA Standard 30, as referenced in Section 2; ~~"Flammable and Combustible Liquids Code";~~

(B) API Standard 620, as referenced in Section 2; ~~"Design and Construction of Large, Welded Low-Pressure Storage Tanks";~~

(C) API Standard 650, as referenced in Section 2; ~~"Welded Steel Tank for Oil Storage";~~

(D) API Standard 653, as referenced in Section 2; ~~"Tank Inspection, Repair, Alteration, and Reconstruction";~~ or

(E) PEI ~~Recommended Practice~~ RP200, as referenced in Section 2. ~~200-2003, "Recommended Practices of Installation of Aboveground Storage Systems for Motor Vehicle Fueling".~~

(iii) Repairs to fiberglass-reinforced plastic USTs 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.

(iv) Metal ~~P~~pipe sections and fittings that have released regulated substances as a result of corrosion or other damage shall be replaced. Non-corrodible pipes and fittings may be repaired in accordance with the manufacturer's specifications.

(v) Repairs to secondary containment areas of tanks

and piping used for interstitial monitoring and to containment sumps used for interstitial monitoring of piping shall have the secondary containment tested for tightness according to the manufacturer's instructions or a code of practice developed by a nationally recognized association or independent testing laboratory within 30 days following the date of completion of the repair. All other repairs to ~~Repaired~~ storage tank systems shall be tightness tested in accordance with Sections 14(~~f~~g) and 16(b) within ~~thirty (~~30~~)~~ days following the date of the completion of the repair unless:

(A) The repaired storage tank system is internally inspected in accordance with a code of practice listed in this ~~s~~Section; or

(B) The repaired portion of any UST system is monitored monthly for releases in accordance with a method specified in Section 16(~~b~~c) through (j~~k~~); or

(C) Another test method is used that is determined by the department, pursuant to Section 33, to be no less protective of human health and the environment than those listed above.

(D) The following codes of practice may be used to comply with paragraph (a)(v) of this Section:

(I) STI Recommended Practice R012, as referenced in Section 2; or

(II) Fiberglass Tank and Pipe Institute Protocol Recommended Practice 2007-2, as referenced in Section 2.

(III) PEI RP1200, as referenced in Section 2.

(v~~i~~) ~~s~~Storage tank system owners and/or operators shall maintain records of each repair ~~for the remaining operating life of~~ until the UST system is permanently closed or undergoes a change-in-service pursuant to Part G of this Chapter. ~~that demonstrate compliance with the requirements of this section.~~

(b) All owners and/or operators of repaired UST systems shall ensure the modifications meet the performance standards for design and repair~~,~~ as set forth in Section 6.

(c) Costs associated with remediation of any release from a storage tank system during tank installation or repair work by a tank installer, tester, owner and/or operator, etc., are not eligible for the state's corrective action account funds.

(d) Any time steel connected piping is repaired or modified by replacing the pipe with a non-corrodible pipe, all of the connected piping on that run shall be replaced. Any time steel piping ~~which~~ that is not cathodically protected is repaired or replaced, the entire run of pipe shall be replaced with a non-corrodible pipe.

(e) Whenever the integrity of the primary or secondary wall of a double-wall tank has been compromised, repairs shall be made immediately in accordance with the tank manufacturer's recommendations. If the tank cannot be repaired, it shall be permanently closed in accordance with Section 31.

(f) Within 30 days following any repair to spill or overfill prevention equipment, the repaired spill or overfill prevention equipment shall be tested or inspected, as appropriate, in accordance with Section 10(d) to ensure it is operating properly.

(g) Testing required under this Section shall be conducted by a licensed installer as defined in Section 45 or a licensed tester as defined in Section 48.

PART C

~~STORAGE TANK SYSTEMS:~~ GENERAL OPERATING REQUIREMENTS

Section 9. Notification Requirements.

(a) *New ~~UST~~ Tank Systems.* Any owner and/or operator who brings ~~an underground~~ a storage tank system regulated under this Chapter into use ~~after May 8, 1986,~~ shall, within ~~thirty (30)~~ days of bringing such tank into use, submit~~, on the form prescribed by the department,~~ a notice of the existence of such tank system to the department. The notice shall be submitted on the form prescribed by the department.

(b) *Existing Storage Tank Systems.* Owners and/or operators of an UST~~(s)~~ that has been used to store regulated substances since January 1, 1974, and that was in the ground as of May 8, 1986, shall immediately submit to the department, on the form prescribed by the department, a notice of the existence of such tank(s). ~~to the department.~~ Owners and/or operators of any AST that has been used to sell fuel to the public since July 1, 1994, shall immediately submit to the department, on the form prescribed by the department, a notice of the existence of such tank(s). ~~to the department.~~ All storage tanks located at the same facility shall be registered under the same facility identification number.

(c) *Fees*. Owners and/or operators of storage tank systems shall pay the annual fees specified by W.S. 35-11-1425 no later than January 1 of each year or ~~thirty (30)~~ days after the first invoice, whichever is the later date. Fees are not prorated~~,~~; the fee is assessed based on a calendar year. Fees begin on the date when the tank is first filled with a regulated substance and end on the date when the tank is placed permanently out of service or converted to a non-regulated use under these regulations.

(d) *UST Certification.* All owners and/or operators of new UST systems shall certify on the notification form conformance with the following requirements:

(i) Installation of tanks and piping under Section 6(d);

(ii) CP of steel tanks and piping under Section 6(a) and (b);

(iii) Financial responsibility under Part N; ~~Chapter 19, Water Quality Rules and Regulations, UST Program Financial Responsibility~~;

(iv) Release detection under Sections 14 through 17; and

(v) Overfill and spill prevention under Section 6(c).

(e) *AST Certification.* All owners and/or operators of new AST systems shall certify on the notification form conformance with the requirements in Part I.

(~~e~~f) *Installer Certification.* All owners and/or operators of new UST systems shall ensure that the installer certifies on the notification form that the methods used to install the tanks and piping ~~complies~~ comply with the requirements in Section 6(d).

(~~f~~g) *Requirements for ~~s~~Sellers.* ~~After the effective date of these regulations, a~~Any person who sells a tank intended to be used as a regulated storage tank~~, and~~ or any person who transfers an existing storage tank system shall notify the purchaser of such tank of the owner's notification obligations in accordance with this ~~s~~Section. ~~After the effective date of these regulations, a~~Any person who sells a contaminated site shall notify the purchaser that the site is a contaminated site subject to requirements of this ~~c~~Chapter.

(~~g~~h) *Transfer of Control.* Prior to the transfer of control of a storage tank system to a different owner and/or operator, notification of the transfer shall be provided to the department pursuant to W.S. 35-11-1420(a). Upon selling a contaminated site subject to requirements of this Chapter, the seller shall notify the department of such sale. Such notifications shall be provided on a form developed and provided by the department. Notification shall be made within 30 days of the date the transfer becomes effective.

Section 10. Spill and Overfill Control.

(a) Owners and/or operators of storage tank systems shall ensure that releases due to spilling or overfilling do not occur. The owner and/or operator shall ensure that the volume available in the tank is greater than the volume of regulated substance to be transferred to the tank before the transfer is made. The

owner and/or operator shall also ~~insure~~ ensure that the transfer operation is monitored constantly to prevent overfilling and spilling. The transfer procedures described in NFPA Standard 385 or API Recommended Practice 1007, both as defined in Section 2, may be used to comply with this paragraph.

(b) Owners and/or operators shall report, investigate, and clean up any spills and overfills in accordance with Section 22.

(c) Surface spills that occur at a storage tank facility during the transfer of a regulated substance to the tank are required to be reported and cleaned up by any person owning or having controlled the regulated substance pursuant to Section 22(a) ~~of this Chapter,~~ and Chapter 4, Water Quality Rules and Regulations.

(d) *Periodic Testing of Spill Prevention Equipment and Containment Sumps Used for Interstitial Monitoring of Piping and Periodic Inspection of Overfill Prevention Equipment.*

(i) Owners and/or operators of tank systems with spill and overfill prevention equipment and containment sumps used for interstitial monitoring of piping shall meet the following requirements to ensure the equipment is operating properly and will prevent releases to the environment:

(A) Spill prevention equipment (such as spill buckets or other spill containment device) and containment sumps used for interstitial monitoring of piping shall prevent releases by meeting one of the following:

(I) The equipment is double-wall and the integrity of both walls is periodically monitored at a frequency not less than the frequency of the walkthrough inspections described in Section 13(d). Owners and/or operators shall begin meeting Section 10(d)(i)(A)(II) and conduct a test within 30 days of discontinuing periodic monitoring of this equipment; or

(II) The spill prevention equipment and containment sumps used for interstitial monitoring of piping are tested at least once every 3 years to ensure the equipment is liquid tight. If water is used, it may be reused for testing at other sites. However, when testing is complete, the water becomes a waste and must be evaluated to determine if it is a hazardous waste prior to proper disposal. Test water will be a hazardous waste if it exhibits any of the hazardous waste characteristics

described in 40 CFR 261.21-24. Testing shall be conducted by vacuum, pressure, or liquid methods in accordance with:

(1.) Requirements developed by the manufacturer (only if the manufacturer has developed such requirements); or

(2.) A code of practice developed by a nationally recognized association or independent testing laboratory; or

(3.) PEI RP1200 as referenced in Section 2; or

(4.) Requirements determined by the department to be no less protective of health and the environment than other testing methods listed in Section 10(d)(i)(A)(II).

(B) Overfill prevention equipment shall be inspected for functionality at least once every 3 years. At a minimum, the inspection shall ensure that overfill prevention equipment is set to activate at the correct level specified in Section 6(c) and will activate when regulated substance reaches that level. Inspections shall be conducted in accordance with one of the criteria in paragraph (d)(i)(A)(II) of this Section.

(ii) Owners and/or operators shall begin meeting these requirements as follows:

(A) For tank systems in use on or before October 13, 2015, the initial spill prevention equipment test, containment sump test and overfill prevention equipment inspection shall be conducted not later than October 13, 2018.

(B) For tank systems brought into use after October 13, 2015, these requirements apply at installation.

(iii) Owners and/or operators shall maintain records in accordance with Section 18 for spill prevention equipment, containment sumps used for interstitial monitoring of piping, and overfill prevention equipment as follows:

(A) All records of testing or inspection shall be maintained for 3 years; and

(B) For spill prevention equipment and

containment sumps used for interstitial monitoring of piping not tested every 3 years, documentation showing that the prevention equipment is double-wall and integrity of both walls is periodically monitored shall be maintained for as long as the equipment is periodically monitored.

(iv) Testing required under this Section shall be conducted by a licensed tester as defined in Section 48.

Section 11. Operation and Maintenance of ~~Corrosion~~ Cathodic Protection (CP) Systems. All owners and/or operators of ~~steel~~ metal storage tank systems with CP shall comply with the following requirements to ensure that releases due to corrosion are prevented until ~~for as long as~~ the storage tank system is permanently closed or undergoes a change-in-service pursuant to Part G: ~~used to store regulated substances:~~

(a) *Continuous Operation*. All CP systems shall 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. Once installed, CP systems shall not be removed, even if the tank has also been internally lined, as long as metal ~~steel~~ tanks or connected piping exist on that site. This does not prevent ~~preclude replacement of~~ replacing parts of the CP system ~~which~~ that have become defective.

(b) *Periodic Inspections.* All storage tank systems equipped with CP systems shall be inspected for proper operation by a qualified CP tester in accordance with the following requirements:

(i) All CP systems shall be tested within ~~six (6)~~ months of installation and at least once every ~~three (3)~~ years thereafter.

(ii) The criteria that are used to determine that CP is adequate shall be in accordance with: ~~the NACE Standard RP0285-2002, "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems."~~

(A) NACE International Test Method TM0101, as referenced in Section 2;

(B) NACE International Test Method TM0497, as referenced in Section 2;

(C) NACE International Standard Practice SP0285, as referenced in Section 2;

(D) NACE International Standard Practice SP0169, as referenced in Section 2; or

(E) STI Recommended Practice R051, as referenced in Section 2.

(iii) All CP systems shall be tested within ~~six~~ 6 months of any repair or substantial modification to the storage tank system, or any other installation on the facility requiring excavation, in accordance with NACE Standard SP0285~~RP0285-2002~~, as referenced in Section 2.

(c) *Impressed Current Systems.* Storage tank systems with impressed current CP systems shall also be inspected by the owner and/or operator every ~~sixty (~~60~~)~~ days to ensure the equipment is running properly. The owner and/or operator shall make a record of these inspections, including the date of the inspection, the voltage reading on the rectifier, the amperage reading on the rectifier, and the hour reading on a properly connected hour meter showing how long the system has operated since the last inspection. The owner and/or operator shall compare those readings to the readings determined to be correct during the last inspection required under paragraph (b) of this ~~s~~Section. Large changes in the voltage or amperage readings, or zero readings, shall be investigated by the owner and/or operator.

(d) *Records.* ~~For storage tank systems using CP, records of the operation of the~~ CP system operation records shall be maintained in accordance with Section 13(c) ~~,~~ to demonstrate compliance with the performance standards in this ~~s~~Section. These records shall provide the following:

(i) The results of testing from the last two ~~(2)~~ CP system inspections required in accordance with paragraph (b) of this ~~s~~Section; and (if applicable)

(ii) The results of the last three ~~(3)~~ CP system inspections required in accordance with paragraph (c) of this ~~s~~Section.

(e) *CP System Repairs.* In the event a CP system fails testing, the owner and/or operator shall have a CP expert

evaluate and design necessary repairs within 30 days of failure and have the repairs completed within 90 days of failure. All repairs shall be made in accordance with one or more of the following standards or practices:

(i) STI-P3® Specification and Manual for External Corrosion Protection of Underground Steel Storage Tanks, as referenced in Section 2; or

(ii) UL Standard 1746, as referenced in Section 2; or

(iii) NACE Standard SP0285, as referenced in Section 2.

(f) *Stake-Type Sacrificial Anodes.* Stake-type sacrificial anodes connected to piping flex connectors may be replaced by a licensed CP tester without the repairs being designed by a CP expert.

Section 12. Compatibility.

(a) Storage tank system~~(s)~~ shall be made of, or lined with, materials that are compatible with the regulated substance stored.

(b) Owners and/or operators shall notify the department at least 30 days prior to changing to a regulated substance containing greater than 10 percent ethanol or greater than 20 percent biodiesel.

(c) *Biofuel Blends.*

(i) Prior to storing a biofuel blend in an existing or new tank system, owners and/or operators shall demonstrate that all storage tank system components are compatible with the biofuel blend to be stored. Compatibility demonstration shall be made by one of the following:

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

(B) Equipment or component manufacturer certification that the tank system components are compatible for use with the biofuel blend to be stored. This certification shall be in writing, indicating an affirmative statement of

compatibility, including the biofuel blend range for which the component is compatible.

(ii) Compatibility Checklist. The storage tank owner and/or operator shall complete the compatibility checklist developed by the department. The completed checklist and compatibility demonstration for each component of the tank system shall be submitted to the department. The department will issue written authorization to store the biofuel blend after review and acceptance of the submittal.

(iii) Owners and/or operators shall maintain component compatibility documentation for as long as the tank system is used to store the regulated substance.

(iv) API Recommended Practice 1626, as referenced in Section 2, may be used to comply with this Section.

~~(b) Owners and/or operators storing alcohol blended gasoline shall use the following industry standards or practices to comply with this section:~~

~~(i) API Publication 1626, "Storing and Handling Ethanol and Gasoline-Ethanol Blends at Distribution Terminals and Service Stations"; and~~

~~(ii) API Publication 1627, "Storage and Handling of Gasoline-Methanol Blends at Distribution Terminals and Service Stations".~~

Section 13. Inspection and Right of Entry, Reporting, and Recordkeeping.

(a) *Inspection and Right of Entry*. Any authorized agent of the State of Wyoming has the right of entry for inspection, assessments, monitoring, and corrective actions in accordance with the provisions of W.S. 35-11-1422. Owners and/or operators shall cooperate fully with inspections, including providing access to all manholes, dispenser cabinets, CP rectifiers, and tank monitoring equipment. Compliance with this Section requires that owners and/or operators open manholes and other access points so department inspectors can see the condition of all equipment. If an owner and/or operator is unable to open the access points, requiring department personnel to open this equipment, any damages to any equipment or property shall be the responsibility of the facility owner and/or operator. Damages

include, but are not limited to, those resulting from misplacement of covers, lids, or dispenser cabinet doors.

(b) *Reporting*. Owners and/or operators of storage tank systems shall cooperate fully with inspections, monitoring, and testing conducted by the department;~~, as well as~~ and requests by the department for the following documents, notifications, ~~submission(s),~~ testing, and monitoring information:

(i) Notification for all storage tank systems (Section 9), which includes certification of installation for new storage tank systems; ~~(Section 6(e) for USTs and Part I for ASTs);~~

(ii) Notification when any person assumes ownership of a tank system (Section 9);

(iii) Notification for all substantial modifications (Section 6(e) for USTs and Section 35(q) for ASTs);

(iv) Notification prior to changing tank systems to certain regulated substances (Section 12);

(~~ii~~v) Reports of all releases including suspected releases (Section 19), spills and overfills (Section 22), and confirmed releases (Sections 23 through 25);

(v~~iii~~) ~~A n~~Notification before permanent closure, change of status, or change-in-service (Part G);

(~~i~~vii) Documentation required in Section 25 by ~~O~~owners and/or operators eligible for the state corrective action ~~program~~account; and/or ~~shall comply with the requirements contained in Section 25.~~

(viii) Documentation required in Section 24 by ~~O~~owners and/or operators not eligible for the state corrective action account. ~~program shall comply with the requirements contained in Section 24.~~

~~(vi) Owners and/or operators shall cooperate fully with inspections, including providing access to all manholes, dispenser cabinets, CP rectifiers, and tank monitoring equipment. Compliance with this section will require that owners and/or operators open manholes and other access points so that DEQ inspectors may see the condition of all equipment.~~

(c) *Recordkeeping*. Owners and/or operators shall maintain and submit to the department (when requested) the following: ~~information to the department:~~

(i) Documentation of ~~operation of~~ CP ~~S~~systems operation (Section 11);

(ii) Documentation of storage tank system repairs (Section 8);

(iii) Documentation of storage tank system compatibility (Section 12);

(iv) Documentation of compliance for spill and overfill prevention equipment and containment sumps used for interstitial monitoring of piping (Section 10);

(v) Documentation of periodic walkthrough inspections (Section 13);

(~~iii~~vi) Documentation of ~~C~~compliance with release detection requirements (~~Section 14 through 18~~ Part D for USTs and Sections 36 and 37 for ASTs); ~~and~~

(~~i~~vii) Results of the site investigation conducted at permanent closure and changes in service (Section 31)~~.~~; and

(viii) Documentation of Class C Operator training.

(d) *Monthly Inspections.* To properly operate and maintain tank systems, the Class A or B Operator or a licensed tank tester shall meet one of the following:

(i) Conduct a walkthrough inspection that, at a minimum, checks the following equipment every 30 days (except spill prevention equipment at tank systems receiving deliveries at intervals greater than every 30 days may be checked prior to each delivery):

(A) Spill prevention equipment. Visually check for damage, remove liquid or debris, check for and remove obstructions in the fill pipe, check the fill cap to ensure it is securely on the fill pipe; and for double-wall spill prevention equipment with interstitial monitoring, check for a leak in the interstitial area; and

(B) Release detection equipment. Check to ensure the release detection equipment is operating with no alarms or other unusual operating conditions present, and ensure records of release detection testing are reviewed and current; or

(ii) Conduct operation and maintenance walkthrough inspections according to PEI RP900, as referenced in Section 2.

(iii) Owners and/or operators who monitor their release detection system remotely may check the release detection equipment and records remotely every 30 days as long as the release detection system at the facility is determined to be in communication with the remote monitoring equipment.

(e) *Monthly Inspection Documentation.* The Class A or B Operator or licensed tank tester shall provide the facility owner and/or operator with a copy of each monthly inspection documentation and alert the owner and/or operator of any condition discovered during the monthly visual inspection that may require follow-up actions.

(f) *Monthly Inspection Records.* The owner and/or operator shall maintain a copy of the monthly inspection documentation and all attachments for the previous 12 months. Records shall include a list of each area checked, whether or not 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 30 days due to infrequent deliveries. The records shall be maintained on-site, off-site at a readily available location within the State of Wyoming, or electronically in accordance with Section 13(i).

(~~e~~g) *Operator's Annual Inspection*. Storage tank system owners and/or operators shall provide an annual inspection report ~~of inspection~~ to the department for the entire facility within 60 days of the inspection. ~~An~~ This annual inspection ~~is to~~ shall be conducted ~~either~~ by the owner, the operator, or a ~~qualified consultant~~ licensed tester within 1 year of the previous inspection. The inspector shall meet all ~~of the~~ qualifications ~~as~~ of a CP tester if he or she inspects a CP system. The results of the operator's annual inspection and all associated documentation shall be maintained by the facility for at least 3 years. Records shall include a list of each area checked and each component tested, whether each area checked and each component tested 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 30 days due to infrequent deliveries. This inspection shall:

(i) ~~t~~Test all ~~of the~~ CP systems on site ~~which~~ that are due for testing in accordance with Section 11.~~;~~

(ii) ~~p~~Provide ~~for~~ pressure tests of pressurized piping or U.S. ~~S~~suction piping in accordance with Section 14(g).~~;~~

(iii) ~~t~~Test all ~~A~~automatic ~~L~~line ~~L~~leak ~~D~~detectors as follows:

(A) ~~p~~Provide a simulated leak test for ~~M~~mechanical ~~L~~line ~~L~~leak ~~D~~detectors that ~~will~~ demonstrates ~~that~~ the leak detector meets the requirements of Section 14(g).

(B) Provide a simulated leak test for ~~E~~electronic ~~L~~line ~~L~~leak ~~D~~detectors ~~a simulated leak is required~~ that demonstrates ~~that~~ the leak detector meets the requirements of Section 14(g). An internal electrical test of the system is not sufficient to meet this requirement.

(C) Function-test sump sensors to demonstrate that they meet the requirements of Section 14(g) ~~W~~when sump sensors are used to meet the requirement for an ~~A~~automatic ~~L~~line ~~L~~leak ~~D~~detector.~~,~~ ~~they shall be configured to meet the requirements of Section 14(g)~~ ~~and~~ ~~t~~The annual inspection shall include a manual tripping of each sump sensor. ~~The automatic device used to monitor sump sensors shall be triggered by the manual tripping of the sensors, and a~~ A record shall be made showing the date when the test was done, the facility number, and recording ~~the fact~~ whether or not ~~that~~ the sensor operated as required. After the sump sensors have been function tested, they shall be placed in the sump at a location that allows the detection of 3 gallons of liquid if the sensor is being used as an automatic line leak detector. If the sensor is used solely for interstitial monitoring, the sensor shall be placed in accordance with Section 14(h)(v).

(iv) ~~d~~Document that all ~~A~~automatic ~~T~~tank ~~G~~gauges (ATGs), interstitial monitoring systems, vapor monitoring systems, or other automatic systems are properly calibrated and functioning. Test alarms, verify system configurations, and test battery backup. This documentation includes a check to determine

if probes are clean and are the proper ones for the regulated substance being stored.

(v) ~~p~~Provide ~~an annual summary for~~ copies of all inventory control calculations, statistical inventory reconciliation reports, automatic tank gauging test results, or results from other leak detection methods ~~which shows~~ that indicate compliance for each month of the year preceding the inspection. ~~year. Records of the operation of all leak detection systems for the past three (3) years are required to be kept.~~

(vi) ~~i~~Include a physical inspection of all sumps, manholes, dispensers, under-dispenser containment, and other openings ~~provided~~ on the storage tank system. Visually check for damage and leaks. Any leaks found shall be immediately eliminated. Any liquid or debris found in spill prevention equipment such as spill buckets, sumps, or under-dispenser containment shall be removed at the time of inspection. Check for leaks in the interstitial area of double-wall sumps with interstitial monitoring.

(vii) Inspect probes and sensors for residual buildup, ensure floats move freely, ensure shaft is not damaged, ensure cables are free of kinks and breaks, and test alarm operability and communication with controller.

(viii) Ensure proper communication between vacuum pumps, pressure gauges, sensors, and controller.

(ix) Include documentation of Class A or B Operator's monthly inspections.

(x) Check hand-held release detection equipment such as tank gauge sticks or groundwater bailers for operability and serviceability.

(xi) Be documented on forms approved by the department. The forms shall include the name(s) and license number(s) of the person(s) performing the inspection.

(h) *Results.* The results of the operator's annual inspection shall be reviewed by the licensed facility operator. The name of the reviewing operator and operator's license number shall be included on the inspection form.

(~~d~~i) *Availability and Records ~~m~~Maintenance ~~of records~~*.

Owners and/or operators of ~~UST~~ storage tank systems shall keep ~~the~~ required records: ~~required either:~~

(i) At the storage tank site and immediately available for inspection by the department; ~~or~~

(ii) At a readily available alternate site. Records shall ~~and~~ be provided to the department for inspection ~~to the department,~~ upon request. The readily available ~~alternative~~ alternate site shall be within the boundaries of the State of Wyoming. If records are ~~to be~~ kept at an alternate site, the department shall be notified in writing of the name, address and telephone number for ~~that~~ the alternate site; or ~~facility.~~

(iii) Electronically, but only if electronic records can be easily accessed at the facility during an inspection. Electronic records shall be accessed by the operator on a computer at the facility at the time of an inspection by the department. Due to size limitations, records accessed by cell phone do not meet the requirements of this Section.

(iv) Owners/operators may submit records electronically to the department prior to an inspection. Electronic records submitted to the department prior to an inspection must be received by the Storage Tank Program (STP) not less than 7 working days prior to the date of the inspection. It is the owner's/operator's responsibility to ensure the records were received by the STP. If records are not received by the STP at least 7 working days prior to the date of the inspection, the owner/operator shall ensure records are available on site at the time of the inspection using another method in this Section.

(v) In the case of permanent closure records, owners and/or operators may mail closure records to the department if they cannot be kept at the site or an alternate site as indicated above.

PART D

UST SYSTEMS: RELEASE DETECTION

Section 14. Requirements for All UST Systems.

(a) *Release Detection.* Owners and/or operators of UST systems shall provide a method, or combination of methods, of release detection that:

(i) Can detect a release from any portion of the tank and the connected piping that routinely contains a regulated substance;

(ii) Is installed~~,~~ and calibrated~~, operated, and maintained~~ in accordance with the manufacturer's instructions~~, including routine maintenance and service checks~~ showing that the leak detection equipment is fully operational and in proper calibration; ~~and~~

(iii) Beginning October 13, 2018, is operated and maintained and electronic and mechanical components are tested for proper operation in accordance with the manufacturer's instructions, PEI RP1200 as referenced in Section 2, or a method determined by the department to be no less protective of health and the environment than other testing methods in this Section; and

(~~ii~~iv) Meets the performance requirements in Sections 14, 15, 16, ~~or~~ 17, or Part M, as applicable, with any performance claims and their manner of determination described in writing by the equipment manufacturer or installer. Methods used shall be capable of detecting the leak rate or quantity specified for that method in Sections 14, 15, 16, ~~or~~ 17, or Part M with a probability of detection of 0.95 and a probability of false alarm of 0.05.

(b) *Release Reporting.* When a release detection method operated in accordance with the performance standards in Sections 14, 15, 16, ~~or~~ 17, or Part M indicates a release may have occurred, owners and/or operators shall notify the department in accordance with Part E.

(c) *Timing.* Owners and/or operators of ~~new or existing~~ UST systems shall comply with the release detection requirements of this ~~p~~Part immediately upon installation.

(d) *USTs ~~w~~Without ~~l~~Leak ~~d~~Detection.* Any owner and/or operator of an UST system that cannot apply a method of release detection that complies with the requirements of this ~~p~~Part shall complete the closure procedures contained in Part G. For previously deferred tank systems described in Parts A and M, this requirement applies on October 13, 2018.

(e) *Petroleum USTs with a Capacity of ~~less than~~ 1,000 ~~g~~Gallons or Less.* Owners and/or operators of USTs with a capacity of 1,000 gallons or less may use manual tank gauging as the sole leak detection method for the tank. Manual tank gauging shall be conducted weekly in accordance with Section 15(a).

(f) *Petroleum USTs with a ~~t~~Throughput of ~~l~~Less ~~t~~Than 15,000 ~~g~~Gallons per ~~m~~Month*. Notwithstanding any other provision of this ~~c~~Chapter, owners and/or operators of USTs with a throughput of less than 15,000 gallons per month may use inventory control as a monthly monitoring technique provided that:

(i) ~~t~~The inventory control balances within 150 gallons per month. In the event that a single month fails to balance within 150 gallons, the operator shall immediately submit that month's data to an outside vendor for Statistical Inventory Reconciliation;

(ii) ~~t~~The USTs are secured against theft in such a way that any theft is readily obvious; and

(iii) ~~a~~All ~~of the~~ requirements listed under Section 16(a) are met.

(g) *Piping*. Connected piping that routinely contains regulated substances shall be monitored for releases in a manner that meets one ~~(1)~~ of the following requirements:

(i) Pressurized piping systems shall:

(A) Be monitored in accordance with Section 14(g)(i)(B). ~~below.~~ Whenever pressure systems have multiple dispensers hooked up to dispense product through a single meter, the pressurized piping between the first dispenser and the slave dispenser ~~must~~ shall also be monitored and tested; and

(B) Be equipped with an automatic line leak detector. ~~in accordance with the following:~~ Automatic line leak

detector ~~M~~methods, including sump sensors ~~which~~ that alert the owner and/or operator to the presence of a leak by restricting or shutting off the flow of regulated substances through piping or triggering an audible or visual alarm~~,~~ 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 (~~1~~)~~ hour. If sump sensors are used as an automatic line leak detector, the sensor shall be placed in the sump such that it can detect 3 gallons of liquid in the sump regardless of the sump size or shape, and whether or not the sump is level. If sump sensors cannot detect 3 gallons of liquid, the sensors shall be relocated in the sump such that 3 gallons of liquid can be detected or another type of automatic line leak detector shall be installed. An annual test of the operation of the leak detector shall be conducted. Manufacturers are required to recommend procedures to be used for testing their ~~own~~ equipment, but all automatic line leak detectors shall be tested annually. No manufacturer shall recommend that its equipment not be tested nor interfere with the testing of its equipment in any way. In addition, all underground pressurized piping shall:

(~~1~~I) ~~have an annual line tightness test.~~ Be tightness tested annually. A periodic test of piping may be conducted only if it can detect a 0.1 gallon per hour (gph) leak rate at one and one-half ~~(1 1/2)~~ times the operating pressure;~~.~~ ~~Tests performed by automatic systems are specifically allowed in meeting this requirement;~~ or

(~~2~~II) ~~b~~Be ~~tested~~ monitored using any of the methods listed in Sections 16(d), (e), (f), (g), (h), or (~~j~~i). Methods not specifically named in these regulations shall be approved by the department prior to use ~~by the department,~~ pursuant to Section 33. ~~, and that~~ The request for approval ~~must~~ shall state that the method will detect a leak in lines.

(ii) A U.S. ~~S~~suction system is a system of underground piping ~~which~~ that conveys a regulated substance using suction and ~~which~~ has more than one check valve in the line. All U.S. ~~S~~suction systems shall:

(A) ~~h~~Have a line tightness test performed once every ~~three (~~3~~)~~ years. 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 ~~(1 1/2)~~ times the operating pressure; or

(B) ~~b~~Be ~~tested~~ monitored using any of the methods

listed in Section 16(d), (e), (f), (g), (h), or (ij). Methods not specifically named in these regulations shall be approved by the department prior to use ~~by the department,~~ pursuant to Section 33. ~~, and that~~ The request for approval ~~must~~ shall state that the method will detect a leak in lines.

(iii) Underground piping that conveys regulated substances using an exempt suction system is not required to have a release detection system. An exempt suction system is one that is designed and constructed to meet the following requirements:

(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 shall be provided that allows compliance with this ~~s~~Section to be readily determined.

(h) ~~*New* UST~~ *System* ~~*i*~~*Installations or Replacements on or after December 1, 2005.* ~~*and repairs.*~~ Regardless of any other ~~s~~Section in this ~~c~~Chapter, ~~after the effective date of this chapter,~~ all new ~~and~~ or replacement installations occurring on or after December 1, 2005, ~~and repairs of existing piping~~ shall meet the following secondary containment criteria:

(i) New or replacement tanks shall be provided with full secondary containment in the form of:

(~~a~~A) Double-wall ~~Walled~~ tanks; or

(~~b~~B) Single-wall tanks with a polyethylene tank jacket.

(ii) New or replacement connected piping shall be provided with full secondary containment in the form of:

(~~a~~A) Double-wall lines; or

(~~b~~B) Single-wall lines with secondary containment piping. ~~And~~

(iii) All dispensers ~~must~~ shall be equipped with full secondary containment in the form of dispenser pans.

(iv) All secondary containment systems shall be monitored in accordance with Section 16(f). Pressurized piping shall be equipped with an automatic line leak detector in accordance with Section 14(g).

(v) If mechanical line leak detectors or electronic line leak detectors are being used for leak detection, sump sensors used for interstitial monitoring do not need to meet the 3 gallons per hour leak detection requirement. In these cases, the sump sensors may be placed anywhere in the sump from the lowest point of the sump to no higher than 2 inches below the lowest penetration in the sump.

(i) *Piping Installed After June 30, 2017.* When a new piping interstitial monitoring system is installed and sump sensors are used as standalone automatic line leak detectors, the system shall be configured to shut off the flow of product in that piping run when a sump sensor triggers an alarm. Essential homeland security systems, emergency generator systems, and systems used for other disaster relief efforts are exempt from this requirement.

(j) *Interstitially Monitored Pressurized Piping Installed Prior to December 1, 2005.* If double-wall piping systems using sumps for interstitial monitoring were installed before December 1, 2005, the owner and/or operator may install mechanical or electronic line leak detectors and perform annual line tightness testing in accordance with Section 14(g)(i)(B)(I) or an alternative tank leak detection method as described in Section 14(g)(i)(B)(II) to meet leak detection requirements. In this case, the owner and/or operator will not be required to perform periodic integrity testing of containment sumps used for interstitial monitoring.

Section 15. Petroleum USTs with a ~~c~~Capacity of 2,000 ~~g~~Gallons or ~~l~~Less. Tanks installed on or after December 1, 2005, shall be double-wall systems and interstitially monitored. Tanks installed on or before November 30, 2005, shall be monitored for releases at least every 30 days using one of the methods listed

in Section 16. Tanks with a capacity of 550 gallons or less and tanks with a capacity of 551 to 1,000 gallons that meet the tank diameter criteria in Table 1 may use manual tank gauging as the sole method of release detection in accordance with Section 15(a). All other tanks with a nominal capacity of 551 to 2,000 gallons may use manual tank gauging in place of inventory control.

(a) *Manual ~~t~~Tank ~~g~~Gauging.* Manual tank gauging shall meet the following requirements:

(i) Tank liquid level measurements shall be taken at the beginning and ending of ~~a~~ the minimum test duration ~~period of at least thirty-six (36) hours~~ shown in Table 1 during which no liquid is added to or removed from the tank;

(ii) Level measurements shall be based on an average of two ~~(2)~~ consecutive stick readings at both the beginning and end of the period;

(iii) The equipment used shall be capable of measuring the depth of the regulated substance over the full range of the UST's height to the nearest one-eighth ~~(1/8)~~ of an inch;

(iv) A suspected release shall be declared and the requirements of Part E shall be followed if the variation between beginning and ending measurements exceeds the weekly or monthly standards in Table 1~~,~~:

TABLE 1
MANUAL TANK GAUGING VARIATION STANDARDS

Nominal Tank Capacity	Weekly Standard (one test)	Monthly Standard (average of four tests)	Minimum Test Duration Hours*
~~If Manual Tank Gauging is the ONLY leak detection method used:~~			
550 gallons or less	10 gallons	5 gallons	36

TABLE 1
MANUAL TANK GAUGING VARIATION STANDARDS

Nominal Tank Capacity	Weekly Standard (one test)	Monthly Standard (average of four tests)	Minimum Test Duration Hours*
551-1,000 gallons (when the tank diameter is 64") ~~x 73" or less)~~	9 gallons	4 gallons	44
551-1,000 gallons (~~if~~ when the tank diameter is 48") ~~x 128")~~	12 gallons	6 gallons	58
551-1,000 gallons	13 gallons	7 gallons	36
~~If Manual Tank Gauging is combined with tank tightness testing:~~			
1,001-2,000 gallons	26 gallons	13 gallons	36

* Nothing can be added to or removed from the UST for the duration of the test.

~~(v) Owners and/or operators of USTs of one thousand (1000) gallons or less nominal capacity may use Manual Tank Gauging as the sole method of release detection. Owners and/or operators of USTs of one thousand one (1001) to two thousand (2,000) gallons may use manual tank gauging, combined with tank tightness testing at least every five (5) years until ten (10) years after the UST itself first met the requirements of Section 6(a). After ten (10) years, owners and/or operators of these tanks may not use manual tank gauging. Owners and/or operators of USTs of greater than two thousand (2,000) gallons nominal capacity may not use manual tank gauging.~~

(b) *Other Release Detection Methods*. Owners and/or operators of petroleum USTs with a capacity of 2,000 gallons or less may also use any of the release detection methods listed in Section 16(a) through (j~~k~~).

Section 16. Petroleum UST Systems with a ~~c~~Capacity of ~~m~~More ~~t~~Than 2,000 ~~g~~Gallons. Petroleum USTs with a capacity of

more than 2,000 gallons installed on or after December 1, 2005, shall be double-wall systems and interstitially monitored. Petroleum USTs installed on or before November 30, 2005, with a capacity of more than 2,000 gallons shall be monitored at least every ~~thirty (~~30~~)~~ days for releases using one or more of the following methods:

(a) *Inventory ~~c~~Control*. Inventory control is ~~never~~ not acceptable as a leak detection method except when it is combined with another method or when the UST meets the requirements of Section 14(f). Product inventory control (or another test of equivalent performance) shall be conducted monthly to detect a release of at least ~~1.0 percent (~~1%~~)~~ of throughput plus ~~one hundred thirty (~~130~~)~~ gallons in the following manner:

(i) Inventory volume measurements for regulated substance inputs, withdrawals, and the amount still remaining in the UST shall be recorded each operating day;

(ii) The equipment used shall be capable of measuring the depth of regulated substance over the full range of the UST's height to the nearest one-eighth ~~(1/8)~~ of an inch;

(iii) The regulated substance inputs shall be reconciled with delivery receipts by measurement of the UST inventory volume before and after delivery;

(iv) Deliveries shall be made through a drop tube that extends to within ~~six (~~6~~)~~ inches of the ~~Storage~~ ~~T~~tank bottom;

(v) ~~Dispensing of~~ ~~r~~Regulated substance~~s~~ dispensing shall be metered and recorded within the local standards for meter calibration or an accuracy of ~~six (~~6~~)~~ cubic inches for every ~~five (~~5~~)~~ gallons of regulated substance withdrawn; and

(vi) Water in the bottom of the UST shall be measured to the nearest one-eighth ~~(1/8)~~ of an inch at least once a month.

~~(vii) Owners and/or operators using inventory control may combine this method with tank tightness testing at least every five (5) years until December 22, 2008, or until ten (10) years after the UST itself first met the requirements of Section 6(a), whichever is sooner;~~

(vii~~i~~) Owners and/or operators using inventory control shall report a suspected release under Section 19~~(c)~~ ~~of~~

~~this chapter~~ whenever:

(A) The inventory control fails to balance within ~~1.0 percent (1%)~~ of total throughput plus ~~one hundred thirty (130)~~ gallons for the second consecutive month; or

~~(B) More than 20 daily readings are either positive or negative for the second consecutive month; or~~

~~(C)~~(B) ~~A graph of the daily~~ Daily over/short readings show~~s~~ a consistent non-zero trend for two ~~(2)~~ consecutive months.

(~~ix~~viii) The following ~~methods~~ are methods of equivalent performance to inventory control:

(A) Vapor ~~M~~monitoring conducted in accordance with ~~s~~Section 16(d) ~~of this chapter~~;

(B) Groundwater ~~M~~monitoring conducted in accordance with ~~s~~Section 16(e) ~~of this chapter~~;

(C) Interstitial ~~M~~monitoring conducted in accordance with Section 16(f) ~~of this chapter~~;

(D) Statistical ~~I~~inventory ~~R~~reconciliation conducted in accordance with Section 16(g) ~~of this chapter~~;

(E) Tracer ~~S~~surveys conducted in accordance with Section 16(h) ~~of this chapter~~;

~~(F) Passive Acoustical Sensing conducted in accordance with Section 16(k) of this chapter; and~~

(F) Manual tank gauging conducted in accordance with Section 15, provided the tank has a capacity of 2,000 gallons or less; or

(G) Other methods approved under Section 16(i~~j~~) ~~of this chapter~~, ~~providing~~ provided that the request for approval of the method specifically states that the method is of equivalent performance to inventory control.

(b) *Tank ~~t~~Tightness ~~t~~Testing*. Tank tightness testing shall be capable of detecting a 0.1 gallon per hour leak rate from any portion of the UST that routinely contains regulated substance

while accounting for the effects of thermal expansion or contraction of the regulated substance, vapor pockets, tank deformation, evaporation or condensation, and the ~~facility~~ location of the water table. Whenever a tank tightness test shows a failing result, the owner and/or operator shall report a suspected release and follow either Section 20 or 21. ~~(a)(i) and (ii) of this chapter.~~

(c) *Automatic ~~t~~Tank ~~g~~Gauging ~~(ATG).~~* Equipment for automatic tank gauging that tests for the loss of a regulated substance shall detect a 0.2 gallon per hour leak rate from any portion of the tank that routinely contains a regulated substance. Owners and/or operators using automatic tank gauging shall also:

(i) ~~c~~Conduct inventory control in conformance with paragraph (a) of this ~~s~~Section, unless:

(A) ~~t~~The regulated substance is placed in the UST in batches of ~~twenty-five (~~25~~)~~ gallons or less;

(B) ~~t~~The tank is used only to fuel an emergency power generator;

(C) ~~a~~A passing result is obtained monthly from the ~~A~~automatic ~~T~~tank ~~G~~gauge (ATG) with the tank at least 85% full;

(D) ~~t~~The ATG ~~automatic tank gauge itself~~ reconciles the inventory to the same levels as required by paragraph (a)~~(i)~~ of this ~~s~~Section; or

(E) ~~a~~ A method of equivalent performance to inventory control is also conducted. ~~used.~~ To meet the definition of "equivalent performance to inventory control," the method must measure volume for regulated substance inputs, withdrawals, and the amount still remaining in the tank. Measurements must be recorded each operating day. The method must meet the requirements of Section 16(i) and be approved by the department prior to use.

(ii) Perform the test with the system operating in one of the following modes:

(A) In-tank static testing conducted at least

once every 30 days; or

(B) 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 30 days.

(iii) ~~r~~Report a suspected release and follow the requirements of Part E ~~Section 19(c) of this chapter~~ whenever:

(A) Any calendar month goes by when a passing result cannot be obtained from the ATG sometime during the month; ~~or~~

(B) A pattern becomes evident that the ATG produces a failing result whenever the level of a regulated substance in the tank is high, even if passing results can be obtained when the level is low~~.~~; or

(C) Inventory control fails for the second consecutive month.

(d) *Vapor Monitoring*. Testing or monitoring for vapors within the soil gas of the excavation zone shall meet the following requirements:

(i) 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 zone;

(ii) The stored regulated substance, or a tracer compound placed in the UST system, is sufficiently volatile 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;

(iii) 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~~)~~ days;

(iv) The soil and backfill material immediately surrounding the UST system shall not be contaminated with the regulated product in such a way as to interfere with the method

used to detect releases from the UST system;

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

(vi) ~~In t~~The UST excavation zone ~~, the site~~ is assessed to ensure compliance with the requirements in this ~~s~~Section and to establish the number and positioning of vapor monitoring wells that will detect releases within the excavation from any portion of the tank that routinely contains the regulated substance; and

(vii) Vapor monitoring wells shall be clearly marked for identification and secured to avoid unauthorized access and tampering.

(viii) Owners and/or operators using vapor monitoring wells for leak detection shall report a suspected release ~~under~~ in accordance with Section 19~~(c)~~ ~~of this chapter~~ whenever a vapor monitoring device detects a leak and cannot be made to reset within ~~forty-eight (~~48~~)~~ hours.

(ix) ~~After the effective date of these regulations, no n~~New UST facilities~~y~~ shall not be installed using vapor monitoring as the only leak detection method. Owners and/or operators may install vapor monitoring wells as a secondary method. In the event that vapor monitoring wells are installed in the backfill, a permit to construct under Chapter 3, Wyoming Water Quality Rules and Regulations, is not required.

(e) *Groundwater ~~m~~Monitoring*. Testing or monitoring for liquids on the groundwater shall meet the following requirements:

(i) The regulated substance stored is immiscible in water and has a specific gravity of less than 1; ~~one (1);~~

(ii) Groundwater is never more than ~~twenty (~~20~~)~~ feet from the ground surface, and the hydraulic conductivity of the soil(s) 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);

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

(iv) Monitoring wells shall be sealed from the ground surface to the top of the filter pack with hydrated bentonite and concrete;

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

(vi) The continuous monitoring devices or manual methods used shall be capable of detecting the presence of at least one-eighth ~~(1/8)~~ of an inch of free product on top of the groundwater in the monitoring wells;

(vii) Within and immediately below the UST excavation zone, the site shall be assessed to ensure compliance with the requirements in this Section ~~16(e)(i) through (v)~~ and to establish the number and positioning of monitoring wells or devices that will detect releases from any portion of the UST system that routinely contains a regulated substance;

(viii) Monitoring wells shall be clearly marked for identification and secured to avoid unauthorized access and tampering; and

(ix) Groundwater monitoring shall not be used when the ambient groundwater is already contaminated with the regulated substance being stored in the UST system.

(x) Owners and/or operators using groundwater monitoring shall report a suspected release and follow the requirements of ~~Section 19(c) and (d)~~ Part E ~~of this chapter~~ whenever any regulated substance is observed in any monitoring well at any level. ~~whatsoever.~~

(xi) ~~After the effective date of these regulations, no n~~New UST facilities~~y~~ shall not be installed using groundwater monitoring as the only leak detection method. Owners and/or operators may install groundwater monitoring wells as a secondary

method. In the event that groundwater monitoring wells are installed in the backfill, a permit to construct under Chapter 3, Wyoming Water Quality Rules and Regulations, is not required.

(f) *Interstitial ~~m~~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 a regulated substance and also meets one of the following requirements:

(i) ~~For double-walled UST systems, t~~The sampling or testing method for double-wall UST systems shall be capable of detecting a ~~release~~ leak through the inner wall in any portion of the tank that routinely contains a regulated substance.~~;~~

(ii) ~~For UST systems with a secondary barrier within the excavation zone, t~~The sampling or testing method used for UST systems with a secondary barrier within the excavation zone shall be capable of detecting a ~~release~~ leak between the UST system and the secondary barrier in accordance with the following:~~;~~

(A) The secondary barrier around or beneath the UST system shall consist 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 ~~release~~ to the monitoring point and permit its detection;~~.~~ ~~The permeability of this barrier to the regulated substance stored shall be no more than 10^{-6} cm/sec;~~

(B) The barrier shall be compatible with the regulated substance stored so that a leak ~~release~~ from the UST system will not cause a deterioration of the barrier allowing a release to pass through undetected;

(C) The secondary barrier ~~F~~for cathodically protected USTs~~, the secondary barrier~~ shall be installed so that it does not interfere with the proper operation of the CP system;

(D) Groundwater, soil moisture, or rainfall shall not render the testing or sampling method used inoperative so that a release could go undetected for more than ~~thirty (~~30~~)~~ days;

(E) The site shall be assessed to ensure that the secondary barrier is always above the groundwater and not in a 25-year flood plain~~,~~ unless the barrier and monitoring designs are for use under such conditions; and

(F) Monitoring wells shall be clearly marked for identification and secured to avoid unauthorized access and tampering.

(iii) ~~For USTs with internally fitted liners, a~~ An automated device shall be capable of detecting a ~~release~~ leak between the inner wall of the UST and the liner on USTs with internally fitted liners. The liner shall ~~also~~ be compatible with the regulated substance stored.

(iv) Owners and/or operators using interstitial monitoring shall report a suspected release and follow the requirements of Part E ~~Section 19(c) of this chapter~~ whenever any monitoring device indicates a leak and the device ~~itself~~ cannot be shown to be defective within ~~forty-eight (~~48~~)~~ hours of the initial alarm.

(v) Double-wall and interstitially monitored storage tank systems or piping installed after December 1, 2005, shall be interstitially monitored for the lifetime of the tank system or piping.

(vi) Monthly interstitial monitoring results shall be recorded by the owner and/or operator. This may be accomplished by maintaining a monthly log or obtaining a monthly printout from an approved monitoring system.

(g) *Statistical Inventory Reconciliation (SIR)*. All SIR methods shall:

(i) ~~m~~Meet the requirements ~~found~~ in Section 16(a) for inventory control;

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

(iii) ~~b~~Be capable of detecting a 0.2 gallon per hour leak rate or a release of ~~one hundred fifty (~~150~~)~~ gallons within ~~a month~~ 30 days with a probability of detection of at

least 0.95 and a probability of false alarm of no more than 0.05; ~~and~~

(iv) Use a threshold that does not exceed one-half the minimum detectible leak rate; and

(~~iii~~v) ~~b~~Be approved, in writing, by the department prior to use.

(vi) Monitoring results must be obtained by the owner and/or operator from the SIR provider within each 30-day monitoring period.

(~~i~~vii) All "inconclusive" results shall be investigated by the owner and/or operator as soon as they are reported by the SIR company, including a complete audit of all input data. The owner and/or operator shall make every effort to resolve all "inconclusive" results as soon as they are reported. If the inventory for an entire month fails to balance within ~~two thousand (~~2,000~~)~~ gallons, that month shall be treated as inconclusive. A month with an un-resolved inconclusive result is a month when no valid leak detection was provided.

(viii) Owners and/or operators using SIR shall report a suspected release and follow the requirements of Part E ~~Section 19(c) of this chapter~~ whenever:

(A) Any single month is reported as a failure for the UST system by the SIR company;

(B) Any month is reported by the SIR company as "inconclusive" unless that inconclusive result has been resolved by re-submission of audited inventory numbers to the SIR company.

(~~vi~~ix) UST ~~S~~systems with a throughput of more than 500,000 gallons per month in any single system shall not be monitored using SIR as the only release detection method.

(h) *Tracer Surveys*. Owners and/or operators may use tracer surveys as an approved monthly monitoring technique if:

(i) The tracer method can detect a 0.2 gallon per hour leak rate or a release of ~~one hundred fifty (~~150~~)~~ gallons within ~~a month~~ 30 days with a probability of detection of 0.95 and a

probability of false alarm of 0.05; ~~and~~

(ii) The tanks are inoculated with the same tracer each month;

(iii) The tanks are inoculated each month before the 10th day of the month;

(iv) The ~~T~~tracer ~~S~~survey is completed before the 25th day of each month;

(v) The report for each month includes the calculations of the amount of tracer needed, the amount actually added to each tank, and the calculated leak detection limit in gallons per day; and

(vi) The report for each test clearly states that the tank(s) either passed or failed the test.

(vii) Any failing test using tracer surveys shall be treated as a suspected release under ~~Section 24 or 25.~~ Part E.

~~(i) *Passive Acoustic Sensing*. Owners and/or operators of Storage Tanks using this method shall be equipped with a continuous sensing system capable of detecting a release of 0.2 gallons per hour or a release of 150 gallons per month with a probability of detection of 0.95 and a probability of false alarm of 0.05. All passive acoustic sensing systems shall produce a written record showing that the system is on and operable. All passive acoustic sensing systems shall be calibrated annually;~~

(~~j~~i) *Other ~~t~~Technology*. With prior department authorization, pursuant to Section 33, other types of release detection methods, or combination of methods, may be used if:

(i) The method can detect a 0.2 gallon per hour leak rate or a release of ~~one hundred fifty (~~150~~)~~ gallons within ~~a month~~ 30 days with a probability of detection of 0.95 and a probability of false alarm of 0.05; or

(ii) The owner and/or operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in Section 16(b) through (h). In comparing methods, the department 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/or operator shall comply with any conditions imposed by the department to ensure the protection of human health and the environment.

(~~k~~j) *Multiple Methods*. Whenever these regulations require the use of more than one leak detection method, ~~the~~ owners and/or operators shall meet all ~~of the~~ requirements for all ~~of the~~ leak detection methods required.

Section 17. Hazardous Substance UST Systems. ~~USTs containing any substance listed in Appendix A of this chapter are hazardous substance USTs.~~ Owners and/or operators of hazardous substance UST systems shall provide ~~release detection~~ containment that meets the following requirements and monitor these systems every 30 days using Section 16(f):

(a) *Release ~~d~~Detection.*~~:~~ Hazardous substance UST systems shall have a secondary containment system, be constructed with double-wall~~ed~~ tanks, or be constructed with an external liner or vault surrounding the entire tank system. These systems shall meet the following requirements:

(i) Secondary containment systems shall:

(A) ~~b~~Be designed, constructed, and installed to contain regulated substances ~~released~~ leaked from the ~~tank system~~ primary containment until those substances are detected and removed;

(B) ~~b~~Be designed, constructed, and installed to prevent the release of regulated substances to the environment at any time during the operational life of the UST system; and

(C) ~~b~~Be inspected for evidence of a release at least once every ~~thirty (~~30~~)~~ days.

(ii) Double-wall~~ed~~ tanks shall:

(A) Be designed, constructed, and installed to contain a ~~release~~ leak from any portion of the inner tank within the outer wall;

(B) Be designed, constructed, and installed to detect the failure of the inner wall; and

(C) Be inspected for evidence of a release at least once every ~~thirty (~~30~~)~~ days.

(iii) External liners~~,~~ (including vaults) shall:

(A) Be designed, constructed, and installed to contain ~~one hundred percent (~~100%~~)~~ of the capacity of the largest tank within its boundary;

(B) Be designed, constructed, and installed to prevent the interference of precipitation or groundwater intrusion with the ability to contain or detect a release of regulated substances;

(C) Be designed, constructed, and installed to surround the tank completely (i.e., ~~it is~~ capable of preventing lateral ~~as well as~~ and vertical migration of regulated substances); and

(D) Be inspected for evidence of a release at least once every ~~thirty (~~30~~)~~ days.

(b) *Connected Piping.*~~:~~ Connected piping shall be equipped with secondary containment that satisfies the requirements of this ~~s~~Section. Trench liners and double-wall~~ed~~ pipe are examples of secondary containment systems. Connected piping that conveys regulated substances under pressure shall be equipped with an automatic line leak detector in accordance with Section 14(g)(i).

(c) *Other ~~m~~Methods.*~~:~~ Other methods of release detection may be used for hazardous substance UST systems installed on or before October 13, 2015, if owners and/or operators:

(i) Demonstrate to the department that an alternate method can detect a release of the stored regulated substance as effectively as any of the methods allowed in Section 16(b) through (h) can detect a release of petroleum;

(ii) Provide information to the department on effective corrective action technologies, health risks, and chemical and

physical properties of the stored substance, and the characteristics of the UST site; and

(iii) Obtain authorization from the department to use the alternate release detection method before the installation and operation of the new or modified UST system.

Section 18. Release Detection Recordkeeping for UST Owners and/or Operators. All UST system owners and/or operators shall maintain records in accordance with Section 13 demonstrating compliance with all applicable requirements of this ~~p~~Part. These records shall include the following:

(a) *Performance Claims.*~~:~~ 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, shall be maintained for ~~three (3)~~ 5 years~~,~~ from the date of installation.~~;~~ Not later than October 13, 2018, records of site assessments required under Sections 16(d) and (e) shall be maintained for as long as the methods are used. Records of site assessments developed after October 13, 2015, shall be signed by a professional engineer or professional geologist registered in the State of Wyoming;

(b) *Test Results.*~~:~~ The results of any sampling, testing, or monitoring shall be maintained for at least ~~three (~~3~~)~~ years except: ~~; and~~

(i) Tank tightness testing results shall be retained until the next test is conducted; and

(ii) Tank tightness testing, line tightness testing, and vapor monitoring using a tracer compound placed in the tank system conducted in accordance with Section 51(d)shall be retained until the next test is conducted.

(c) *Calibration, Maintenance and Repair.*~~:~~ Written documentation of all calibration, maintenance, and repair of release detection equipment permanently located on–site shall be maintained for the operational life of the tank in accordance with W.S. 35-11-1416(a)(vi). Any schedules of required calibration and maintenance provided by the release detection equipment manufacturer shall be retained for the operational life of the tank.

PART E

~~STORAGE TANK SYSTEMS:~~
RELEASE REPORTING, INVESTIGATION, CONFIRMATION
AND RESPONSE

Section 19. Release Reporting. ~~of Suspected Releases.~~ ~~Owners and/or operators of s~~Storage tank system~~s~~ owners and/or operators shall ~~orally~~ report all releases or suspected releases to the department within ~~twenty-four (~~24~~)~~ hours of discovery ~~all releases or suspected releases~~ in accordance with Section 22 and follow the procedures of Section 22. All confirmed releases shall also be reported to the fire department having local jurisdiction. Owners of sites where storage tanks were formerly located shall ~~also~~ report to the department within ~~seven (~~7~~)~~ days after discovering any new evidence of a release. ~~These reports shall be made for any of the following conditions:~~

(a) *Release Reporting.* Release reporting shall be made for any of the following conditions:

(~~a~~i) Released Regulated Substances.~~:~~ The discovery by owners and/or operators or others of released regulated substances at ~~the~~ a storage tank site or in the surrounding area (such as the presence of free product or vapors in soils, basements, utility lines, nearby surface water and/or groundwater).~~;~~

(~~b~~ii) Unusual ~~o~~Operating ~~c~~Conditions.~~:~~ Unusual operating conditions observed by owners and/or operators (such as the erratic behavior of product dispensing equipment, the sudden loss of a regulated substance from ~~the~~ a storage tank system, ~~or~~ an unexplained presence of water in ~~the~~ a storage 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 substance to the environment;

(B) ~~to be~~ Any defective system equipment or component ~~but not leaking, and~~ is immediately repaired or replaced; ~~and~~ or

(C) Except as provided in Section 16(f)(ii)(D), any liquid in the interstitial space of secondarily contained systems that is not used as part of the interstitial monitoring method (e.g., brine filled) is immediately removed.

(~~c~~iii) Monitoring ~~r~~Results.~~:~~ Monitoring results, including investigation of an alarm, from a release detection method required under Part D ~~Section 14 through 17~~ that indicate a release may have occurred unless:

(A) T~~t~~he 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 in Section 16(f)(ii)(D), any liquid in the interstitial space not used as part of the interstitial monitoring method (e.g., 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 Section 16(a), a second month of data does not confirm the initial result or the investigation determines no released has occurred; or

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

(~~d~~b) *Off-site Impacts.* Owners and/or operators of storage tank systems~~,~~ and owners of former storage tank sites~~,~~ shall follow the applicable procedures in Section 20 or 21 to determine if the storage tank 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, utility lines, nearby surface water and/or groundwater) that have been observed by the department or brought to its attention by another party.

Section 20. Release Investigation and Confirmation for Eligible Owners and/or Operators. ~~Owners and/or operators of s~~Storage tank~~s~~ owners and/or operators who are eligible for cleanup under the Corrective Action Account shall comply with Section 25 and immediately investigate and confirm all suspected releases of regulated substances requiring reporting under Section 19 within ~~seven (~~7~~)~~ days of detection as follows:

(a) *System ~~t~~Test*. Owners and/or operators shall conduct tests~~,~~ according to the requirements for tightness testing in Sections 14~~–~~(g) and ~~Section~~ 16~~–~~(b)~~,~~ or, as appropriate, secondary containment testing described in Section 8(a)(v) that determine ~~whether~~ if a leak exists in ~~that~~ any portion of the storage tank system that routinely contains a regulated substance or a breach of either wall of the secondary containment has occurred. If the primary wall of a double-wall tank or double-wall/secondarily contained pipe fails, an integrity test of the outer wall and/or secondary containment shall be conducted. Owners and/or operators of all storage tanks shall also audit ~~one year's~~ inventory control required by Section 16(a) or 36(e) for 12 months prior to the suspected release.

(i) Owners and/or operators shall repair, replace, or permanently close the storage tank system if the test results for the system, tank, or delivery piping indicate that a leak exists.

(ii) Owners and/or operators shall ~~also~~ conduct a thorough audit of ~~all of~~ their leak detection methods for the preceding year. This audit shall be performed by a qualified third party~~,~~ employed for this purpose by the owner and/or operator. In the event that the audit indicates a pattern of releases over several months, ~~then~~ the department will ~~accomplish~~ complete the site check as described in Section 20(c).

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

(b) *Further Action.* If the test results required under Section 20(a) do not indicate a release, but environmental contamination is the basis for suspecting a release, the department will ~~accomplish~~ complete the site check ~~as~~ required

under Section 20(c) and ~~all~~ other ~~required~~ Part E activities~~, as~~ determined by the Solid and Hazardous Waste Division ~~a~~Administrator.

(c) *Site ~~c~~Check*. The department shall test for the presence of a release where contamination is most likely to be present at the storage tank site. In selecting sample types, sample locations, and measurement methods, the department shall consider the nature of the stored regulated substance, the type of initial alarm or cause for suspicion, the type of backfill, the depth of groundwater, and other factors appropriate for identifying the presence and source of the release. If the test results for the site check do not indicate that a release has occurred, further investigation is not required.

(d) *Plans and Specifications.~~,~~* All plans, specifications and reports ~~filed~~ submitted to the department under this ~~s~~Section ~~with the department~~ shall ~~also~~ be signed and sealed by a Wyoming Registered Professional Engineer ~~under W.S. 33-29-114 through 33-29-149~~ and/or a Wyoming Registered Professional Geologist, ~~under W.S. 33-41-101 through 33-41-121,~~ as applicable and required by state statute.

Section 21. Release Investigation and Confirmation for Owners and/or Operators Not Eligible for the Corrective Action Account. ~~Owners of c~~Contaminated site~~s~~ owners and ~~Owners and/or Operators of~~ storage tank~~s~~ owners and/or operators may become ineligible for cleanup under the Corrective Action Account for any ~~of the~~ reason~~s~~ listed in W.S. 35-11-1424. Owners and/or ~~O~~operators who are not eligible for cleanup under the Corrective Action Account shall ~~immediately~~ investigate and confirm all suspected releases of regulated substances requiring reporting under Section 19 within ~~seven (~~7~~)~~ days of detection as follows:

(a) *System ~~t~~Test*. Owners and/or operators shall conduct tests~~,~~ according to the requirements for tightness testing in Section~~s~~ 14(g) and ~~Section~~ 16(b), or, as appropriate, secondary containment testing described in Section 8(a)(v) that determine if ~~whether~~ a leak exists in ~~that~~ any portion of the storage tank system that routinely contains regulated substance or a breach of either wall of the secondary containment has occurred.~~, or the connected piping, or both.~~ Storage tank ~~O~~owners and/or operators shall also audit all inventory control required under Sections

16(a) or 36(e) for ~~the year~~ 12 months prior to the suspected release.

(i) Owners and/or operators shall repair, replace, or permanently close the storage tank system if the test results for the system indicate that a leak exists.

(ii) When environmental contamination is the basis for suspecting a release, owners and/or operators shall also conduct a thorough audit of ~~all of~~ their leak detection methods for the preceding 12 months. ~~year.~~ This audit shall be performed by a qualified third party~~,~~ employed for this purpose by the owner and/or operator. In the event that the audit indicates a pattern of releases over several months, owners and/or operators shall conduct a site check as described in Section 20(c).

(iii) Owners and/or operators shall conduct a minimum site assessment as described in Section 29 any time ~~that the~~ results of the system test described in Section 21(a) indicate that a leak exists~~,~~ or ~~if~~ when environmental contamination is the basis for suspecting a release.

(b) *Further Action*. Further investigation is not required if the system test results required under Section 21(a) do not indicate that a leak exists ~~and~~ or if environmental contamination is not the basis for suspecting a release. If the test results for the excavation zone at an UST site or the results for the area immediately adjacent to the storage tank system at an above~~-~~ground storage tank site indicate that a release has occurred, owners and/or operators shall begin corrective action in accordance with Part E.~~;~~

(c) *Permits Required*. Owners of contaminated sites and/or owners and/or operators of storage tank systems shall ~~also~~ ensure that ~~all necessary department~~ well permits ~~for groundwater monitoring or product recovery wells~~ have been issued prior to initiating site check activities.

(d) *Plans and Specifications.* All plans, specifications and reports submitted to the department ~~filed this section with the department~~ shall ~~also~~ be signed and sealed by a Wyoming Registered Professional Engineer ~~under W.S. 33-29-114 through 33-29-149~~ and/or a Wyoming Registered Professional Geologist, ~~under~~

~~W.S. 33-41-101 through 33-41-121,~~ as applicable and required by state statute.

Section 22. Spill and Overfill Reporting and Cleanup. ~~of Spills and Overfills.~~

(a) *Cleanup and 24-~~h~~Hour ~~r~~Reporting.~~:~~* Owners and/or ~~O~~operators of storage tank systems shall contain and immediately clean up a spill or overfill. Spills and overfills shall be reported ~~and orally report~~ to the department within ~~twenty-four (~~24~~)~~ hours ~~all spills or overfills~~ by telephone ~~to~~ (307) 777-7097 (STP) and (307) 777-7781 (spill response) ~~7781, by FAX transmission to (307) 777-5973, or by electronic mail to http://deq.state.wy.us/~~ and by logging into the spill response database on the DEQ website. The owner and/or operator shall ~~and~~ begin corrective action in accordance with Sections 23 through 25 in the following cases:

(i) Spill or overfill of petroleum that results in a release to the environment that exceeds 25 gallons or that causes a sheen on nearby surface water; and/or

(ii) Spill or overfill of a regulated hazardous substance that results in a release to the environment that equals or exceeds its reportable quantity under ~~CERCLA (~~40 CFR Part 302 as referenced in Section 2.~~).~~

(b) *Owner's and/or ~~o~~Operator's Costs.~~:~~* Costs incurred by owners and/or operators to contain and/or cleanup surface spills and/or overfills are not eligible for the state ~~correction~~ Corrective Action Account funds. ~~action program funds.~~ Leaks that occur within a dispenser cabinet at or above the fire valve are considered surface spills and are not eligible for cleanup under the Corrective Action Account. Leaks that occur below the fire valve are considered leaks from piping and are eligible for cleanup under the Corrective Action Account.

(c) *Small Spills.~~:~~* Owners and/or operators of storage tank systems shall contain and immediately cleanup a spill or overfill of petroleum that is less than 25 gallons and 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, owners and/or operators shall immediately notify the department.

(d) *Other Reporting.* A release of a hazardous substance equal to or in excess of its reportable quantity must also be reported immediately (rather than within 24 hours) to the National Response Center in accordance with CERCLA (1980) and to appropriate state and local authorities under Title III of the Superfund Amendments and Reauthorization Act of 1986.

Section 23. General. Owners and/or operators of storage tank systems ~~, and~~ and owners of former storage tank sites~~,~~ shall, in response to a confirmed release from ~~the~~ a storage tank system, comply with the requirements of this ~~p~~Part. ~~except for USTs excluded under Section 4(b) of this chapter.~~

Section 24. Owners and/or Operators Not Eligible for the State Corrective Action Account. ~~Program.~~

(a) *Initial Response*. ~~Upon~~ Within 24 hours of confirmation of a release in accordance with Section 21 or after a release from ~~the~~ a storage tank system is confirmed in any other manner, owners and/or operators shall perform the following initial response actions: ~~within twenty-four (24) hours of a release:~~

(i) ~~Orally~~ ~~r~~Report the release to the department by telephone~~,~~ (307) 777-7097 (STP) and (307) 777-7781 (spill response) ~~7781, by electronic mail to http://deq.state.wy.us/, or by FAX to (307)777-5973;~~ and by logging into the spill response database on the DEQ website;

(ii) Take immediate action to prevent any further release of the regulated substance into the environment; and

(iii) Identify and mitigate fire, explosion, and vapor hazards.

(b) *Initial Abatement Measures and Site Check*. Owners and/or operators of storage tank systems shall ~~accomplish~~ complete the following abatement measures:

(i) Remove as much of the regulated substance from the storage tank system as is necessary to prevent further release to the environment;

(ii) Visually inspect any above ground or exposed below ground releases and prevent further migration of the released substance into surrounding soils, ~~and~~ groundwater, or surface water~~s~~;

(iii) ~~Continue to~~ ~~m~~Monitor and mitigate ~~any additional~~ fire, explosion, and other safety hazards ~~posed by vapors or free product that have migrated from an UST excavation zone or from under an above ground storage tank and entered into~~ in subsurface structures (such as sewers or basements);

(iv) Remedy hazards posed by contaminated soils that are excavated or exposed as a result of release confirmation, site investigation, abatement, or corrective action activities. If these remedies include treatment or disposal of soils, the owner and/or operator shall comply with the applicable department requirements;

(v) Measure for the presence of a release where contamination is most likely to be present at the storage tank site, unless the presence and source of the release have been confirmed during completion of the system test ~~in accordance with the site check~~ required by Section 21 or the ~~closure~~ minimum site assessment ~~of~~ required by Section 31. In selecting sample types, sample locations, and measurement methods, the owner and/or operator shall consider the nature of the stored regulated substance, the type of backfill, depth to groundwater and other factors as appropriate for identifying the presence and source of the release;

(vi) Investigate to determine the possible presence of free product~~,~~ and begin free product removal as soon as practicable ~~and~~ in accordance with ~~this~~ ~~s~~Section 24(d); and

(vii) ~~Submit a report,~~ ~~w~~Within ~~thirty (~~30~~)~~ days of ~~after~~ release confirmation, submit a report to the department summarizing the initial abatement steps taken and any resulting information or data required by this ~~s~~Section.

(c) *Initial Site Characterization*. Owners and/or operators shall assemble information about the site and the nature of the release.~~,~~ The information shall be submitted to the department within 60 days of release confirmation. This information shall include~~ing~~ ~~information gained~~ data obtained while confirming the

release or completing the initial abatement measures required by ~~of~~ this ~~s~~Section. This information shall include, but is not limited to, the following:

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

(ii) Data from available sources and/or site investigations regarding ~~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;

(iii) Results of the site check required under Section 24(b);

(iv) ~~The~~ ~~r~~Results of the free product investigations required under Section 24~~—~~(b)~~,~~ ~~shall~~ to be used by owners and/or operators to determine ~~whether~~ if free product is to ~~shall~~ be recovered under Section 24~~—~~(d); and

~~(v) Within sixty (60) days of release confirmation, owners and/or operators shall submit the information collected in compliance with this section to the department in a manner that demonstrates its applicability and technical adequacy; and~~

(v~~i~~) Information necessary to classify the affected groundwater under Chapter 8, Wyoming Water Quality Rules and Regulations.

(d) *Free Product Removal*. When free product is discovered, owners and/or operators shall contact the department within ~~twenty-four (~~24~~)~~ hours of the discovery by telephone~~,~~ (307) 777-7097 (STP) or (307) 777-7781 (spill response)~~7781, by electronic mail to http://deq.state.wy.us/, or by FAX to (307) 777-5973.~~ and by logging into the spill response database on the DEQ website. Owners and/or operators shall ~~present~~ submit a Corrective Action Plan (CAP) for product removal at sites where investigations under Section 24(b) indicate the presence of free product. Owners and/or operators shall remove free product to the maximum extent practicable as determined by the department. ~~In meeting the requirements of this section,~~ ~~o~~Owners and/or operators shall:

(i) Conduct free product removal in a manner that minimizes the spread of contamination into previously uncontaminated ~~zones~~ areas. ~~by using~~ Free product recovery and disposal techniques shall be appropriate ~~to~~ for the hydrogeologic conditions at the site.~~,~~ ~~and that~~ Techniques shall properly treat~~s,~~ and discharge~~s~~ or dispose~~s~~ of recovery by-products in compliance with applicable local, state, and federal regulations;

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

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

(iv) Prepare and submit to the department, within ~~forty-five (~~45~~)~~ days ~~after~~ of confirming a release, a free product removal ~~report~~ plan that provides at least the following information:

(A) The name of the person(s) 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 or not 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) The steps that have been or are being taken to obtain necessary permits for any discharge; and

(G) The disposition of the recovered free product.

(e) *Investigation for Soil and Groundwater Cleanup*. ~~In order~~ ~~t~~To determine the full extent and location of soil~~s~~ and/or groundwater contaminated by ~~the~~ a release, ~~and the presence and concentrations of dissolved product contamination in the groundwater,~~ owners and/or operators shall conduct a subsurface investigation. ~~of the release,~~ ~~t~~The release site~~,~~ and the surrounding area possibly affected by the release shall be investigated to determine if any of the following conditions exist:

(i) ~~There is evidence that~~ Existing groundwater wells have been affected by the release; ~~(e.g., as found during release confirmation or previous corrective action measures);~~

(ii) Free product is present requiring recovery; ~~discovered on the groundwater table in compliance with this section;~~

(iii) ~~There is evidence that~~ ~~c~~Contaminated soils are ~~may be~~ in contact with groundwater; and/or ~~(e.g., as found during the initial response measures or investigations required under this section);~~

(iv) ~~The department requests an investigation based on the~~ There are potential threats ~~of contaminated soil or groundwater on~~ to nearby surface water and/or groundwater resources.~~;~~

(v) Owners and/or operators shall submit the information collected under this ~~s~~Section to the department in accordance with a schedule established by the Solid and Hazardous Waste ~~a~~Administrator.

(f) *Corrective Action Plan (CAP)*.

(i) Any owner and/or operator, the department, or other person, taking a corrective action required by this regulation, shall restore the environment to a condition and quality consistent with the standards established in Sections 38 and 39.

(ii) At any point after reviewing the information submitted in compliance with this Section, ~~Sections 24 through 26~~, the department may require owners and/or operators to submit

additional information~~,~~ or ~~to~~ develop and submit a CAP for responding to contaminated soils and groundwater. If a CAP ~~plan~~ is required, owners and/or operators shall submit the CAP ~~plan~~ according to a schedule and format established by the department. Alternatively, owners and/or operators may, after fulfilling the requirements of this Section, ~~Sections 24 through 26,~~ choose to submit a CAP for responding to contaminated soil and groundwater. In either case, owners and/or operators are responsible for submitting a plan that provides ~~for~~ adequate protection of human health and/or restoration of the environment, as determined by the department, and shall modify their plan as necessary to meet the requirements of this regulation.

(A) The department will authorize and issue applicable department permits for the CAP only after ensuring that implementation of the plan will adequately protect human health, safety, and the environment, and the plan is in compliance with other applicable department rules and regulations. In making this determination, the department will consider the following factors:

(I) The physical and chemical characteristics of the regulated substance, including its toxicity, persistence, and potential for migration;

(II) The hydrogeologic characteristics of the ~~facility~~ site and the surrounding area;

(III) The proximity, quality, and current and future uses of nearby surface water and groundwater;

(IV) The potential effects of residual contamination on nearby surface water and groundwater;

(V) An exposure assessment; and

(VI) Any information assembled in compliance with this ~~s~~Section.

(B) Upon authorization and issuance of applicable department permits for the CAP, owners and/or operators shall implement the plan, including modifications to the plan made by the department. ~~They~~ Owners and/or operators shall monitor, evaluate, and report the results of implementing the plan in

accordance with the schedule and a format established by the department.

(C) ~~Owners and/or operators may,~~ ~~i~~In the interest of minimizing environmental contamination, remediating an imminent health and/or safety hazard, and/or promoting more effective cleanup, owners and/or operators may begin ~~cleanup~~ remediation of soil and groundwater before the CAP is authorized and permitted by the department provided ~~that~~ they:

(I) Notify the department of their intention to begin cleanup;

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

(III) Incorporate these self-initiated cleanup measures in the CAP that is submitted to the department for authorization and permitting.

(g) *Voluntary Remediation Program.* Owners and/or operators not eligible for the state Corrective Action Account may be eligible to enter the Solid and Hazardous Waste Voluntary Remediation Program.

Section 25. Owners and/or Operators Eligible for the State Corrective Action Account. ~~Program.~~

(a) *Initial Response*. ~~Upon~~ Within 24 hours of release confirmation ~~of a release~~ in accordance with Section 20 or after a release from the storage tank system is identified in any other manner, owners and/or operators shall perform the following initial response actions: ~~within twenty-four (24) hours of a release:~~

(i) ~~Orally~~ ~~r~~Report the release to the department ~~(e.g.,~~ by telephone~~,~~ (307)~~–~~777-7097 (STP) and (307) 777-7781 (spill response) ~~7781, 24 hour telephone), or by electronic mail to http://deq.state.wy.us/, by FAX to, (307-777-5973, 24 hour FAX machine); ~~and by logging into the spill response database on the DEQ website;

(ii) Take immediate action to prevent any further release of the regulated substance into the environment; and

(iii) Orally notify the department immediately of any fire, explosion, or vapor hazards. The department shall begin resolving these hazards as soon as practicable.

(b) *Initial Abatement Measures and Site Check*. Owners and/or operators shall ~~accomplish~~ complete the following abatement measures:

(i) Remove as much of the regulated substance from the storage tank system as is necessary to prevent further release to the environment; and

(ii) Visually inspect any above ground or exposed below ground releases and prevent further migration of the released substance into surrounding soils, ~~and~~ groundwater, and/or surface waters~~;~~.

(c) *Site Characterization and Corrective Action.* The department will prioritize the site pursuant to Section ~~28~~27 after completion of initial abatement measures. The department will also collect sufficient data ~~on affected groundwater sufficient to classify~~ for classification of the affected groundwater under Chapter 8, Wyoming Water Quality Rules and Regulations.

Section 26. Public Participation.

(a) *Notice Provided.*~~:~~ Whenever a confirmed release from a~~n~~ storage tank system occurs that requires a CAP for soil or groundwater remediation, the department shall provide notice to ~~the public by means designed to reach those members of~~ the public directly affected by the release and the planned corrective action. This notice may include, but is not limited to, public notice in local newspapers, block advertisements, public service announcements, or personal contacts by ~~field~~ staff. All public notices shall be posted to the DEQ website.

(b) ~~*Content of Notices*~~ *Notice Content.*~~:~~ All public notices issued under this ~~c~~Chapter shall contain the following minimum information:

(i) Name and address of the facility where the release occurred;

(ii) Name and address of the owner and/or operator;

(iii) Name and address of the department;

(iv) Name and phone number of the department representative where additional information can be obtained;

(v) Type and estimated volume of the release, if known; and

(vi) The Class of Use of all affected groundwater as determined under Chapter 8, Wyoming Water Quality Rules and Regulations.

(c) *Information Requests.* Upon request, the department shall provide or make available information concerning the nature of the release and corrective actions planned or taken.

(d) *Public Meetings.* A public meeting may be held to consider comments on a proposed CAP or at the termination of a CAP if the Solid and Hazardous Waste Division ~~a~~Administrator determines there is sufficient public interest or whenever such a meeting may clarify issues involved in a CAP.

Section 27. Corrective Action Prioritization Ranking System.

(a) *Criteria.* This ranking system establishes criteria for use by the department in determining priorities for conducting state corrective actions at leaking storage tank sites. The ranking is based upon the following primary factors:

(i) Degree of immediate adverse health exposure and/or safety hazards to people in nearby occupied buildings or to public utilities;~~.~~

(ii) Water quality protection;~~.~~

(iii) Potential for contaminant(s) migration; and~~.~~

(iv) Ecological protection.

(b) *Scoring.* The scoring system provides that the sites with the highest scores shall be of the highest priority in conducting department corrective actions. The following listing and point values compose the department's corrective action prioritization ranking system. Points will be applied to each site, as appropriate, depending upon local circumstances. The total score for each leaking storage tank site is the sum of all applicable categories in Table 2. ~~as follows:~~

~~TABLE 32~~
~~Corrective Action Scoring~~

~~Free product on the surface of either surface water or groundwater~~	~~Point Value~~
~~Presence of free product unknown, but possible~~	~~100~~
~~Presence of free product unknown, but probable~~	~~225~~
~~Free product in any amount, on groundwater~~	~~350~~
~~Water contaminated by dissolved chemical substances~~	~~Point Value~~
~~Greater than ten (10) times the MCL for drinking water or the Wyoming DWEL~~	~~300~~
~~Less than ten (10) times or equal to the MCL for drinking water or the Wyoming DWEL~~	~~100~~
~~The above two (2) values shall be doubled if measurements were made in wells used for drinking water.~~	
~~Potential to contaminate groundwater~~	~~Point Value~~
~~Unknown, but probable~~	~~175~~
~~Unknown, but possible~~	~~75~~
~~Soil Ttype~~	~~Point Value~~

~~TABLE 32~~ ~~Corrective Action Scoring~~	
~~High permeability (coarse gravel, silty sands, etc.)~~	~~150~~
~~Moderate permeability (loamy sands, silty clays, etc.)~~	~~75~~
~~Low permeability (clays)~~	~~25~~
~~Soil Ccontamination~~	~~Point Value~~
~~Heavily contaminated soils:. Fails paint filter test or produces a free product layer when mixed with water and allowed to settle for ten (10) minutes~~	~~150~~
~~Moderately contaminated soils:. Observed greasy feel, strong petroleum odor, black discoloration~~	~~80~~
~~Slightly contaminated soils:. Any visible contamination or weak petroleum odor~~	~~40~~

TABLE 2
WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
STORAGE TANK PROGRAM
CONTAMINATED SITE EVALUATION WORKSHEET

Facility ID, Site Name _____
Location _____
Staff Name _____
Date _____

Score 1-5: Score only one line under each criterion. Total = Score X Weight

CONTAMINANT CRITERIA	**SCORE**	**WEIGHT**	**TOTAL**
Toxicity/Hazard			
1 Unrefined petroleum, produced water, dry solids		1	
3 Refined petroleum, liquid commercial chemical products		2	
5 Explosive materials or hazardous wastes (corrosive, reactive, toxic, flammable		3	
Comments (consider volumes)			
Concentration – Soil			
1 Greater than the soil cleanup levels		1	

TABLE 2 (Continued)	SCORE	WEIGHT	TOTAL
3 Ten times greater than soil cleanup levels		2	
5 Free product (saturated soil or waste material)		3	
Comments (consider volumes)			
Concentration – Groundwater			
1 Greater than MCLs or DWELS		1	
3 MCLs/DWELS to 10X MCLs/DWELS or unknown		2	
5 Greater than 10X MCLs/DWELS or free product		3	
Comments			
Hazardous Vapors and Particulates			
1 Noticeable odors		1	
3 Known vapor emitting volatiles present		2	
5 Explosive conditions		3	
Comments			
ENVIRONMENTAL CRITERIA			
Depth to Groundwater			
1 Greater than 100 feet		1	
3 Less than 100 feet, but greater than 20 feet		2	
5 Less than 20 feet		3	
Comments			
Proximity to Surface Water			
1 Greater than 1 mile		1	
3 Greater than ¼ mile, but less than 1 mile		2	
5 Features present within ¼ mile		3	
Comments			
HUMAN EXPOSURE CRITERIA			
Proximity to Drinking Water Source			
1 Greater than 1 mile		1	
3 Greater than ¼ mile, but less than 1 mile		2	
5 Features present within ¼ mile		3	
Comments			
Land Use			
1 Open range or vacant and greater than 1 mile to a residence		1	
3 Commercial/industrial/recreational use or less than 1 mile to residence		2	
5 Residence present or within ¼ mile		3	
Comments			
ECOLOGICAL EXPOSURE CRITERIA			
Important/Sensitive Habitats or Threatened or Endangered Species			

1 I/S habitats OR T/E species greater than 1 mile		1	
TABLE 2 (Continued)	**SCORE**	**WEIGHT**	**TOTAL**
3 I/S habitats or T/E species greater than ¼ mile, but less than 1 mile		2	
5 I/S habitats or T/E species within ¼ mile		3	
Comments			
SITE EVALUTION SUMMARY – TOTAL SCORE			

Section 28. Termination of Corrective Actions. ~~Corrective actions that have not met the applicable standard(s) in Sections 39 and 40 may be stopped if the administrator determines that continued operation of those systems is not technically and economically feasible~~.

(a) Corrective actions that have not met the applicable standard(s) in Part J may be stopped if the Solid and Hazardous Waste Administrator determines that continued operation of remedial methods (including mechanical systems, monitored natural attenuation, or other remediation technologies) is not technically and economically feasible. If a technically and economically feasible remediation alternative becomes available or impacts are found that pose a threat to human health and/or the environment, active remediation may be resumed.

(b) The department shall provide public notice in accordance with Section 26 if it is determined that an approved CAP will not achieve the established cleanup levels and termination of the CAP is under consideration.

(c) If 10 years of contaminated site fees have been paid and the fees have lapsed, annual contaminated site fees will be due from the site owner and/or operator in accordance with W.S. 35-11-1424(e) when active remediation resumes.

PART F

MINIMUM SITE ASSESSMENTS (MSAs)

Section 29. MSA Requirements.

(a) *When an MSA is Required.* MSAs are ~~utilized~~ used to determine ~~whether~~ if a regulated substance has been released from a storage tank system and, if so, to determine if soil and/or ~~ground water~~ groundwater contamination is present in excess ~~exceedance~~ of applicable standards. The MSA results will determine the site's eligibility for the ~~c~~Corrective ~~a~~Action Account. ~~fund.~~ MSAs are required when any of the following conditions are met:

~~(i) Unless the site is already listed as a contaminated site, all owners and/or operators of regulated ASTs shall, by October 1, 2007, provide a MSA to the department. This MSA shall be done at the owners and/or operators expense and shall meet all of the requirements of this part~~

(i~~i~~) Unless the site is already listed as a contaminated site, all ~~UST~~ tank owners and/or operators ~~which~~ that have not previously performed an MSA shall perform an MSA. This MSA shall be performed at the site owner's and/or operator's expense no sooner than ~~eighteen (~~18~~)~~ years, and no later than ~~twenty (~~20~~)~~ years, after the tanks were installed.~~, at the owners and/or operators expense.~~ This requirement applies to all USTs installed after September 22, 1988, and to all regulated ASTs.

(ii~~i~~) ~~After the effective date of this chapter, o~~ Owners and/or operators who ~~remove~~ permanently close or change the service of storage tanks without obtaining the required department authorization and inspection shall complete an MSA at their own expense ~~and~~ within ~~forty-five (~~45~~)~~ days of the tank closure or change in service. ~~removal.~~ To obtain the required department inspection, the owner and/or operator shall notify the department 30 days prior to tank closure or change in service activities. If tank closure or change in service activities are not sufficient for department personnel to characterize the subsurface conditions at the site, the owner and/or operator shall complete an MSA at his/her expense. The department will assign a priority ranking in accordance with Section 27 based on the results of the inspection or owner's and/or operator's MSA.

(~~iv~~iii) ~~After the effective date of this chapter,~~ ~~o~~Owners and/or operators who change ~~the use of~~ a regulated tank to a non-regulated use in accordance with Section 31, ~~of this chapter,~~ or change ~~the use of~~ a non-regulated tank to a regulated use shall complete an MSA at their own expense regardless of whether or not the site is listed as a contaminated site. The MSA shall be completed ~~and~~ within ~~forty-five (~~45~~)~~ days of the change of use.

(iv) Any owner and/or operator of a storage tank system ~~which was~~ abandoned prior to the program ~~and who~~ that now elects to participate in the state program~~,~~ shall:

(A) Provide written documentation that the site actually had a program-eligible storage tank system at some time;

(B) In the case where the storage tank was an AST, provide documentary evidence that the storage tank was used to dispense gasoline ~~and~~ or diesel fuels to the public;

(C) Complete an MSA in accordance with this ~~p~~Part and prove that the site has been contaminated by a program-eligible storage tank system; and

(D) Pay one year's storage tank fee for all storage tanks on the site at the time of the initial site registration. If all ~~of the~~ tanks were removed and it is not possible to determine how many storage tanks were on the site, pay the fee for one tank.

~~(vi) Owners of former storage tank sites that are not on the contaminated site list shall perform a MSA any time that soil and/or ground water contamination is discovered on the property or adjacent properties.~~

(v~~ii~~) Unless the site is already listed as a contaminated site, ~~A~~ an MSA shall be ~~accomplished~~ completed by ~~an~~ the owner and/or operator, in accordance with this Part, before permanently closing a storage tank in place. ~~in accordance with the procedures contained in this part.~~

(vi) When a storage tank system is temporarily closed for more than 12 months, the owner and/or operator shall complete

a minimum site assessment in accordance with this Section unless the site is already listed as a contaminated site or a time extension has been granted, in writing, by the department.

(b) *MSA Work Plan.* At least ~~thirty (~~30~~)~~ days prior to performing an MSA, the owner and/or operator shall submit a Work Plan to the appropriate ~~Water Quality Division~~ Storage Tank Program (STP) District Office for review and approval. The STP ~~department~~ will review the ~~w~~Work ~~p~~Plan to ~~insure~~ ensure ~~that~~ the proposed MSA will meet the requirements of this ~~p~~Part. At a minimum, ~~T~~the Work Plan shall include ~~at least~~ the following: ~~information:~~

(i) Facility name, address and identification number, if applicable;~~.~~

(ii) Name, address and telephone number of person(s) who will be conducting the MSA;

(iii) Number of storage tanks, whether they are ASTs or USTs, and how many are regulated versus unregulated;

(iv) Description of MSA methodology to be used ~~utilized~~ for storage tanks and connected piping, including borehole and/or soil excavation installation and ~~closure~~ abandonment, ~~and~~ temporary monitoring well installation and abandonment, ~~closure,~~ equipment decontamination, and contaminated soil and groundwater ~~ground water~~ disposal;

(v) Soil and ~~ground water~~ Groundwater Sampling and Analysis Plan, including proposed sample collection and shipment protocols and analytical methods;~~. ;~~

(vi) A plan map showing the location of property lines, drainages, buildings, tanks, connected piping, and proposed boreholes/monitoring wells and/or soil excavations. All maps shall be to scale and provide a north arrow; and~~.~~

(vii) Proposed construction for any permanent monitoring wells being installed. Well construction shall be approved by the STP.

(c) *MSA ~~Performance and Information~~ Completion Requirements.*

(i) The MSA shall be inclusive for all storage tanks, associated piping, and dispensers located on ~~a~~ the site.

(ii) MSAs for Storage Tanks.

(A) The MSA for storage tanks shall consist of boreholes and/or soil excavations ~~accomplished~~ completed within ~~five (5)~~ horizontal feet of the UST basin or AST secondary containment structure. ~~For USTs, these boreholes/ soil excavations shall extend to a minimum of three (3) feet below the bottom of the tank. For ASTs, the boreholes or soil excavations shall extend to a minimum of fifteen (15) feet below the bottom of the AST. USTs with secondary containment shall have the above distances measured from the outside and bottom of the secondary containment.~~

(B) To the extent possible, the boreholes~~/~~ and/or soil excavations shall surround the tank area and provide an adequate representation of any potential contamination that may have been released from the storage tank system(s). The total number and locations of the boreholes or soil excavations will vary ~~dependant upon~~ depending on the number of storage tanks and the total storage tank capacity at ~~any~~ the location. The number and location of the boreholes shall be provided in the Work Plan and approved by the District Office reviewing the Work Plan. In addition to the soil borings/excavations, any site that is permanently closing by abandoning USTs in place or removing ASTs shall install at least three temporary groundwater monitoring wells. The wells shall be drilled at least 5 feet into groundwater or 40 feet deep, whichever comes first. The location, depth, and exact number of wells to be installed shall be determined by actual site conditions and construction requirements for monitoring wells. The wells may be abandoned after sampling. This requirement is intended to provide data on the condition of the groundwater at the site and allow the STP to evaluate site closure without further work.

(C) ~~Whenever a groundwater table is encountered, the depth of the borehole or soil excavation shall be accomplished to a depth necessary to provide for the collection of a groundwater sample.~~ Whenever groundwater is encountered in a borehole or excavation, a groundwater sample shall be collected for laboratory analysis. If groundwater is encountered in more

than one borehole or excavation, up to three groundwater samples shall be collected; one sample from each borehole or excavation.

(iii) MSAs for Connected Piping and ~~d~~Dispensers. The MSA for connected piping and dispensers shall consist of boreholes or soil excavations ~~accomplished~~ completed within ~~three (3)~~ horizontal feet of the piping or dispenser. ~~and shall extend to a minimum of three (3) feet below the bottom of the piping. For dispensers, boreholes or soil excavations shall extend to ten (10) feet below the bottom of the dispenser sump.~~ The total number and locations of the boreholes or soil excavations will vary ~~dependant upon~~ depending on the length of the piping and the number of dispensers. If the dispenser is located less than 20 feet from the storage tank(s), one borehole or soil excavation shall be completed at the dispenser. At sites where the dispenser is located more than 20 feet from the storage tank(s), a borehole or soil excavation shall be completed at the dispenser and every 20 feet along the piping from the dispenser to the storage tank(s).

(iv) Borehole~~/~~ or Soil Excavation Completion Requirements.

(A) Either borehole drilling or soil excavation are acceptable techniques for accomplishing the MSA as long as the results meet the purpose of the MSA in this Part. ~~(a) above.~~ The ~~particular~~ MSA technique shall be proposed in the ~~w~~Work ~~p~~Plan for review and approval by the STP. ~~department.~~

(B) ~~For boreholes, at least one borehole shall be advanced to the ground water table or a maximum of thirty (30) feet below ground surface, whichever is first.~~ Boreholes or soil excavations shall be completed to a depth of 5 feet below the bottom of a UST and 5 feet below ground surface of an AST. Boreholes or excavations shall extend to a depth of 5 feet below the bottom of the piping and 5 feet below the bottom of dispenser sumps. ~~At least one borehole shall be completed as monitor well whenever groundwater is encountered during the drilling. For soil excavations, the maximum excavation depth shall be fifteen (15) feet below ground surface.~~

(C) An accurate log of subsurface conditions shall be provided for all boreholes, wells, and/or soil excavations. This documentation shall be provided by a person

qualified and experienced to describe soils based on the Unified Soil Classification System.

(D) All boreholes and temporary wells shall be abandoned in accordance with the approved ~~w~~Work ~~p~~Plan. ~~Shallow b~~Boreholes that do not penetrate the ~~ground water~~ groundwater table may be abandoned with ~~uncontaminated~~ drill cuttings to within ~~two (~~2~~)~~ feet of the surface. The upper ~~two (~~2~~)~~ feet of the borehole shall consist of a hydrated bentonite plug. ~~All other b~~Boreholes or wells that encounter groundwater shall be abandoned with a bentonite slurry from the bottom of the borehole to the ground surface completion. ~~up.~~

(E) Soil excavations shall be ~~closed~~ abandoned in accordance with the approved ~~w~~Work ~~p~~Plan. Soils may be returned to the excavation with approval from the STP project manager.

~~(v) Monitor Wells.~~

~~(A) All boreholes that penetrate the ground water table shall be completed as monitor wells or abandoned in accordance with this part and the approved work plan.~~

~~(B) Any monitor wells installed as part of a MSA are exempt from the requirements of Chapter 11, Part G, Wyoming Water Quality Rules and Regulations.~~

~~(C) All monitor wells shall be constructed in accordance with the approved work plan and the issued State Engineer's permit. Monitor wells shall be capable of providing a representative sample of formation ground water for chemical analysis.~~

~~(D) All monitor wells shall be abandoned in accordance with the approved work plan.~~

(v~~i~~) Soil Sampling.

(A) All borehole and/or soil excavation samples shall be collected in a manner ~~to~~ that ensures ~~that~~ the ~~soil~~ samples ~~collected is~~ are representative of the in-place soil at the sampling location. Soil samples shall be submitted to an STP-approved laboratory (A2LA or NELAP certification required; refer to STP website for current list of approved laboratories).

(B) Based on field instrument measurements, the most heavily contaminated soil sample ~~will~~ shall be properly packaged and submitted to an STP-approved analytical ~~chemical~~ laboratory for analysis. If field instrument measurements do not indicate a contaminated soil layer, the soil sample submitted to the laboratory shall be from the bottom of the borehole or excavation. ~~three (3) feet below the base of the storage tank or the connected piping and dispenser.~~

(vi~~i~~) ~~Ground water~~ Groundwater Sampling.

(A) ~~Ground water~~ Groundwater samples shall be collected in accordance with the approved ~~w~~Work ~~p~~Plan and in a manner that ensures ~~that~~ the samples are representative of the in-place groundwater formation. ~~ground water.~~

(B) All ~~ground water~~ groundwater samples shall be properly preserved and packaged prior to ~~submitting~~ submission to ~~the~~ an STP-approved analytical laboratory (A2LA or NELAP certification required; refer to STP website for current list of approved laboratories).

(d) *Documented ~~c~~Contamination*. ~~Any~~ If contamination is documented during this MSA process and the storage tank system is currently in use, the site owner and/or operator shall implement the requirements in Part E. ~~requires the owner of the contaminated site and/or the owner and/or operator of the storage tanks to implement Part E of this chapter, if the storage tank system is currently in use.~~

(e) *MSA Report.* Within ~~forty-five (~~45~~)~~ days after the completion of the MSA, the owner and/or operator shall submit ~~two (2) copies~~ one copy of ~~a~~ the MSA summary report ~~of the MSA~~ to the appropriate STP District Office for review and approval. ~~department on a form provided by the department or a consultant's~~ At a minimum, the report ~~which at a minimum includes~~ shall include the following: ~~information:~~

(i) Facility name, address and ID number~~,~~; owner's name and address; and name of person(s) or company performing the MSA;

(ii) Date assessment was ~~accomplished~~ completed;

(iii) Storage tank(s) information, including tank number, type (AST or UST), capacity, regulated substance stored, and depth to ~~top and~~ bottom of tank(s);

(iv) Borehole, temporary well, and/or soil excavation information, including borehole~~/~~, well, and/or soil excavation identification, total depth, depth to ~~ground water~~ groundwater, and description of soils and/or ~~ground water~~ groundwater;

(v) Discussion of any contamination noting depths encountered or lack of contamination discovered;

(vi) All analytical results and field measurements;~~.~~

(vii) Description of temporary monitoring well installations; and

(viii) Plan map ~~of~~ showing the location of the following: ~~indicating~~ structures, drainages, property lines, ~~location of~~ boreholes or soil excavations, monitoring wells, tank(s), piping, and dispensing pumps. Drawings shall include title, north arrow, and scale.~~;~~

~~The summary report shall be submitted to the appropriate Water Quality Division Storage Tank Program District Office for review and approval.~~

PART G

~~STORAGE TANK SYSTEMS:~~ OUT-OF-SERVICE TANK SYSTEMS AND CLOSURE~~S~~

Section 30. Temporary Closure.

(a) *General Requirements.* When a~~n~~ storage tank system is temporarily closed, owners and/or operators shall: ~~continue operation and maintenance of CP systems in accordance with Section 11. Owners and/or operators shall continue release detection in accordance with Part D as long as the tank contains more than one inch of regulated substance at the measuring point directly under the fill tube. Parts E and F shall be complied with if a release is suspected or confirmed.~~

(i) Notify the department within 30 days of placing the tanks in temporarily out-of-use status;

(ii) Continue operation and maintenance of corrosion protection in accordance with Section 11 for USTs and Part I for ASTs;

(iii) Continue release detection and release detection operation and maintenance testing and inspections in accordance with Parts C, D, I, and M;

(iv) Comply with Parts E and F ~~shall be complied with~~ if a release is suspected or confirmed;~~.~~ and

(v) Provide licensed Class A and B Operators in accordance with Section 46.

(vi) Release detection and release detection operation and maintenance testing and inspections in Parts C, D, and I are not required as long as the tank does not contain more than 1 inch of regulated substance at the measuring point directly under the fill tube.

(b) *Tanks Temporarily Closed for ~~Six (6)~~ 3 ~~m~~Months or ~~m~~More.* When a storage tank system is temporarily closed for ~~six (6)~~ 3 months or more, owners and/or operators shall ~~also~~ comply with the following requirements:

(i) All requirements in Section 30(a);

(ii) Leave vent piping open and functioning; ~~and~~

(iii) Drain, cap, and secure all other connected piping, pumps, manways, and ancillary equipment; and

(iv~~ii~~) Continue to pay the annual tank fee and maintain financial responsibility pursuant to Part N. ~~Chapter 19, Wyoming Water Quality Rules and Regulations, Financial Responsibility for USTs.~~

(c) ~~*Three (3) years or more.*~~ *Tanks Temporarily Closed for 12 Months or More.* When a storage tank system is temporarily closed for more than 12 months, ~~three (3) years,~~ the owner and/or operator shall complete a minimum site assessment in accordance with Section 29. Except tanks within operating fueling facilities, the tank shall be permanently closed in accordance with this Part not later than 12 months after the date on which the tank is placed in temporarily out-of-use status or July 1, 2018, whichever is later, unless a time extension is authorized in writing by the department.

Section 31. Permanent Closure and Changes In Service.

(a) *Notification.* At least ~~thirty (~~30~~)~~ days before beginning either permanent closure or changing a storage tank system to a non-regulated use under Section 31(b) or (c), owners and/or operators shall notify the department of their intent, unless such action is in response to corrective action. The required MSA shall be completed ~~The required permanent site closure or Minimum Site Assessment of the excavation zone under Section 29 shall be performed~~ after notifying the department but before work begins to permanently close the tank or change the tank system to a non-regulated use. ~~completion of the permanent closure or changing a storage tank system to a non-regulated use.~~

(b) *Permanent Closure.* To permanently close a UST or AST ~~storage tank~~ system, owners and/or operators shall empty and clean it by removing all liquids and accumulated sludges and perform~~ing~~ an MSA ~~Minimum Site Assessment~~ as defined in Section 29. All USTs taken out of service permanently shall also be removed from the ground or filled with an inert solid material. All USTs and ASTs taken out of service permanently shall be

managed in accordance with Solid Waste Rules and Regulations. The tank cleaning and closure procedures shall be properly conducted in accordance with one of the following industry standards or practices:

(i) API Recommended Practice 1604, as referenced in Section 2; ~~"Removal and Disposal of Used Underground Petroleum Storage Tanks";~~

(ii) API ~~Publication~~ Standard 2015, as referenced in Section 2; ~~"Cleaning Petroleum Storage Tanks";~~

(iii) API Recommended Practice 1631, as referenced in Section 2; ~~"Interior Lining of USTs";~~

(iv) API Recommended Practice 2016, as referenced in Section 2;

(~~iv~~) ~~The National Institute for Occupational Safety and Health "Criteria for a Recommended Standard *** Working in Confined Space";~~U.S. Department of Health, Education, and Welfare, Criteria for a Recommended Standard, Working in Confined Spaces, as referenced in Section 2; and/or ~~and,~~

(vi) NFPA Standard 326, as referenced in Section 2.

(v~~ii~~) Section 33 provides a process for evaluating and permitting designs or procedures ~~which~~ that deviate from recognized industry standards or practices.

(c) *Change of Service.* Before converting any regulated storage tank to store a non-regulated substance, owners and/or operators shall empty and clean the tank by removing all liquid and accumulated sludge in accordance with Section 31(b) ~~(i) through (v)~~ unless the non-regulated substance is ~~happens to be~~ the same as the regulated substance. Before converting any regulated storage tank to store a non-regulated substance, owners and/or operators shall conduct an MSA ~~Minimum Site Assessment~~ in accordance with Section 29. An MSA shall be performed at all sites, including known contaminated sites, where a tank is converted from a regulated use to a non-regulated use. ASTs and USTs converted to a use not regulated by the department shall be managed under the federal or local jurisdiction having authority for such non-regulated use.

(d) *Owners and/or Operators not Eligible for the Corrective Action Account.* If contaminated soils, contaminated groundwater, or free product as a liquid or vapor is discovered during the MSA, or by any other manner, owners and/or operators not eligible for use of the Corrective Action Account shall begin corrective action in accordance with Section 24.

(~~d~~e) *Records*.

(i) Results of the MSA ~~Minimum Site Assessments~~ required under this ~~s~~Section shall be submitted to the department within ~~ninety (~~90~~)~~ days of MSA completion.

(ii) Owners and/or operators shall maintain records that are capable of demonstrating compliance with closure requirements under this Part. The results of the excavation zone assessment shall be maintained for at least 3 years after completion of permanent closure or change-in-service in one of the following ways:

(A) By the owners and/or operators who took the tank system out of service;

(B) By the current owners and/or operators of the tank system site; or

(C) By mailing these records to the department only if they cannot be maintained at the closed facility.

Section 32. Applicability to Previously Closed or Abandoned Storage Tank Systems.

(a) Owners and/or operators with UST systems permanently closed after December 22, 1988, ~~and~~ or AST systems permanently closed after the date of these regulations~~,~~ shall comply with ~~the state requirements for closure by either removing the storage tank system from the ground or permanently closing it in place in accordance with~~ Section 31. ~~and 33.~~

(b) When directed by the Solid and Hazardous Waste ~~a~~Administrator, the owner and/or operator of a storage tank system or an owner of a site upon which such a system was located that was permanently closed before ~~*before*~~ the effective date of

these regulations shall complete an MSA ~~accomplish a Minimum Site Assessment~~ in accordance with Section 29. When directed by the Solid and Hazardous Waste ~~a~~Administrator, abandoned storage tank systems shall be permanently closed in accordance with Section~~s~~ 31. ~~and 33.~~ The Solid and Hazardous Waste ~~a~~ Administrator may take action under this ~~s~~Section if the department determines that releases from the storage tank system ~~may~~ pose a current or potential threat to human health and/or the environment. Owners and/or operators of UST systems permanently closed before December 22, 1988, shall have complied with ~~the practice of~~ API ~~Bulletin No.~~ Recommended Practice 1604, as referenced in Section 2. ~~Recommended Practice for Abandonment or Removal of Underground Tanks.~~

PART H

~~STORAGE TANK SYSTEMS:~~
TECHNOLOGY AND PROCEDURES NOT SPECIFICALLY AUTHORIZED

Section 33. New Technologies, Procedures, or Equipment.

(a) *General.* This ~~p~~Part is provided to encourage new technology, procedures, or equipment that are not specifically ~~specially~~ authorized~~,~~ and provide a process for evaluating and authorizing those that deviate from the regulations in this ~~c~~Chapter. The proposed use of technologies, systems, or processes not in compliance with these regulations will be authorized provided ~~that~~ they function or comply with the intent or purpose of this ~~c~~Chapter.

(~~a~~b) *Application Contents.* Each application for authorization to utilize new technology, systems, or processes under this ~~s~~Section shall be evaluated on a case-by-case basis using the best available scientific information. The following information shall be included with a written application to the department for review and authorization:

(i) Data obtained from a full scale, comparable installation or process ~~which~~ that demonstrates compliance with the intent or acceptability of the technology, or;

(ii) Data obtained from a pilot project operated under the design condition for a sufficient length of time to demonstrate the acceptability of the design, or;

(iii) Data obtained from a theoretical evaluation of the technology or procedure ~~which~~ that demonstrates a reasonable probability of compliance with the intent of this ~~c~~Chapter, and;

(iv) An evaluation of the flexibility of making corrective changes in the event the technology or process does not function as planned.

~~(b) *Pilot facility*. If an applicant wishes to construct a pilot facility, to demonstrate a particular technology or to generate the data necessary to prove the technology, a permit to construct under Chapter 3, Wyoming Water Quality Rules and Regulations shall be obtained prior to construction.~~

PART I

AST SYSTEMS

Section 34. Tanks Covered by this Part. This ~~p~~Part covers all ASTs that meet the requirements found in W.S. 35-11-1415(a)(xi). Regulated AST components are those from the fire valve to the tank including the tank and fire valve.

Section 35. Construction ~~r~~Requirements for AST Systems.

(a) *Tanks.* All tanks regulated by this ~~p~~Part, whether existing or new, shall be welded steel tanks. Bolted or riveted steel tanks or tanks made of any material other than steel shall not be used as a regulated AST. ~~after the effective date of these regulations. After the effective date of these regulations, no~~ A tank intended for use as a~~n~~ UST shall not be installed as an AST.

(b) *Secondary Containment.* All ASTs regulated under this ~~s~~Section shall be constructed with secondary containment equal to at least 110% of storage capacity of the largest single AST within the secondary containment wall. The owner and/or operator of any AST shall control runoff captured inside the secondary containment system and ~~insure~~ ensure that runoff is free of floating oils prior to discharge from the secondary containment structure. Secondary containment shall be constructed of materials that are:

(i) Fireproof; and

(ii) Compatible with the regulated substance stored.

(c) *Vehicle ~~i~~Impact ~~p~~Protection.* ~~All~~ ASTs ~~regulated under this section~~ shall be protected against vehicle impact by barriers. Barriers are required on any side of the AST subject to impact by a vehicle traveling on any surface accessible to the public. Vehicle impact protection is not required for tanks meeting UL-Standard 2085, as referenced in Section 2, if the manufacturer certifies that the tank provides vehicle impact protection. Barriers shall meet one of the following specifications:

(i) Guard posts constructed of concrete-filled steel no less than ~~four (~~4~~)~~ inches in diameter, ~~and concrete filled,~~

spaced not more than ~~four (4)~~ feet apart, and set not less than ~~three (3)~~ feet above ground in a concrete-filled footing. Footing shall be 15 inches minimum diameter and set into the ground a minimum of ~~three~~ 3 feet deep. Posts shall not be located less than ~~five (5)~~ feet from the tanks.

(ii) Concrete secondary containment walls that are ~~if the wall is~~ at least ~~five (5)~~ feet from the tanks;~~,~~ ~~and~~ extend~~s~~ at least ~~three (3)~~ feet above ground level on the outside of the containment wall; ~~structure,~~ and contain~~s~~ a minimum of two, 5/8-inch reinforcing rods placed in the concrete as a continuous band within ~~one~~ 1 foot of the top of the containment wall. ~~structure. Secondary containment structures constructed of concrete block, lightweight steel, or earth do not meet this requirement.~~ Concrete secondary containment structures ~~which~~ that do not meet this requirement may be approved by the department on a case-by-case basis.

(iii) Concrete barriers constructed to Department of Transportation ~~DOT~~ specifications for use as ~~a~~ barriers along highways. These barriers are commonly called “jersey barriers.”~~.~~

~~(iv) UL-2085 tanks do not require separate vehicle impact protection, provided that the manufacturer certifies that the tank provides vehicle impact protection.~~

(d) *Corrosion ~~p~~Protection.* ~~All~~ AST systems ~~regulated under this section~~ shall be protected against corrosion using one of the following methods:

(i) ~~A s~~Sacrificial/Galvanic ~~a~~Anode CP ~~s~~System. ~~Such~~ Sacrificial/galvanic anode CP systems shall be tested by a CP tester at least once every 3 years ~~checked annually~~ for proper operation. ~~by a CP tester, and shall~~ These systems shall be designed by a corrosion expert. Owners and/or operators of ~~all~~ ASTs protected by sacrificial/galvanic anode systems shall also comply with Section 11; ~~of this Chapter;~~

(ii) ~~An i~~Impressed ~~c~~Current CP ~~s~~System. ~~Such~~ Impressed current CP systems shall be checked at least once every 60 days ~~monthly~~ by the owner and/or operator and tested by a CP tester at least once every 3 years ~~annually~~ for proper operation. ~~by a CP tester, and~~ These systems shall be designed by a corrosion expert. Owners and/or operators of ~~all~~ ASTs protected by

impressed current systems shall also comply with Section 11; ~~of this Chapter;~~ or

(iii) Isolation. Isolat~~ion~~ing ~~of~~ the AST ~~S~~system from the ground by placing the tank on a bed of dry and freely draining gravel, at least ~~three (3)~~ inches thick, on a concrete floor within a concrete secondary containment system. Horizontal cylindrical tanks on saddles~~,~~ and tanks that meet the requirements of UL Standard 2085, as referenced in Section 2, meet this corrosion protection method. ~~are also isolated from ground contact.~~

(e) *Additional ~~r~~Requirements for ~~c~~Cathodic ~~p~~Protection*.

(i) Both sacrificial/galvanic anode and impressed current CP systems on ASTs shall be designed and installed with test stations to enable the owners and/or operators to monitor the operation of the CP system.

(ii) All CP systems installed on ASTs shall be designed by a corrosion expert. All CP systems shall be designed, ~~shall be~~ installed, inspected and maintained to meet or exceed one or more of the following industry standards or ~~and~~ practices:

(A) NACE Standard SP0193, ~~RP0193-2001~~, as referenced in Section 2; ~~"External Cathodic Protection of On-Grade Carbon Steel Storage Tank Bottoms";~~

(B) NACE Standard SP0285, ~~-2011~~ ~~RP0285-2002,~~ as referenced in Section 2; and/or ~~"Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems".; or~~

(C) API ~~Recommended Practice~~ Standard 651, as referenced in Section 2. ~~"Cathodic Protection of Aboveground Storage Tanks."~~

(f) *Overfill ~~p~~Protection.* ~~All~~ ASTs ~~regulated under this section~~ shall have overfill protection as follows:

(i) ~~s~~Systems shall sound an audible or visible alarm at the filling rack when the AST is 90% full;

(ii) ~~s~~Systems shall close valves and prevent overfilling the tank before the AST is 95% full; and

(iii) ~~For tanks larger than 100,000 gallons, the following shall also be provided: a~~ The system for tanks larger than 100,000 gallons shall sound a second audible and visible alarm at the filling rack when the AST is 95% full.

(g) *Spill ~~p~~Prevention.* ~~All~~ AST ~~S~~systems ~~regulated under this section~~ shall have fill lines protected with a double-check valve to prevent backflow from the tank and a self-closing fire valve, activated by a frangible, fusible link. Additionally, spill prevention equipment shall meet one of the following: ~~as follows:~~

~~(i) all fill lines shall be protected with a double check valve to prevent backflow from the tank and a self closing fire valve, activated by a frangible, fusible link~~

(i~~i~~) tThe fill lines shall be completely enclosed within the secondary containment system; or

(ii~~i~~) ~~e~~Each fill line shall have its own system to control spillage.

(h) *Connected Lines.* All underground pipe—lines connected to ASTs ~~regulated under this section~~ shall be non-corrodible, double-wall~~ed~~ lines equipped with working leak detection equipment. All aboveground lines shall be steel. All connections between aboveground lines and underground lines shall be made inside accessible leak-proof sumps. All new and replacement underground piping shall be double-wall and interstitially monitored.

(i) *Applicable Standards for n~~N~~ew ASTs.* All new AST systems ~~installed after the date of these regulations~~ ~~must~~ shall meet the requirements of one or more of the following industry standards or practices:

(i) Field Constructed Steel Tanks.

(A) API ~~Standard~~ Specification 12D, as referenced in Section 2; ~~"Specification for Field Welded Tanks for Storage of Production Liquids";~~

(B) API Standard 620, as referenced in Section 2; ~~"Design and Construction of Large, Welded Low-Pressure Storage Tanks";~~

(C) API Standard 650, as referenced in Section 2; ~~"Welded Steel Tank for Oil Storage";~~

(D) NFPA Standard 30, as referenced in Section 2; ~~"Flammable and Combustible Liquids Code";~~

(E) NFPA Standard 30A, as referenced in Section 2; ~~"Motor Vehicle Fueling Stations and Repair Garages Code";~~

(F) API Standard 653, as referenced in Section 2; ~~"Tank Inspection, Repair, Alteration, and Reconstruction";~~

(G) PEI ~~Recommended Practice~~ RP200, ~~2003~~ as referenced in Section 2; ~~"Recommended Practices of Installation of Aboveground Storage Systems for Motor Vehicle Fueling";~~ and/or

(H) Other standards approved by the department.

(ii) Shop Constructed Tanks.

(A) UL Standard 2085, as referenced in Section 2; ~~"Protected Aboveground Tanks for Flammable and Combustible Liquids;~~

(B) UL Standard 142, as referenced in Section 2; ~~"Standard for Aboveground Flammable and Combustible Liquid Storage Tanks"; or~~

(C) API Standard 650, as referenced in Section 2; ~~Appendix J, "Shop-Assembled Storage Tanks";~~

(D) NFPA Standard 30, as referenced in Section 2; ~~"Flammable and Combustible Liquids Code";~~

~~(E) ASME, "Boiler & Pressure Vessel Code, Section VIII, Division 1, Design and Fabrication of Pressure Vessels~~

(~~F~~E) API Standard 653, as referenced in Section 2; and/or ~~"Tank Inspection, Repair, Alteration, and Reconstruction";~~

(~~G~~F) PEI RP200, as referenced in Section 2. ~~Recommended Practice 200-2003, "Recommended Practices of Installation of Aboveground Storage Systems for Motor Vehicle Fueling";~~

(j) *ASTs ~~i~~Installed ~~a~~After the ~~e~~Effective ~~d~~Date of ~~t~~These ~~r~~Regulations.*

(i) ASTs ~~installed after the effective date of these regulations~~ shall have a foundation designed by a Registered Professional Engineer, licensed in the State of Wyoming. The foundation design shall provide positive drainage of water away from the base. ASTs located in areas subject to flooding shall be anchored to prevent flotation. ~~suitable~~ The foundation shall also meet one of the following:

(A) ~~c~~Capable of supporting the tank, when full, ~~of the regulated substance~~ without excessive differential settlement as defined in API Standard 653, as referenced in Section 2; or

(B) Designed per the manufacturer's recommendation. ~~The foundation shall be designed by a Registered Professional Engineer, licensed in the State of Wyoming. The foundation design shall provide positive drainage of water away from the base. ASTs located in areas subject to flooding shall be anchored to prevent flotation.~~

(ii) ~~All~~ ASTs installed or re-installed ~~after the date of these regulations~~ shall meet all ~~the~~ requirements of Part I before being placed in service.

(iii) ~~All~~ ASTs ~~installed after the effective date of these regulations~~ shall be placed on a release prevention barrier. The integrity of the barrier shall not deteriorate due to exposure to the elements or soil ~~in the presence of~~ contaminated by regulated substances. Double-wall vaulted tanks with an interstitial monitoring device shall meet all requirements for both secondary containment and the release detection barrier. The following are acceptable release prevention barriers:

(A) An impermeable geosynthetic clay liner with a permeability of 10^{-6} cm/sec or less;

(B) An impermeable geosynthetic liner installed in accordance with manufacturer's recommendations, such as a 60-mil unreinforced liner or a 40-mil reinforced liner, or a material of similar or more stringent specifications that is compatible with the regulated substance stored; or

(C) A double-bottom tank equipped with a leak detection system that will detect the presence of the regulated substance in the space between the bottoms.~~;~~ ~~or~~

(D) For tanks of less than 100,000 gallons capacity, an impermeable reinforced concrete slab.

~~(E) For double-walled, vaulted tanks with an interstitial monitoring device, the tank structure meets, by itself, all requirements for both the secondary containment and the release detection barrier.~~

(iv) ~~The~~ ~~o~~Owners and/or operators of ~~every~~ field constructed ASTs ~~installed after the effective date of these regulations~~ shall keep on file for the life of the tank, and make available to the department upon request, the following: ~~baseline data:~~

~~———~~(A) Floor and wall/shell thickness measurements;

~~———~~(B) Material certifications for all materials used in the construction of the AST system, including secondary containment and release prevention barriers; and

~~———~~(C) A report including welding procedures, welding certification reports, and any non-destructive testing performed on the AST.

~~———~~(v) ~~The~~ ~~o~~Owners and/or operators of ~~all~~ shop fabricated ASTs ~~installed after the effective date of these regulations~~ shall keep on file for the life of the tank, and make available to the department on request, the following:

~~———~~(A) ~~t~~The floor and wall/shell thickness measurement if a UL label does not exist on the tank; and

~~———~~(B) ~~m~~Material certifications for all materials used in the construction of the entire AST system.

~~———~~(vi) All exposed exterior surfaces of ~~all~~ field constructed ASTs ~~installed after the effective date of these regulations~~ shall be protected against corrosion. ~~For surfaces that are visible with the tank in operation,~~ ~~t~~This requirement may be met using field applied coatings~~,~~ ~~that are~~ compatible with the stored regulated substance, on visible tank surfaces.

~~———~~(vii) The completed installation of ~~all~~ metallic ~~F~~field ~~C~~constructed ASTs ~~installed after the effective date of these regulations~~ shall be inspected and certified by a certified API Standard 653, as referenced in Section 2, inspector.

~~———~~(viii) ~~The o~~Owners and/or operators of ~~any~~ shop fabricated ASTs shall keep on file for the life of the AST, and provide to the department on request, a report including welding procedures, welding certification reports, and any non-destructive testing performed on the AST.

~~———~~(ix) ~~The o~~Owners and/or operators of ~~every~~ ASTs ~~installed after the effective date of these regulations~~ shall provide a certificate of installation to the department that meets the requirements of Section 6(e). ~~of this chapter.~~

(k) ~~*Existing ASTs*~~*Labeling.* Tanks do not need to be UL labeled but ~~must~~ shall be designed, constructed, and tested to the approved standards. ~~Non-UL labeled tanks~~ ASTs shall bear an all-weather label with the following information: name and address of the tank manufacturer, year the tank was built or date of re-certification, capacity of the tank in U.S. gallons, and the tank construction or inspection standard used. ~~Existing ASTs must meet the substantial requirements of Section 35 no later than October 1, 2008.~~

(l) *Operational ~~v~~Venting.* Normal operation vents are required to prevent the development of vacuum or pressure within ASTs. Such vents shall be sized in accordance with IFC ~~3404.2.7.3~~ 5704.2.7.3, as referenced in Section 2, and shall be at least the size of the fill or withdrawal connection but not less than ~~1 and~~ 1-1/4 ~~(one and one-quarter)~~ inches inside diameter. Flammable liquid vents ~~must~~ shall terminate not less than ~~twelve (~~12~~)~~ feet above grade and ~~five (~~5~~)~~ feet from a building opening or property line. ~~They~~ Vents ~~must~~ shall discharge upward~~s~~ and outward. Operational venting shall comply,

as applicable, with: API Standard ~~–~~2000, as referenced in Section 2; NFPA Standard 30, as referenced in Section 2; UL Standard 142, as referenced in Section 2; and UL Standard 2085, as referenced in Section 2. ~~UL-142 and UL-2085 as applicable.~~

(m) *Emergency ~~v~~Venting.* ~~Each~~ ASTs shall be equipped with adequate additional emergency venting that will relieve excessive internal pressure caused by fire exposure. Emergency venting shall comply, as applicable, with: API Standard ~~–~~2000, as referenced in Section 2; NFPA Standard 30, as referenced in Section 2; UL Standard 142, as referenced in Section 2; and UL Standard 2085, as referenced in Section 2. ~~UL-142 and UL-2085 as applicable.~~

(n) *Warning ~~s~~Signs.* Signs, product placarding, ~~of product~~ and no smoking signs shall be properly posted in accordance with IFC ~~3404.2.3.2, 3404.2.3.2 and 3403.5~~ 5704.2.3.1, 5704.2.3.2, and 5703.5, all as referenced in Section 2.

(o) *Upgrading ~~e~~Existing ~~t~~Tanks.* ~~All~~ ~~e~~Existing ASTs that do not meet the requirements of this ~~c~~Chapter ~~must~~ shall be upgraded ~~no later than October 1, 2008,~~ to meet all ~~of the~~ requirements of this ~~c~~Chapter for new ASTs.

(p) *Fire Marshall ~~p~~Plan ~~r~~Review.* ~~All~~ Owners and/or operators of AST systems installed or modified after the date of these rules shall provide documentary proof to the department that the installation plans were ~~have been~~ reviewed and ~~passed~~ approved by the appropriate authorizing authority under the State Fire Marshall. ~~This "plan review" insures compliance with the applicable fire code as adopted into Wyoming State Statutes.~~

(q) *New Installation, Upgrade, and ~~m~~Modification ~~i~~Inspections.* AST system upgrades required by this ~~p~~Part, modifications, and new AST installations shall be inspected by the department. ~~Water Quality Division~~. Notification of new installations, upgrades, and modifications shall be made to the department in accordance with Section 9.

(r) *Access to ~~t~~Tank ~~t~~Tops.* ~~Access shall be provided to the top of all ASTs for inspection of venting, overfill equipment and other required equipment. Access shall be by way of permanently mounted, solidly constructed, non-combustible ladders, stairs, catwalks and platforms which comply with Occupational Safety and Health Administration standards.~~ ASTs greater than 6 feet in

height shall have a permanently mounted, solidly constructed, non-combustible ladder or stairs. The ladder or stairs shall provide access to the top of the AST for visual inspection of venting, overfill equipment, and other equipment requiring inspection. Other Occupational Safety and Health Administration requirements may apply.

~~(s) *Tank openings.* No AST regulated under this section, which is eleven (11) feet high or less, shall be connected to piping through any opening in a location other than the top. This means that all fill lines and product delivery lines must exit the tank through the top. All lines shall be equipped with anti-syphon devices. ASTs which are higher than eleven (11) feet high, and have penetrations near the bottom of the tank shall be equipped with internal fire valves on all openings which are not in the top of the tank.~~

(s) *Piping Connections.* All AST piping connections that are below normal liquid level shall have internal or external fire/impact valves located as close as possible to the tank shell. All lines shall be equipped with anti-siphon devices.

(t) *Emergency ~~s~~Switches.* Emergency disconnect switches shall be provided at prominent locations to stop the transfer of fuel to the fuel dispenser in the event of a spill or other emergency. These switches shall be within ~~one-hundred (~~100~~)~~ feet, but not less than ~~twenty (~~20~~)~~ feet, of dispensers. All emergency disconnect switches shall be labeled: "EMERGENCY FUEL SHUT OFF" using a durable, weatherproof~~,~~ sign that is prominently posted and visible from the dispensers. ~~with letters a minimum of 6" (six inches) high.~~

(u) *Direct ~~c~~Connection ~~b~~Between USTs and ASTs.* An~~y~~ existing UST directly connected to an AST ~~must~~ shall have an automatic tank gauging system. This system shall be equipped with an audible and visual alarm ~~system which~~ that will sound when the ~~underground tank~~ UST is 90% ~~95%~~ full or automatically shut off the flow to the UST when the UST is 95% full. This system shall be separate from any ~~control~~ system ~~which~~ that controls the filling of the UST. ~~After the effective date of these regulations no~~ ~~n~~New connections shall not be made between a~~ny~~ UST and an~~y~~ AST.

(v) *Repairs.* Repairs to ASTs shall be performed in accordance with Section 8. ~~of this chapter.~~

(w) *Submerged ASTs*. ~~After the effective date of these regulations, no~~ ASTs shall not be operated submerged in water.

(x) *Site Security*. ~~All~~ ASTs shall be protected from vandalism and unauthorized product release by security fencing. Security fences shall be galvanized wire mesh, no less than ~~six (6)~~ feet high, and topped with three ~~(3)~~ strands of barbed wire on an angled support bracket. Fencing shall be no less than ~~five (5)~~ feet from any of the tanks within the secondary containment structure. At facilities where wire fencing is not allowed by any other authority, the owner~~/~~ and/or operator may substitute other types of fencing at least ~~six (6)~~ feet high.

(y) *Compatibility.* AST systems shall be compatible with the substance stored. Owners and/or operators that intend to store biofuel blends in a new or existing AST system shall demonstrate compatibility of the biofuel blend with the AST system in accordance with Section 12.

(z) *Monthly Inspections.* Monthly inspections shall be completed in accordance with Section 13.

Section 36. AST Leak Detection Requirements.

(a) *Methods.* ~~No later than October 1, 2008, all~~ AST owners and/or operators ~~covered by this chapter~~ shall provide leak detection for the tank ~~itself~~ using one of the following methods:

(i) Automatic ~~t~~Tank ~~g~~Gauging. ~~All~~ AST owners and/or operators ~~of ASTs~~ using this method shall conduct ~~A~~automatic ~~T~~tank ~~G~~gauging in accordance with Section 16(c). ~~of this chapter. All a~~Automatic tank gauges used for ASTs ~~above ground tanks must~~ shall be third-party certified for use in an AST. ~~to meet this requirement in an above ground storage tank application.~~

(ii) Manual Tank Gauging. Owners and/or operators of ASTs with a capacity of less than 1,320 gallons may ~~be~~ monitor~~ed~~ the tanks using manual tank gauging in accordance with ~~as defined by~~ Section 15(a).

(iii) *Interstitial Monitoring.* Owners and/or operators of ASTs that were constructed under ~~the UL-2085 standard~~ UL Standard 2085, as referenced in Section 2, shall monitor the interstitial space between the inner tank and the

outer shell. Records shall be kept showing the date of the monitoring, the name of the person doing the monitoring and the monitoring results. Monthly sensor status printouts from an automatic system may be used to meet this requirement. ~~An automatic system that monitors this method shall be printed out monthly and kept for three (3) years;~~

(iv) Visual Monitoring of Tank Bottoms. Owners and/or operators of ASTs that are elevated above~~—~~ground, and ~~where~~ the entire surface of the tank is visible from beneath, shall monitor the tanks monthly for visible signs of leakage. Records of these inspections shall be made showing the date of the inspection, the name of the person doing the inspection, and any sign of leakage noted. Records shall be kept by the owner and/or operator for ~~three (3)~~ years.~~;~~

(v) Passive Acoustic Sensing. If passive acoustic sensing is used, the AST ~~Owners and/or operators of ASTs using this method~~ shall be equipped with a continuous sensing system. This system shall be capable of detecting a release of 0.2 gallons per hour or a release of 150 gallons per month with a probability of detection of 0.95 and a probability of false alarm of 0.05. All passive acoustic sensing systems shall produce a written record showing that the system is on and operable. All passive acoustic sensing systems shall be calibrated annually.~~;~~

(vi) Tracer Surveys. Tracer surveys shall be conducted on a monthly basis in accordance with Section 16(h). ~~of this Chapter; or~~

(vii) ~~Other~~Another method~~s~~ approved in accordance with Section 16(i~~j~~). ~~of this Chapter.~~

(b) *ASTs With a Capacity of 100,000 Gallons or ~~l~~Larger. ~~than 100,000 gGallons.~~* Owners and/or operators of ASTs with a capacity of 100,000 gallons or more shall follow the inspection requirements of API ~~s~~Standard 653, as referenced in Section 2.

(c) *SPCC Plans.* Owners and/or operators of any single AST or combination of more than one AST, with a capacity of 1,320 gallons or more, ~~must~~ shall have a Spill Prevention Control and Countermeasures (SPCC) ~~p~~Plan on file with the department. This is the same document required by the Environmental Protection Agency under 40 CFR 112 as referenced in Section 2.

(d) *Additional ~~r~~Requirements for ~~l~~Large ~~f~~Facilities*. Facilities with above ground capacity of 100,000 gallons or more shall provide at least one additional leak detection method beyond the requirements for Section 36(a). Such methods may be custom designed for the facility at the option of the owner and/or operator, or may be a second method named in Section 36(a). Department approval is required before implementing methods in compliance with this ~~s~~Section.

(e) *Inventory Control*. ~~All owners and/or operators of~~ ASTs shall ~~conduct~~ be monitored using inventory control in accordance with Section 16(a) unless the tank and all lines are isolated from ground contact and can be visually monitored, or the tank is isolated from ground contact and the connected underground piping is double-wall and interstitially monitored. ~~This does not meet the additional requirement imposed by Section 36(d).~~

(f) *Operator's Annual Inspection*. Owners and/or operators of ASTs shall conduct an annual inspection of all AST systems in accordance with Section 13(~~e~~g).

Section 37. Leak Detection Requirements for Underground Lines Connected to ASTs. Leak detection requirements for underground piping connected to ASTs shall be the same as those found in Section 14. Sump sensors shall be wired to shut down all pumps and dispensers in the event of an alarm. Containment sumps used for interstitial monitoring of piping shall be tested in accordance with Section 10(d).

~~(a) *Sump Sensors.* Owners and/or operators shall provide for leak detection using sump sensors to monitor the space between the double wall systems. Sump sensors shall be wired to shut down all pumps and dispensers in the event of an alarm. On an annual basis, the owners and/or operators shall trip all sump sensors and record that they shut down the pumps and dispensers as required; or~~

~~(b) *Automatic Line Leak Detectors.* Owners and/or operators shall provide pressurized piping and automatic line leak detectors. Pressurized piping shall meet all of the requirements found in Section 14(g)(i).~~

~~(c) *Suction Piping with single wall pipe.* Owners and/or operators shall not use suction systems with single walled pipe on AST Systems after October 1, 2008.~~

PART J

ENVIRONMENTAL RESTORATION STANDARDS FOR
LEAKING STORAGE TANK REMEDIATION ~~ACTIONS~~

Section 38. Soil Remediation. Soil remediation criteria shall be based on ~~the~~ evaluation of: 1) ~~two (2) aspects. The first aspect is~~ the potential to contaminate ~~existing~~ groundwater, ~~quality.~~ and 2) potential adverse impacts to public health. The potential to impact ~~G~~groundwater quality ~~impact will~~ shall be ~~accomplished~~ determined by evaluating the subsurface fate and transport characteristics of the regulated substance using ~~unique~~ site-specific soil conditions. If groundwater monitoring data conflict with fate and transport modeling estimates, the groundwater monitoring data shall be used. ~~Secondly, p~~Potential adverse public health impacts ~~will~~ shall be evaluated using an environmental risk assessment process for contaminated soil ingestion and inhalation.

Section 39. Water Quality Standards. If background concentrations of a constituent are higher than the protection standards presented in this Section, cleanup shall be completed to the background level. Cleanup shall only be completed for constituents from an eligible storage tank system.

(a) *Surface Water*. Storage ~~t~~Tank ~~p~~Program remediation actions shall protect surface water quality to the standards contained in Chapter 1, Wyoming Water Quality Rules and Regulations, Quality Standards for Wyoming Surface Waters.

(b) *Groundwater*. Storage ~~t~~Tank ~~p~~Program remediation actions shall: ~~protect:~~

(i) Protect ~~All~~ Class I, II, III, IV(a), IV(b) or Special A groundwater quality to the most stringent of the:

(A) ~~f~~Federal primary MCL contained in 40 CFR ~~136~~ 141, as referenced in Section 2; ~~as of the date of this chapter,~~;

(B) ~~w~~Water quality standards contained in this ~~s~~Section when there is no federal MCL for a substance; or

(C) ~~g~~Groundwater quality standards found in Chapter 8, Wyoming Water Quality Rules and Regulations, Quality Standards for Wyoming Groundwaters.

~~(D) cleanup of groundwater which is Class I groundwater by use, shall address contaminants in the groundwater which originated from the storage tanks system. Cleanup of parameters which are naturally occurring, or are from sources other than the storage tank system, which do not meet the standards for Class I groundwater shall not be accomplished.~~

(ii) Protect ~~All c~~Class VI groundwater to the groundwater quality standards found in Chapter 8, Wyoming Water Quality Rules and Regulations, Quality Standards for Wyoming Groundwaters.

(c) *Eligible Sources.* Groundwater remediation shall address contaminants that originated from an eligible storage tank system. Remediation of constituents that are naturally occurring or are from sources other than an eligible storage tank system shall not be completed, except as incidental and necessary to the remediation of the eligible contaminants.

(~~c~~d) *Free Product.* Whenever any free-phase liquid layer of a regulated substance is encountered in groundwater or floating on the groundwater surface with a thickness in excess of 0.05 inches, restoration shall begin as soon as possible to remove the regulated substance(s) and prevent contaminant migration into previously uncontaminated areas.

(~~d~~e) *Drinking Water Equivalent Levels*. ~~For those chemical substances where a~~ If an MCL does not exist and ~~where~~ there is no standard for a constituent in either Chapter 1 or 8, Wyoming Water Quality Rules and Regulations, the following procedures ~~will~~ shall be used to calculate a state Drinking Water Equivalent Level (DWEL). ~~Because storage tank remediation actions may require several years to complete and since groundwater quality in Wyoming shall be protected as a potential drinking water source(s), these c~~Calculations ~~will~~ shall be based on chronic exposure.

(i) Non-carcinogenic substances:

Equation 1:

$$DWEL = \frac{(RfD_O)(ABW)(HQ)}{(DWI)(AB)(FOE)}$$ ~~(Equation 1)~~

(ii) Carcinogenic substances:

Equation 2:

$$DWEL = \frac{(RISK)(ABW)(LIFE)}{(CPF_O)(DWI)(AB)(FOE)(DUR)}$$

~~(Equation 2)~~

where:~~:~~

DWEL = Drinking water equivalent level, mg/L.
RISK = Cancer risk for drinking water, (1×10^{-6}).
ABW = Average adult body weight over exposure period (70 kg).
CPF_o = Oral cancer potency factor $(mg/kg\text{-}day)^{-1}$; chemical specific.
RfD_o = Oral reference dose (mg/kg-day); chemical specific.
DWI = Adult drinking water intake, 2 L/day.
AB = Gastrointestinal absorption rate (1.0).
LIFE = Lifetime (70 years).
DUR = Duration of exposure (30 years).
FOE = Frequency of exposure, (350 days/365 days = 0.96).
HQ = Hazard quotient (1).

Values for oral toxicological reference doses (RfD_o) and/or cancer potency factors (CPF_o) ~~will~~ shall be obtained from current data in the U.S. Environmental Protection Agency's (EPA) Integrated Risk Information System (IRIS), the EPA Health Effects Assessment Summary Tables (HEAST) toxicity data sources, or the EPA Region IX Preliminary Remediation Goals Data Base. If an oral reference dose or cancer potency factor is not listed in the above data-base sources, the administrator shall ~~will~~ determine a state DWEL using the latest available toxicological data.

(~~e~~f) *Multiple Standards.* When more than one standard exists in Section 39 ~~the above sections~~ for any constituent, ~~parameter,~~ the most stringent standard shall be used.

Section 40. Soil Human Health Risk Assessment. ~~Calculations.~~

(a) *Introduction*. A risk assessment for potential human health impacts is required for storage tank remediation actions to evaluate the risk component from a release and to develop quantitative soil cleanup concentrations directly related to the environmental risk. The human health risk assessment model is based on existing EPA methodologies and exposure constant values. The routes of potential exposure to be considered are soil ingestion and inhalation ~~from volatile organic hydrocarbons and total petroleum hydrocarbons.~~ of substances released from regulated storage tank systems. A remedial action plan shall be submitted to the department for approval. The remedial action plan shall be approved by the department after it has been determined that the plan will adequately protect human health, safety, and the environment. In making this determination, the department shall consider the following factors, as appropriate:

(i) The physical and chemical characteristics of the released substance, including its toxicity, persistence, and potential for migration;

(ii) The hydrogeologic characteristics of the site and the surrounding area;

(iii) The proximity, quality, and current and future uses of nearby surface water and groundwater;

(iv) The potential effects of residual contamination on nearby surface water and groundwater;

(v) An exposure assessment; and

(vi) Any additional factors relevant to assessing risks to human health and the environment.

(b) *Risk Assessment Calculation Model*. ~~With the~~ Using soil ~~properties~~ property data collected during site investigation, ~~the subsurface investigation and/or extended remedial design investigation phases,~~ site-specific soil risk assessment calculations shall be completed ~~made~~ using equations in this ~~s~~Section. This model estimates chronic exposure(s) on a site-specific basis by combining an average exposure point concentration with reasonably conservative values for human intake and exposure duration. Thus, all site-specific soil parameters used to calculate risk assessment remedial concentrations at each site should reflect average or typical

site conditions. In addition to site-specific soil conditions and chemical compounds, default values have been established for other equation input parameters.

(i) Combined Oral Ingestion and Inhalation Exposures to Carcinogenic Contaminants in Residential Soil:

Equation 3:

$$C_s(mg/kg) = \frac{(RISK)(AT_c)}{EF\left[\frac{\{IFS_{adj}\}\{CPFo\}}{10^6 mg/kg} + \frac{\{INHF_{adj}\}\{CPF_i\}}{VF_s}\right]}$$ ~~(Equation 3)~~

(ii) Combined Oral Ingestion and Inhalation Exposures to Non-carcinogenic Contaminants in Residual Soil:

Equation 4:

$$C_s(mg/kg) = \frac{(HQ)(BW_c)(ED_c)(365/yr)}{(EF)(ED_c)\left[\frac{IRS_c}{(RfD_o)(10^6)} + \frac{(IRA_c)}{(RfD_i)(VF_s)}\right]}$$ ~~(Equation 4)~~

where:

Equation 5:

$$VF_s(m^3/kg) = (Q/C)\left[\frac{10^{-4}(m^2/cm^2)\sqrt{\pi(D_A)(T)}}{(2)(\rho_b)(D_A)}\right]$$ ~~(Equation 5)~~

~~and;~~ where:

Equation 6:

$$D_A = \frac{\{\theta_a^{10/3}\}\{D_i H'\} + \{\theta_w^{10/3}\}\{D_w\}}{n^2\{(\rho_b)(K_d) + \theta_w + (\theta_a)(H')\}}$$ ~~(Equation 6)~~

~~and;~~where:

C_s = Soil contaminant cleanup concentration, mg/kg.

RISK	=	Cancer risk for soil cleanup actions,_1 x 10^{-6}.
AT_c	=	Averaging time, carcinogens, 25,550 d.
EF	=	Exposure frequency, residential, 350 d.
IFS_{adj}	=	Ingestion factor, soil, 114 (mg-yr)/(kg-d).
CPF_o	=	Cancer potency factor, oral, chemical specific, $(mg/kg\text{-}d)^{-1}$.
CPF_i	=	Cancer potency factor, inhalation, chemical specific, $(mg/kg\text{-}d)^{-1}$.
$INHF_{adj}$	=	Inhalation factor, air, 11 (m^3-yr)/(kg-d).
VF_s	=	Volatilization factor, soil, m^3/kg.
HQ	=	Hazard quotient, 1
BW_c	=	Body weight, child, 15 kg.
ED_c	=	Exposure duration, child, 6 yrs.
IRS_c	=	Soil ingestion rate, child, 200 mg/d.
IRA_c	=	Soil inhalation rate, child, 10 m^3/d.
RfD_o	=	Reference dose, oral, mg/kg-d.
RfD_i	=	Reference dose, inhalation, mg/kg-d.
Q/C	=	Inverse of the mean concentration at the center of a 0.5 acre square source in Wyoming, 100.13 (g/m^2-s per kg/m^3).
D_A	=	Apparent diffusivity, cm^2/s.
D_i	=	Chemical diffusivity in air, cm^2/s, chemical specific.
D_w	=	Chemical diffusivity in water, cm^2/s, chemical specific.
T	=	Exposure interval, s, 9.5E08.
ρ_b	=	Soil density, g/cm^3, 1.5 or actual value.
ρ_s	=	Soil particle density, g/cm^3, 2.65.
Θ_a	=	Air filled soil porosity, L_{air}/L_{soil}—, 0.28 or, n - Θ_w
Θ_w	=	Water filled soil porosity, L_{water}/L_{soil}—, 0.15.
n	=	Total soil porosity, L_{pore}/L_{soil}, 0.43 or, 1 - (ρ_b/ρ_s).
H’	=	Dimensionless Henry’s Law ~~c~~Constant, H(41), chemical specific.
K_d	=	Soil-water partition coefficient cm^3/g, $K_{oc}f_{oc}$, chemical specific.
K_{oc}	=	Soil organic carbon-water partition coefficient, cm^3/g, chemical specific.
f_{oc}	=	Fraction organic carbon in soil, g/g, 0.001 or site specific value.

Values for oral toxicological reference doses (RfD_o) and/or oral cancer potency factors (CPF_o) are obtained from current data in the U.S. Environmental Protection Agency (EPA) Integrated Risk Information System (IRIS), the EPA Health Effects Assessment Summary Tables (HEAST), or the EPA Region IX Preliminary Remediation Goals Data Base. If an oral reference dose or cancer potency factor is not listed in the above database sources, the administrator will determine an acceptable soil cleanup concentration using the latest available toxicological information from other appropriate sources.

Section 41. Soil Environmental Fate and Transport Evaluation. A soil environmental fate and transport evaluation shall be completed. The evaluation shall estimate the potential for soil to contaminate groundwater at levels exceeding STP groundwater restoration standards.

(a) *Conceptual ~~o~~Organic ~~c~~Compound ~~f~~Fate and ~~t~~Transport ~~m~~Model.*

(i) The model is based on the following ~~set of~~ assumptions:

(A) A finite amount of soil contamination exists at variable depths beneath a leaking storage tank site. It may extend from the surface to below the groundwater table, or it may be confined to a discrete zone. There is an uppermost aquifer beneath the site ~~which~~ that is not adequately protected by an impermeable barrier between the contaminated soil and the aquifer. Percolating rainfall~~,~~ or snow melt~~,~~ moves through the contaminated soil, mobilizes some of the contamination as a leachate and carries the contamination towards the aquifer. A portion of the contamination remains strongly adsorbed to the soil. The portion of the contaminants that are not permanently adsorbed are available for biodegradation and a limited amount of leaching.

(B) The point of compliance for protecting groundwater quality is directly below the contaminated soils at the surface of the aquifer.

(C) The rate of leaching from the soil has reached a steady state.

(D) The soils beneath the leaking storage tank(s) represent the only source of contamination to the groundwater.

(E) Vapors emanating from the contaminants in the soil are moving *primarily* upwards to the ground surface, and there is no perched saturated zone above the contaminated soils. Based on existing program experience, the potential does exist for some lateral movement of contaminant vapors; however, this movement is not the primary direction.

(F) A leachate plume beneath the contaminated zone has not yet reached the groundwater table.

(ii) The model for calculating soil cleanup concentrations involves a set of mathematical equations designed to calculate soil remediation concentrations. The equations have been modified and simplified to make it possible to calculate soil cleanup concentrations using as much site-specific data/information as possible. The site-specific data ~~that are~~ used in the equations should be available from the subsurface investigations and are preferred over using the default values.

(iii) The equations are a mathematical expression of the conceptual model. The organic contaminant concentration in the soil is reduced by a fractional amount that has been biodegraded by natural bacteria in the soil system. Therefore, a biodegradation factor, e^{-kt}, has been included in the evaluation process. Because the biodegradation factor will reduce the amount of contaminant available for leachate generation, the soil cleanup concentration can be adjusted upward by a calculated amount. The amount, which is adsorbed, is calculated using the chemical-specific adsorption coefficient, K_d.

(iv) The adsorption coefficient, K_d, is calculated from the following equation using site-specific data:

Equation 7:

$$K_d = (f_{oc})(K_{oc}) \qquad \text{~~(Equation 7)~~}$$

where:~~,~~

f_{oc} ~~f_{oc}~~ = ~~s~~Site-specific fraction of organic carbon, mg organic carbon/mg soil in the uncontaminated

subsurface site soil. Normal range of f_{oc} in Wyoming soils is 0.1-3%. If a site-specific f_{oc} value is not determined, use a default value of 0.1%.

~~K_{oc}~~ K_{oc}= ~~c~~Chemical specific organic carbon partition coefficient, mL/gm.

(v) The conceptual model discussed above is represented by the following series of equations with further explanation, as necessary:

(A) Determine travel time to reach groundwater table, *t*.

(~~1~~I) Subsurface soil contamination separated from the groundwater table by more than ~~one (1)~~ foot of depth is calculated as follows.~~:~~ Because subsurface organic carbon content below ~~one~~ 1 foot is expected to approach a very low number in Wyoming soils, the following contaminant travel time equation has been developed:

Equation 8:

$$t = \frac{(d)[(K_d)(\rho) + \Theta]}{0.5(\alpha)}$$ ~~(Equation 8)~~

where:~~,~~

t = ~~t~~Time ~~of~~ for contaminant(s) to travel from the bottom of the contaminated zone to the groundwater table, yrs.

~~*d*~~*d* = ~~d~~Depth to the groundwater table from the bottom of the contaminated zone(s), cm.

Θ = ~~v~~Volumetric soil moisture content(s) at field capacity, mL/cm^3.

0.5 = 50% infiltration rate for precipitation (worst case).

α = ~~a~~Average annual precipitation, cm/yr.

ρ = ~~b~~Bulk soil density, gm/cm^3.

(~~2~~ II) If more than one soil type exists at a contaminated site or remediation project location where the organic carbon content differs by 0.5% or greater and the different soil type is ~~one~~ 1 foot or greater in thickness,

individual soil type specific values for K_d, Θ, and ρ shall be used in the time of travel calculation for *each* soil type. Further, the individual values for depth, *d*, to the groundwater table from the bottom of *each* contaminated soil type zone shall be used in the calculation. If the depth, *d*, from the bottom of the contaminated soil type zone to the groundwater table is less than twelve (12) inches, this method for determining contaminated soil remediation concentrations is not valid. In these cases, cleanup of contaminated groundwater will govern the satisfactory remediation of contaminated soil within this 12-inch interval. The final time of travel, *t*, is the sum of the individual soil-type segments.

(3III) Surface contamination extending from the ground surface to depths greater than two (2) feet. In order for the following equation to be used, the subsurface soil within the two (2)-foot distance must shall contain at least three (3) percent total organic carbon, otherwise eEquation 8 applies for the time of travel calculation. While If using two (2) different K_d values for different soil organic carbon concentrations, the equation is derived in the same manner as follows:

Equation 9:

$$t = \frac{(Z)[(K'_d)(\rho') + \Theta'] + (d)[(K_d)(\rho) + \Theta]}{0.5(\alpha)}$$ (Equation 9)

where:

Z = tThickness of soil containing three (3) percent or greater organic carbon, cm.

K'_d = aAdsorption coefficient in the top two (2) feet of soil, which is equal to the measured fraction of organic carbon, f_{oc}, times the K_{oc} value.

K_d = sSoil adsorption coefficient in the remaining soil column calculated from Equation 7, mL/gm.

ρ' = bBulk soil density of soil containing three (3) percent or greater organic carbon, gm/cm^3.

Θ' = ~~v~~Volumetric soil moisture content at field capacity of soil containing ~~three (3)~~ percent or greater organic carbon, mL/cm^3.

The parameter, Z, takes into account natural organic carbon that ~~which~~ may be present at the ground surface, and it may extend for a limited vertical distance [~~.~~0-60 cm (0-24 inches)] into the ground. Development of site-specific soil adsorption coefficient isotherms *may* be required for complex surface environments where f_{oc} is greater than ~~three (3)~~ percent. If the uppermost ~~two (2)~~-foot zone contains less than ~~three (3)~~ percent natural organic carbon, the Z portion of the time of travel calculation drops out, ~~thus~~ leaving ~~e~~Equation 8 to apply for the time of travel calculation. This portion of the calculation provides a mechanism to account for higher surface contaminant adsorption by naturally occurring organic carbon within this zone.

(B) Calculate the soil remediation concentration for the *biodegradation potential,* $C_{s,org}$, ~~$C_{s,org}$~~, for the organic compound(s) using ~~the~~ Equation 10: ~~following derived equation:~~

$$C_{s,org} = \frac{(C_{st,org})(K_d)}{e^{-kt}} \qquad \text{~~(Equation 10)~~}$$

where:~~,~~

k = ~~b~~Biodegradation rate constant, $0.693/T_{½}$, 1/yr.

$T_{½}$ = ~~h~~Half-life for the specific chemical substance in groundwater in years.

t = ~~c~~Contaminant travel time to reach groundwater table, yrs.

~~$C_{st,org}$~~ $C_{st,org}$ = ~~o~~Organic compound drinking water ~~maximum contaminant level,~~ MCL~~,~~ or state DWEL, mg/L.

~~$C_{s,org}$~~ $C_{s,org}$ = ~~s~~Soil cleanup concentration for organic chemical compound, mg/kg.

~~K_d~~ K_d = ~~s~~Soil adsorption coefficient calculated from Equation 7, mL/gm. Where more than one K_d value is used for two ~~(2)~~ or more different organic carbon soil types, use the lowest individual K_d value.

Equation 10 establishes the ~~leaking storage tank~~ site soil remediation concentration for each organic chemical compound that ~~which~~ could be allowed to remain in soil without threatening degradation of groundwater quality even if groundwater seasonally passes through the contaminated zone.

(vi) The soil saturation limit is the contaminant concentration at which soil pore air and pore water are saturated with the chemical and the adsorptive limits of the soil particles have been reached. Above this limit, the contaminant may be present in the free phase. Equation 11 is used to calculate the soil saturation limit for each organic chemical at the site: ~~leaking storage tank sites.~~

Equation 11:

$$C_{sat} = \frac{S(k_d \rho_b + \Theta_w + H'\Theta_a)}{\rho_b}$$ ~~(Equation 11)~~

(b) *Conceptual Metal, Inorganic Compound, and Total Petroleum Hydrocarbon Fate and Transport Model.*

The conceptual model for metals, inorganic compounds, and total petroleum hydrocarbons (TPH) assumes that these substances are distributed in subsurface soils around, or below, the level of a storage tank ~~which~~ that had contained leaded regular gasoline or a hazardous substance. Some of these substances will be mobilized in percolating rainfall~~,~~ or snow melt~~,~~ and may be transported to the groundwater table as a leachate. That portion of these substances ~~which~~ that remains adsorbed to the soil particles is determined by the adsorptive properties of both the substance and soil. It is calculated using the adsorption coefficient, K_d. ~~K_d.~~ The factor, $e^{\lambda t}$, is used as a leaching rate factor in this model to determine the rate at which leachate is released from the contaminated soil.

The conceptual model for metals, inorganic compounds, and TPH is represented by the following series of equations:~~.~~

(i) Determine the *leaching rate constant, λ*

Equation 12:

$$\lambda = \frac{(0.5)(\alpha)}{[\Theta][\tau][1 + \frac{\rho(K_d)}{\Theta}]}$$

~~(Equation 12)~~

where:~~,~~

λ = ~~l~~Leaching rate constant, 1/yr.

α ~~(alpha)~~ = ~~a~~Average annual precipitation, cm/yr.

Θ = ~~v~~Volumetric soil moisture content at field capacity, mL/cm^3.

ρ = ~~b~~Bulk soil density, gm/cm^3.

K_d = ~~s~~Soil metal, inorganic compound, or TPH adsorption coefficient, mL/gm.

τ = ~~t~~Thickness of contaminated soil seam, cm.

If more than one soil type exists at a contaminated site where the organic carbon content differs by 0.5% or more and the different soil type is ~~one~~ 1 foot or greater in thickness, individual specific soil type values for K_d, ~~K_d~~ , Θ and ρ shall be used in the leaching rate constant calculation for each soil type. The final leaching rate constant, λ, is the sum of the individual soil type segments.

(ii) Calculate *travel time* to reach groundwater table, ~~t~~*t*.

~~(A)~~ Subsurface soil contamination separated from the groundwater table by more than ~~one (~~1~~)~~ foot is handled in the following way:

Because subsurface organic carbon content below ~~one~~ 1 foot is expected to approach a very low number in Wyoming soils, contaminant travel time is calculated by:

Equation 13:

$$t = \frac{[d][(K_d)(\rho) + \Theta]}{0.5(\alpha)}$$ ~~(Equation 13)~~

where:~~,~~

t = ~~t~~Time ~~of~~ for contaminant to travel from the bottom of the contaminated zone to the groundwater table, yrs.

d = ~~d~~Depth to the groundwater table from the bottom of the contaminated zone, cm.

Θ = ~~v~~Volumetric soil moisture content at field capacity, mL/cm^3.

0.5 = 50% infiltration rate for precipitation (worst case).

α = ~~a~~Average annual precipitation, cm/yr.

ρ = ~~b~~Bulk soil density, gm/cm^3.

If more than one soil type exists at a contaminated site where the organic carbon content differs by 0.5% or greater and the different soil type is ~~one~~ 1 foot or greater in thickness, individual soil type specific values for K_d, Θ, and ρ shall be used in the time of travel calculation for each soil type. Further, the individual values for depth, d, to the groundwater table from the bottom of each contaminated soil-type zone shall be used in the calculation. If the depth, d, from the bottom of the contaminated soil-type zone to the groundwater table is less than ~~twelve (~~12~~)~~ inches or groundwater travel fluctuates this distance, this method for determining contaminated soil remediation concentrations is not valid. In these cases, cleanup of contaminated groundwater will govern the satisfactory remediation of contaminated soil within this 12-inch interval. The final time of travel, t, is the sum of the individual soil type segments.

(iii) Calculate the soil remediation concentration for the leaching potential ~~**leaching potential**~~ of the metal, inorganic compound, or TPH using the following derived equation:

Equation 14:

$$C_{s,inorg} = \frac{(C_{stm})(K_d)}{e^{-\lambda t}} \qquad \text{~~(Equation 14)~~}$$

where:~~,~~

$C_{s,inorg}$ ~~$C_{s,inorg}$~~ = ~~s~~Soil cleanup concentration due to metal, inorganic compound, or TPH leaching potential, mg/kg.

C_{stm} ~~C_{stm}~~ = ~~e~~Environmental standard concentration, primary MCL, or state DWEL, mg/L.

λ = ~~c~~Chemical leaching rate, 1/yr.

t = ~~c~~Contaminant travel time to reach groundwater table, yrs.

K_d ~~K_d~~ = ~~s~~Soil metal, inorganic compound, or TPH adsorption coefficient, ml/gm.

The soil cleanup concentration for metals, inorganic compounds, or TPH is determined by evaluating the above calculations and the natural background concentration. Information concerning the natural subsurface concentration may be available from either: (1) a subsurface investigation report, or (2) site-specific subsurface soil samples from an uncontaminated, up-gradient location immediately near the leaking storage tank site. ~~shall be collected and analyzed for the appropriate constituent.~~ Soil metal remediation is not required for concentrations that are below natural background concentration(s).

(c) *Final Storage Tank Cleanup Concentration*. The final numerical ~~leaking storage tank site~~ soil cleanup concentration for organic chemical compounds shall be the lower numerical value of~~:~~ the total petroleum hydrocarbon concentration, the human health risk assessment, the soil saturation concentration, ~~and~~ or the environmental fate and transport considerations. The final numerical ~~leaking storage tank site~~ soil cleanup concentration value for metals, inorganic compounds, or ~~and~~ total petroleum hydrocarbons shall be the lower numerical value of~~:~~ the environmental fate and transport calculation ~~and~~ or the human health risk assessment component. The goal of the final cleanup concentration(s) is to ensure that the remedial action will result in an acceptable cleanup for organic chemical compounds, inorganic compounds, TPH, and metals.

Section 42. Vapor Hazards Evaluation.

(a) Petroleum and/or hazardous substance vapors in ~~either~~ soil, the vadose zone, or groundwater resulting from a storage tank release and that ~~has~~ have caused, or ~~has~~ have a potential to cause, an explosive atmosphere in a private residence, business,

or other occupied structure, or in a confined space such as utility conduits, sewer mains, etc., shall be evaluated and remediated according to this ~~s~~Section. Monitoring for explosive atmosphere action levels shall be ~~accomplished~~ completed using a properly calibrated and operating combustible gas meter. Explosive atmosphere action levels for volatile substances are defined as 25% of the substance's lower explosive limit (LEL).

(b) When an explosive action level is exceeded, immediate measures shall be taken to reduce the explosive environment to below the action level. ~~The immediate action system~~ If a mechanical remediation system capable of mitigating vapors is installed, it shall ~~will~~ be operated and~~/or~~ maintained until, at a minimum, ~~such time as a soil and/or groundwater restoration action(s) has eliminated~~ the explosive atmosphere has been eliminated. ~~, or the immediate action system is not required to maintain the environment below the explosive atmosphere action level.~~ Atmospheric monitoring shall continue until the explosive atmosphere has been eliminated. ~~be required for any immediate action system.~~

(~~b~~c) ~~After remediation or immediate response, soil or groundwater contamination caused by a storage tank release shall not contain any contaminant concentration which causes a release of vapors to the vadose zone or atmosphere which could present a human health hazard in an indoor structure or confined space where people or animals may work or live and receive an exposure.~~ Contamination may not remain in soil or groundwater if the contamination could cause a release of vapors to receptors in an indoor structure or confined space at levels that present a human health hazard.

(d) Chemical substance airborne concentrations in *occupational* environments are regulated by the ~~Chapter 7, Occupational Health and Environmental Control, General Rules and Regulations,~~ Wyoming Occupational Health and Safety Division, Department of Employment, for protection of employees in a work place.

(e) Hazardous substance *indoor* air quality action levels ~~will~~ shall be calculated using the following equations:~~.~~

~~(i) *Carcinogens:*~~

Equation 15:

$$IAAL(\mu g/m_3) = \frac{(RISK)(ABW)(LIFE)(UCF)}{(CPF_i)(BR)(ABS)(DUR)}$$ ~~(Equation 15)~~

____(ii) *Non-carcinogens:*

Equation 16:

$$IAAL(\mu g/m^3) = \frac{(RfD_i)(ABW)(UCF)(HQ)}{(BR)(ABS)}$$ ~~(Equation 16)~~

where:~~:~~

$IAAL$	=	Indoor Air Action Level, μg/m^3.
$RISK$	=	Cancer risk (~~–~~1 x 10^{-6}).
RfD_i	=	Inhalation Reference ~~d~~Dose~~—~~; chemical specific.
CPF_i	=	Inhalation Cancer Potency Factor; chemical specific.
ABW	=	Average body weight (70 kg).
UCF	=	Unit conversion factor (1,000 μg/mg).
BR	=	Indoor breathing rate (15 m^3/day).
ABS	=	Absorption percentage (100%).
HQ	=	Hazard quotient (1).
$LIFE$	=	Lifetime exposure (70 years).
DUR	=	Duration of exposure (30 years).

Values for *inhalation* toxicological reference doses (RfDi) and/or cancer potency factors (CPFi) shall be obtained from current data in the U.S. Environmental Protection Agency's (EPA) Integrated Risk Information System (IRIS), the Health Effects Assessment Summary Tables (HEAST), or the EPA Region IX Preliminary Remediation Goals Data Base. Where toxicological data ~~is~~ are not listed in these references, the administrator shall ~~will~~ establish the appropriate airborne concentration standard.

When an airborne concentration is confirmed in any building that equals or exceeds calculated concentrations and the source of the

contaminant airborne concentration is known to be associated with a leaking storage tank release, immediate action ~~will~~ shall be implemented. Action shall be taken to eliminate the airborne health hazard to the applicable airborne occupational or indoor air quality action level. Immediate action ~~will~~ shall continue until the airborne concentration(s) is below those levels specified in this ~~s~~Section.

Section 43. Default Organic Compound and Total Petroleum Hydrocarbon Soil Cleanup Concentrations. When site-specific geological data/information are not available to calculate ~~acceptable~~ soil cleanup concentrations, default remediation standards shall be used. Default remediation standards shall be based on ~~a child's~~ exposure of the most sensitive receptor using both oral ingestion and inhalation pathways~~,~~ and the potential for soil contamination to migrate to groundwater. The default soil condition for organic compounds has been established as a sandy clay formation with a minimal organic carbon content of 0.1% and a depth to the first groundwater table from the bottom of the default contaminated soil zone equal to ~~one~~ 1 foot. The default thickness of contaminated soil is ~~five (5)~~ feet. The annual precipitation rate is ~~fourteen (14)~~ inches per year with a 50% infiltration rate. These conservative default soil conditions indicate residential exposures with protection of groundwater quality to EPA/STP~~WDEQ~~ ~~drinking water~~ MCLs or DWELs. ~~equivalent drinking water levels.~~

PART K

DELIVERY PROHIBITION ~~OF DELIVERIES~~
AT NON-COMPLIANT FACILITIES

Section 44. Delivery Prohibition. ~~of Deliveries~~

(a) *Reasons for Restricting Delivery.* Regulated substance delivery prohibition ~~Prohibition of delivery of regulated substances~~ to a storage tank system shall be required when the department becomes aware that:

(i) The owner and/or operator has not performed leak detection on the tanks as required in Part D ~~of this chapter~~ for any period exceeding ~~sixty (~~60~~)~~ days;

(ii) The most recently required cathodic protection test has not been done within ~~ninety (~~90~~)~~ days of the due date ~~when due~~ ~~under~~ as required by Section 11(b); ~~of this chapter;~~

(iii) A cathodic protection test done in accordance with Section 11 has failed and has not been repaired and re-tested within ~~ninety (~~90~~)~~ days of the date when the original failing result was obtained;

(iv) The most recently required pressure test of the lines has not been done as required ~~under~~ by Section~~s~~ 14(g)(i)(B) or Section 14(g)(ii) ~~of this chapter~~ (as applicable) within s~~ixty (6~~90~~)~~ days of the date due;

(v) The most recently required functional test of automatic line leak detectors has not been done as required by ~~under~~ Section~~s~~ 14(g)(i)(B) or Section 37~~, Section 37(a), or Section 37(b) of this chapter~~ within ~~sixty (6~~90~~)~~ days of the date due;

(vi) The owner and/or operator has failed to report a suspected release under Section 19 when required by Part D and/or Section 19; ~~Sections 14(b), 15(a)(iv), 16(a)(viii), 16(b), 16(c)(ii), 16(d)(viii), 16(e)(x), 16(f)(iv), 16(g)(v), 16(h)(vii), or 19 of this chapter;~~

(vii) The owner and/or operator has reported a suspected release under Section 19 but has failed to initiate the

release investigation required under Section 20 or 21; ~~of this chapter;~~

(viii) The owner and/or operator has reported a confirmed release, but repairs have not been made to the storage tank system;

(ix) The owner and/or operator has failed to pay the storage tank registration fee, which is due on January 1 of each year, by ~~September~~ April 1 of the year when due;

(x) The owner and/or operator has failed to follow any Order issued by the department, unless that Order is under appeal to the Environmental Quality Council;

(xi) Any required monitoring device has been purposely tampered with or turned off (~~except if~~ unless it is being repaired ~~worked on~~);

(xii) Any ~~or any~~ record required to be kept under this ~~c~~Chapter has been falsified;

(xiii) Any regulated tank is discovered without overfill and spill prevention devices in place as required by Sections 6(c)or 35(f); ~~of this chapter;~~

(xiv~~ii~~) Any regulated tank, or any piping or ancillary equipment that routinely contains product and is not isolated from ground contact, is discovered without corrosion protection or cathodic protection systems ~~equipment~~ in place as required by Sections 6(a)(ii), ~~or~~ 6(b)(ii),or 35(d); ~~of this chapter;~~

(x~~i~~v) Any regulated AST ~~above ground storage tank~~ has not been fully upgraded ~~under~~ in accordance with Part I; ~~of this chapter after October 1, 2007;~~

(xvi) The operator's annual inspection has not been performed within 90 days of the due date~~,~~ as required by Section 13(g~~e~~) or Section 36(f); ~~of this chapter, within ninety (90) days of the date when due;~~

(xvii) The department becomes aware that there has been no Licensed Class A or B Operator for a facility for ~~ninety (90)~~ days or more;

(xviii) Repaired tanks and piping have not been tightness tested within ~~thirty (~~30~~)~~ days of repair completion; ~~or~~

(ixx~~viii~~) Cathodic protection impressed current systems have not been inspected at least every ~~sixty (~~60~~)~~ days~~.~~;

(xx) A storage tank system has been installed or substantially modified and is being operated without written authorization by the department; or

(xxi) Spill prevention equipment, containment sumps, or overfill prevention device testing has not been completed within 60 days of the due date as required in Section 10(d); or

(xxii) Pressurized piping is being operated without an automatic line leak detector in accordance with Section 14(g)(i)(B).

(b) ~~*Procedures for Prohibiting Deliveries of Regulated Substances*~~*Delivery Prohibition Procedures*. When any of the ~~causes~~ delivery prohibition reasons in Section 44(a) ~~for prohibition of delivery~~ exist, ~~as shown in paragraph (a) of this section~~ the department shall issue an Administrative Order to prohibit deliveries of the regulated substance.

(i) ~~The Wyoming Fuel Tax Administration tracks fuel suppliers of record for all storage tank facilities selling gasoline or diesel.~~ The department shall obtain, from the Wyoming Fuel Tax Administration, the names of suppliers of record for any facility ~~which~~ that is the subject of an Administrative Order under this subsection. ~~When there are suppliers of record with the Wyoming Fuel Tax Administration,~~ tThose suppliers shall also be ordered not to deliver regulated substances in the Administrative Order.

(ii) Administrative Orders issued under this Part shall include the following information:

(A) The name of the ~~O~~owner and/or ~~O~~operator of the storage tank system;

(B) The street address of the facility where the storage tank system is located;

(C) The Storage Tank Program ~~F~~facility ID ~~N~~number;

(D) The specific tanks at the facility ~~which~~ that are affected; ~~restricted, or if all tanks at the facility are restricted;~~ and

(E) The reason for the delivery prohibition. ~~restriction;~~

(iii) An Administrative Order issued under this ~~s~~Section is final as soon as it is signed by the Director. Administrative Orders may be appealed to the Environmental Quality Council. ~~under W.S. 35-11-701;~~

(iv~~ii~~) The department shall immediately issue a Notice of Compliance to all entities covered by the Administrative Order that lifts the prohibition when~~ever~~ the facility has been returned to compliance. Such notice shall include the same information required ~~found~~ in Section 44(b)(ii)(A) through (D). ~~;~~

(c) *Posting on the ~~i~~Internet.* The department shall immediately post a copy of the Administrative Order on its website whenever a facility is prohibited from accepting deliveries of regulated substances. The department shall also post a Notice of Compliance on its website when the prohibition has been lifted. The notice~~s~~ ~~will~~ shall state which tanks at the facility are affected.

(d) *Red Tagging.* The department may, at any time after issuing an Administrative Order under this Part, place a tag on the affected tanks stating:

"DELIVERY PROHIBITION
Deliveries of any regulated substance to this tank have been prohibited by the State of Wyoming, Storage Tank Program. Delivery of any regulated substance to this tank while the delivery prohibition exists is a violation of ~~Chapter 17, Part K, Wyoming Water Quality Rules and Regulations."~~ Chapter 1, Storage Tank Program, Solid and Hazardous Waste Division Rules and Regulations, Storage Tanks, Part K."

(e) *Violation of this Part.* It is a violation of this Part for any person to purchase a regulated substance for delivery to, or to deliver a regulated substance to, any storage tank that is the subject of any Administrative Order issued under this Part.

(f) *One-Time Fuel Delivery Allowance.* The department may issue a one-time fuel delivery allowance to a tank prohibited from receiving a delivery so the owner and/or operator can perform tank and line tightness testing. This delivery shall be for the minimum amount of fuel needed to perform the required test.

PART L

~~LICENSING OF~~ STORAGE TANK OPERATORS, INSTALLERS, AND TESTERS LICENSING

Section 45. Installer Licensing. ~~of Installers~~

(a) *License Required*. During the installation or modification of any UST or AST regulated by this ~~c~~Chapter, at least one person, present on the job site, shall be licensed by the department to install or modify fuel tanks. To obtain an installer's license, the installer ~~these licenses, each person~~ shall submit documentary evidence that he or she has passed the following tests, as applicable, within the 5 ~~three (3)~~ years preceding the application date:

(i) All Licensed Installers:

(A) The International Code Council test on Wyoming State Specific Storage Tank Laws~~.~~; and

(B) A current certificate for Hazardous Waste Operations and Emergency Response as required by the Wyoming Department of Employment, Occupational Health and Safety, Chapter 7, Section 1910.120.

(ii) Licensed UST Installers. UST installers shall pass the International Code Council UST Installation and Retrofitting test~~;~~.

(iii) Licensed AST Installers. AST installers shall pass the International Code Council ~~test entitled~~ AST Installation and Retrofitting test~~;~~.

(b) *License Renewal*. Persons who are licensed as UST or AST installers shall renew their license every 5 ~~three (3)~~ years.

(c) *Reciprocity with Other States and Cities.* The department may accept a license from another state or a city after review and approval of the licensing requirement for that state or city. The license shall be accepted in lieu of taking the International Code Council tests required in Sections 45(a)(ii) and (iii). However, the licensee shall meet the requirements in Section 45(a)(i). A license from another state or a city that does not require passing an exam, but only

requires continuing education units, will not be accepted. ~~After evaluation of the other state or city's licensing requirements, the State of Wyoming Storage Tank Program may accept a license from any adjacent state, or any city in Wyoming, in lieu of the International Code Council tests required in Section 45(a)(ii) and (iii).~~

Section 46. Storage Tank Operator Licensing. ~~of Operators of Storage Tanks~~

(a) *Class A Operator*. Each facility, whether active or temporarily out-of-use (TOU), shall be under the supervision of a person who has obtained a Class A Storage Tank Operator's License. The Class A Operator shall be an employee of the facility owner and/or operator. To obtain a Class A Storage Tank Operator's License, the operator ~~each person~~ shall submit documentary proof that he/she has ~~they~~ have passed ~~T~~the International Code Council test on "Wyoming State Specific Storage Tank Laws - ICC Test W-6." A Class A Operator is generally the area manager for a company with multiple locations.

(b) *Class B Operator*. All storage tank owners and/or operators ~~of storage tanks~~ ~~in Wyoming~~ shall ~~i~~ensure that the person ~~who is~~ in responsible charge of the day-to-day operation of the storage tanks obtains a Class B Operator license from the department. For facilities used to fuel vehicles, the person in responsible charge cannot ~~also~~ be in responsible charge of more than ~~fifteen (~~15~~)~~ facilities at the same time. The Class B Operator shall be an employee of the facility owner and/or operator.

(c) *Timing.* Within ~~ninety (~~90~~)~~ days of the first date of employment with the company, the Class A and Class B ~~o~~Operators shall obtain a Class A or B Storage Tank Operator's license from the department. To obtain this license, the operator(s) ~~each person~~ shall submit documentary evidence that he or she has passed the following tests within the ~~five (~~5~~)~~ years preceding the application date:

(i) UST Operators. The International Code Council test "ICC BU Class B UST System Operator Exam" (Class B for UST operators); and/or

(ii) AST Operators. The International Code Council test “Wyoming AST System Operators – ICC Test W-5” (Class B for AST operators); or

(iii) In lieu of both of the above tests, the International Code Council test “Wyoming State Specific Storage Tank Laws – ICC Test W-6” (Class A operators).

~~(d) *Inspection by the Class A or B Operator*. This paragraph does not apply to tanks supplying fuel to emergency power generators. Whenever a Class A operator is in charge of more than one facility, a monthly inspection is required. Either the Class A or B Operator for each facility must perform a monthly visual inspection of each storage tank system for which they are designated. The results of each inspection shall be recorded on a monthly inspection checklist.~~

~~(i) Every facility subject to this paragraph must be inspected monthly. The monthly visual inspection shall include inspections for all of the following:~~

~~(a) the presence of any sensor alarm conditions, responding to alarm conditions appropriately;~~

~~(b) the integrity of the spill containment (cracks, holes, bulges, etc.)and for the presence of regulated substance, water, or debris in spill containers (fill and vapor recovery);~~

~~(c) the condition of all single wall piping sumps; and~~

~~(d) the hanging hardware on dispensers and other visible piping for the presence of regulated substance leakage.~~

~~(ii) Double wall piping sumps shall be inspected quarterly. If there is any alarm condition on any double wall system, the appropriate sump(s) must be opened, inspected, and cleaned if necessary. The sump sensors must be placed back within one half (1/2) inch of the bottom of the sump.~~

~~e) *Documentation.* The Class A or B Operator shall provide the owner or operator with a copy of each monthly inspection checklist and alert the owner or operator of any condition~~

~~discovered during the monthly visual inspection that may require follow-up actions.~~

~~(f) *Records.* The owner or operator shall maintain a copy of the monthly inspection checklist and all attachments for the previous twelve (12) months. The records shall be maintained on-site or off-site at a readily available location within the State of Wyoming.~~

~~(g) *Unattended Stations.* For unattended stations, the Class A, B, or C Operator shall visit the site on a daily basis as required by the International Fire Code, Section 2204.3.1.~~

(~~h~~d) *Class C Operators* (*Service Station Clerks*). The Class C Operator ~~must~~ shall be trained prior to assuming responsibility for responding to emergencies or alarms. Class C Operator training shall include when and how to notify appropriate authorities and the Class A or B Operator for the facility. Managers and fuel clerks who work at a service station or convenience store, but who are not in responsible charge of the location, ~~must~~ shall be trained onsite by the Class A or B Operator for that location in all of the following areas:

(i) ~~p~~Proper procedures to follow in the event of an accident that damages the dispensers or any part of the fuel system, including but not limited to, exposed piping and vent lines;

(ii) ~~t~~The location and operation of all emergency shutoff switches, breakers, and other controls necessary to completely control all pumps installed on the system;

(iii) ~~t~~The limits of maintenance items that can be performed by the Class C Operator and what items ~~must~~ shall be referred to more qualified individuals;

(iv) ~~p~~Procedures to be followed in the event of a fuel release, regardless of the reason for that release;

(v) ~~r~~Records that ~~must~~ shall be kept (if any) on each shift to ~~i~~ensure that release detection is properly done;

(vi) ~~d~~Delivery procedures and hazards;

(vii) ~~a~~Alarm recognition with emphasis on the significance and proper response to each and every alarm on the storage tank system; and

(viii) ~~t~~The location and function of all leak detection and CP devices and systems.

(~~i~~e) *Spill Reporting. ~~of spills.~~* The Class C Operator shall notify the Class A or Class B Operator for his or her facility whenever there has been a release of regulated substances.

(~~j~~f) *License Renewal*. Persons who are licensed as UST or AST Operators shall renew their license every ~~five (5)~~ years.

(~~k~~g) *Reciprocity with Other States and Cities.* The department may accept a license from another state or a city after review and approval of the licensing requirement for that state or city. The license shall be accepted in lieu of taking the International Code Council tests required in Section 46(c)(i) for Class B UST Operators only. A license from another state or a city that does not require passing an exam, but only requires continuing education units, will not be accepted. ~~After evaluation of the other state or city's licensing requirements, the State of Wyoming Storage Tank Program may accept a license from any adjacent state or any city in Wyoming in lieu of the International Code Council test required in Section 46(c)(i).~~

~~(l) *Recordkeeping.* Tank owners shall maintain on-site a list of designated and trained Class C Operators (Service Station Clerks).~~

(h) *Documentation.* Owners and/or operators shall 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. Training records shall be kept on site and available for inspection.

(i) The list shall identify all Class A, Class B, and Class C Operators currently designated for the facility. The list shall include names, class of operator trained, date the operator assumed duties, date each completed initial training, and date of any retraining.

(ii) Records verifying completion of training or retraining shall be a paper or electronic record for each

operator class. The records, at a minimum, shall identify the name of the trainee, the date the Class C Operators were trained, the expiration date on the license for Class A or B Operators, and the name of the Class A or B Operator that trained each Class C Operator. Owners and/or operators shall maintain these records for as long as the Class A, Class B, or Class C Operators are designated.

(~~m~~i) *Retraining Required.* When a Notice of Violation ~~and Order~~ is issued to a facility for any of the reasons listed in Section 44(a)(i) through (xxii~~xviii~~), the Class B Operator ~~must~~ shall be retrained. Retraining shall be in the form of retaking (if previously taken) or taking (if not previously taken) and passing the "Wyoming State Specific Storage Tank Laws – ICC Test W-6" exam. The Class B Operator shall take this test within ~~ninety (~~90~~)~~ days of the Notice of Violation date. If there is more than one Class B Operator for the facility, at a minimum one of the Class B Operators ~~must~~ shall take the exam.

(~~n~~j) *Notification.* When a licensed operator is no longer responsible for the facility, the facility owner and/or operator shall notify the department in writing within ~~thirty (~~30~~)~~ days of the date the operator is no longer responsible for the facility.

Section 47. ~~Licensing of~~ Cathodic Protection Testers~~s~~ and Corrosion Experts~~s~~ Licensing.

(a) *Cathodic Protection Testers*. Persons performing ~~who perform any~~ cathodic protection testing shall obtain a license from the department. To obtain this license, the tester ~~each person~~ shall submit documentary evidence that he or she is:

(i) ~~c~~Certified by NACE as a cathodic protection tester within the ~~three (~~3~~)~~ years preceding the application date; or

(ii) ~~c~~Certified by the Steel Tank Institute as a cathodic protection tester within ~~two (2)~~ 3 years preceding the application date.

(b) *Corrosion Experts*. Persons designing ~~who design any~~ impressed current systems, ~~or any~~ sacrificial/galvanic anode systems, or ~~design any~~ repairs to these systems shall ~~first~~ be licensed by the department. To obtain a license, the designer ~~each person~~ shall submit documentary evidence that he or she:

(i) ~~i~~Is certified as a corrosion expert by NACE~~,~~; or

(ii) ~~p~~Possesses a current Professional Engineer's license issued by the Wyoming Board of Registration for Professional Engineers and Land Surveyors and has ~~three (3)~~ years' experience in the field of cathodic protection.

(c) *License Renewal*. Licenses issued for Cathodic Protection Testers and Corrosion Experts shall expire on the date ~~when~~ the underlying certification by NACE or STI expires, or on the ~~same~~ date when an underlying license issued by another state or city expires, or on the date the underlying P.E. license expires. Persons holding those licenses shall renew their license ~~within ninety (90) days~~ prior to the date when the license expires.

(d) *Reciprocity with Other States and Cities.* The department may accept a license from another state or a city after review and approval of the licensing requirement for that state or city. The license shall be accepted in lieu of the NACE certification or STI certification required in Section 47(a) and/or (b). A license from another state or a city that does not require passing an exam, but only requires continuing education units, will not be accepted. ~~After evaluation of the other state or city's licensing requirements, the State of Wyoming Storage Tank Program, may accept a license from any adjacent state, or any city in Wyoming, in lieu of the NACE certification or STI certification required in Section 47(a) and (b).~~

Section 48. Tank and Line Tester Licensing. ~~of Tank and Line Testers.~~

(a) *License Required*. Before performing tank and line tests, testers ~~in Wyoming, all tank and line testers~~ shall obtain a license from the department. To obtain a license, the tester ~~each person~~ shall submit documentary evidence that he or she has passed:

(i) ~~t~~The International Code Council test entitled "Tank Tightness Testing – ICC Test U-3" within the preceding 5 ~~two (2)~~ years; ~~before the date of the application;~~ and

(ii) The manufacturers' training ~~certification~~ for the type of tank and line tests performed.

(b) *License Renewal*. Persons who are licensed as ~~T~~tank and ~~L~~line ~~T~~testers shall renew their license every ~~two (2)~~ 5 years.

(c) *Reciprocity with Other States and Cities.* The department may accept a license from another state or a city after review and approval of the licensing requirement for that state or city. The license shall be accepted in lieu of the International Code Council test required in Section 48(a)(i). A license from another state or a city that does not require passing an exam, but only requires continuing education units, will not be accepted. ~~After evaluation of the other state or city's licensing requirements, the State of Wyoming Storage Tank Program, may accept a license from any adjacent state, or any city in Wyoming, in lieu of the International Code Council test on Tank Tightness Testing required by Section 48(a)(i).~~

Section 49. License Revocation. ~~of Licenses.~~

(a) *Reasons.* The department may revoke or refuse to issue any of the licenses required under Sections 45 through 48 ~~47 of this chapter~~ for the following reasons:

(~~a~~i) Submission of Falsified Data. ~~Whenever t~~The department has documentary proof that ~~any of the~~ information submitted to the department for the purpose of obtaining a license was falsified or misrepresented;

(~~b~~ii) False Reporting. Submission of any report to the department ~~which~~ that is shown by the tester as passing when the test actually shows a failing result; or

(~~c~~iii) License Revoked. ~~Whenever a~~Any ~~of the~~ issuing agency~~ies~~ (ICC, NACE, the Wyoming Board of Registration for Professional Engineers and Land Surveyors, or the manufacturer of test equipment) revokes the certifications ~~necessary that are~~ required for a license.

(~~d~~b) *Continuation of Expiring Licenses*. When a licensee has made timely and sufficient application for renewal of a license or a new license, the existing license does not expire until the application has been reviewed by the department. If the application is denied or the terms of a new license are limited, the license does not expire until the last day the licensee seeks review by the department or a later date fixed by order of the reviewing court. ~~When a licensee has made timely and sufficient~~

~~application for the renewal of a license or a new license with reference to any activity of a continuing nature, the existing license does not expire until the application has been finally determined by the agency, and, in case the application is denied or the terms of the new license limited, until the last day for seeking review of the agency order or a later date fixed by order of the reviewing court.~~

(~~e~~c) *Notification*. Whenever the department intends to revoke any license issued under this Part, ~~section~~ the department shall notify the licensee by certified mail (return receipt requested) or by process server, stating the facts or conduct ~~which~~ that warrants the intended action. The notice shall also provide evidence that ~~T~~the licensee was given an opportunity to show compliance with all lawful requirements for the retention of the license. The licensee shall have ~~fifteen (~~15~~)~~ days from the date of his/her receipt of the notice to provide additional evidence or information with respect to the revocation of the license. Revocation of licenses is a final department ~~agency~~ action subject to appeal to the Environmental Quality Council under Department of Environmental Quality, Rules of Practice and Procedure, Chapter 1, General Rules. ~~Chapter 1, Section 6, Wyoming Environmental Quality Council, Rules of Practice and Procedure.~~

~~Section 50. **Implementation of Part L.** All persons required to have licenses under Part L shall obtain those licenses within one (1) year of the effective date of this chapter or the date when they would otherwise be required to obtain those licenses, whichever is the later date.~~

PART M

FIELD-CONSTRUCTED TANKS AND
AIRPORT HYDRANT FUEL DISTRIBUTION SYSTEMS

Section 50. General Requirements.

(a) *Implementation of Requirements.* Owners and/or operators shall comply with the requirement of this Part for UST systems with field-constructed tanks and airport hydrant systems as follows:

(i) For UST systems installed on or before October 13, 2015, the requirements are effective according to the following schedule:

Requirement	Effective Date
Upgrading UST systems; general operating requirements; and operator training	October 13, 2018
Release detection	October 13, 2018
Release reporting, response, and investigation; closure; financial responsibility and notification (except as provide in paragraph (b) of this Section)	October 13, 2015

(ii) For UST systems installed after October 13, 2015, the requirements apply at installation.

(b) Not later than October 13, 2018, all owners and/or operators of previously deferred UST systems shall submit a one-time notice of tank system existence to the department using a form developed by the department. Owners and/or operators of UST systems in use as of October 13, 2015, shall demonstrate financial responsibility at the time of submission of the notification form.

(c) Except as provided in Section 51, owners and/or operators shall comply with the requirements of Parts A through E, G, L, and N.

(d) In addition to the codes of practice listed in Section 6, owners and/or operators may use military construction criteria, such as the UFC 3-460-01 as referenced in Section 2, when designing, constructing, and installing airport hydrant systems and UST systems with field-constructed tanks.

Section 51. Additions, Exceptions, and Alterations for UST Systems with Field-Constructed Tanks and Airport Hydrant Systems.

(a) *Exception to Piping Secondary Containment Requirement.* Owners and/or operators may use single-wall piping when installing or replacing piping associated with UST systems with field-constructed tanks greater than 50,000 gallons and piping associated with airport hydrant systems. Piping associated with UST systems with field-constructed tanks less than or equal to 50,000 gallons not part of an airport hydrant system shall meet the secondary containment requirement when installed or replaced.

(b) *Upgrade Requirements.* Not later than October 13, 2018, airport hydrant systems and UST systems with field-constructed tanks where installation commenced on or before October 13, 2015, shall meet the following requirements or be permanently closed pursuant to Part G.

(i) Corrosion Protection. UST system components in contact with the ground that routinely contain regulated substances shall meet one of the following:

(A) Except as provided in paragraph (a) of this Section, the new UST system performance standards for tanks and piping found in Section 6; or

(B) Be constructed of metal and cathodically protected according to NACE International Standard Practice SP0285 as referenced in Section 2, or NACE International Standard Practice SP0169 as referenced in Section 2, or National Leak Prevention Association Standard 631 as referenced in Section 2, or ASTM Standard G158 as referenced in Section 2; and shall meet the following:

(I) Cathodic protection shall meet the requirements found in Section 6 for tanks and piping.

(II) Tanks over 10 years old without cathodic protection shall be assessed to ensure the tank is structurally sound and free of corrosion holes prior to adding cathodic protection. The assessment shall be by internal inspection or another method determined by the department to adequately assess the tank for structural soundness and corrosion holes.

(ii) Spill and Overfill Prevention Equipment. To prevent spilling and overfilling associated with product transfer to the UST system, all UST systems with field-constructed tanks and airport hydrant systems shall comply with new UST system spill and overfill prevention equipment requirements specified in Section 6.

(c) *Walkthrough Inspections.* In addition to the walkthrough inspection requirements in Section 13(d), owners and/or operators shall inspect the following additional areas for airport hydrant systems at least once every 30 days if confined space entry according to the Occupational Safety and Health Administration (29 CFR Part 1910) is not required or at least annually if confined space entry is required. Walkthrough inspection records shall be maintained in accordance with Section 13(f).

(i) Hydrant pits. Visually check for any damage, remove any liquid or debris, and check for any leaks; and

(ii) Hydrant piping vaults. Check for any hydrant piping leaks.

(d) *Release Detection.* Owners and/or operators of UST systems with field-constructed tanks and airport hydrant systems shall begin meeting the release detection requirements described in this subpart not later than October 13, 2018.

(i) Methods of Release Detection for Field-Constructed Tanks. Owners and/or operators of field-constructed tanks with a capacity less than or equal to 50,000 gallons shall meet the release detection requirements in Part D. Owners and/or operators of field-constructed tanks with a capacity greater than 50,000 gallons shall meet either the requirements in Part D (except Sections 16(d) or (e) shall be combined with inventory control) or use one or a combination of the following alternative methods of release detection:

(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 30 days that can detect a leak rate less than or equal to 1 gallon per hour. This method shall be combined with a tank tightness test that can detect a 0.2 gallon per hour leak rate performed at least every 3 years;

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

(D) Perform vapor monitoring (conducted in accordance with Section 16(d) for a tracer compound placed in the tank system) capable of detecting a 0.1 gallon per hour leak rate at least every 2 years.

(E) Perform inventory control (conducted in accordance with Department of Defense Directive 4140.25, or A4A Airport Fuel Facilities Operations and Maintenance Guidance Manual (both as referenced in Section 2), or equivalent procedures) at least every 30 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 2 years; or

(II) Perform vapor monitoring or groundwater monitoring (conducted in accordance with Sections 16(d) or (e), for the stored regulated substance) at least every 30 days; or

(F) Another method approved by the department if the owner and/or operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in this Section. In comparing methods, the department shall consider the size of release that the method can detect and the frequency and reliability of the detection.

(ii) Methods of Release Detection for Piping. Owners and/or operators of underground piping associated with field-constructed tanks less than or equal to 50,000 gallons shall meet

the release detection requirements in Part D. Owners and/or operators of underground piping associated with airport hydrant systems and field-constructed tanks greater than 50,000 gallons shall follow either the requirements in Part D (except Sections 16(d) or (e) shall be combined with inventory control) or use one or a combination of the following alternative methods of release detection:

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

Maximum Leak Detection Rate Per Test Section Volume		
Test Section Volume (Gallons)	Semiannual Test – Leak Detection Rate Not to Exceed (Gallons/Hour)	Annual Test – Leak Detection Rate Not to Exceed (Gallons/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

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 October 13, 2018, may use up to 6.0 gallon/hour leak rate.
Second Test	Between October 13, 2018, and October 13, 2021, may use up to 6.0 gallon/hour leak rate.
Third Test	Between October 13, 2021, and October 13, 2022, shall use 3.0 gallon/hour leak rate.
Subsequent Tests	After October 13, 2022, begin using semiannual or annual line testing according to the Maximum Leak Detection Rate Per Test Section Volume in Table above.

(B) Perform vapor monitoring (conducted in accordance with Section 16(d) for a tracer compound placed in the tank system) capable of detecting a 0.1 gallon per hour leak rate at least every 2 years.

(C) Perform inventory control (conducted in accordance with Department of Defense Directive 4140.25, or A4A Airport Fuel Facilities Operations and Maintenance Guidance Manual (both as referenced in Section 2), or an equivalent procedure) at least every 30 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 this Section using the leak rates for the semiannual test) at least every 2 years; or

(II) Perform vapor monitoring or groundwater monitoring conducted in accordance with Sections 16(d) or (e) for the stored regulated substance at least every 30 days; or

(D) Another method approved by the department if the owner and/or operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in this Section. In comparing methods, the department shall consider the size of release that the method can detect and the frequency and reliability of detection.

(iii) Records for Release Detection. Owners and/or operators shall maintain release detection records according to the recordkeeping requirements in Section 18.

(e) *Applicability of Closure Requirements to Previously Closed UST Systems.* When directed by the department, the owner and/or operator of an UST system with field-constructed tanks or airport hydrant systems permanently closed before October 13, 2015, shall assess the excavation zone. The UST system shall be closed in accordance with Part G if releases from the UST may, in the judgment of the department, pose a current or potential threat to human health and the environment.

PART N

FINANCIAL ASSURANCE FOR UNDERGROUND STORAGE TANKS

Section 52. Applicability.

(a) All owners and/or operators of petroleum underground storage tank (UST) systems as defined in W.S. § 35-11-1415 are subject to Part N requirements. UST systems with field-constructed tanks and airport hydrant fuel distribution systems are also subject to Part N requirements in accordance with the schedule in Part M.

(b) If the owner and/or operator of a petroleum UST are not the same person, only one person is required to demonstrate financial responsibility. However, both parties are liable in the event of noncompliance.

(c) When determining compliance with this Part, the total number of owned and/or operated USTs includes not only those located in Wyoming, but also those located at all locations throughout the United States.

Section 53. Financial Responsibility Amount and Scope.

(a) Petroleum USTs or contaminated site owners and/or operators not eligible for the state corrective action account shall demonstrate financial responsibility for taking corrective action and for compensating third parties for bodily injury or property damage caused by accidental releases arising from the operation of the USTs. Financial responsibility shall be provided in the following per-occurrence amounts:

(i) Owners and/or operators of petroleum USTs located at petroleum marketing facilities, or that handle an average of more than 10,000 gallons of petroleum per month based on annual throughput for the previous calendar year; $1 million.

(ii) All other owners and/or operators of petroleum USTs; $500,000.

(b) For the purposes of Sections 53(c) and (f) only, a "petroleum UST" means a single containment unit and does not mean combinations of single containment units.

(c) Owners and/or operators of petroleum USTs not eligible for the state corrective action account shall demonstrate financial responsibility for taking corrective action and for compensating third parties for bodily injury or property damage caused by accidental releases arising from the operation of petroleum USTs in at least the following annual aggregate amounts:

(i) Owners and/or operators of 1 to 100 petroleum USTs; $1 million.

(ii) Owners and/or operators of 101 or more petroleum USTs; $2 million.

(d) Except as provided in Section 53(e), if an owner and/or operator not eligible for the state corrective action account uses separate mechanisms or separate combinations of mechanisms to demonstrate financial responsibility for taking corrective action and compensating third parties for bodily injury or property damage caused by an accidental release, the amount of assurance provided by each mechanism or combination of mechanisms must be in the full amount specified in Sections 53(a) and (c).

(e) If an owner and/or operator not eligible for the state corrective action account uses separate mechanisms or separate combinations of mechanisms to demonstrate financial responsibility for different petroleum USTs, the annual aggregate required shall be based on the number of tanks covered by each such separate mechanism or combination of mechanisms.

(f) Owners and/or operators not eligible for the state corrective action account shall review the amount of aggregate assurance provided whenever additional petroleum USTs are acquired or installed. If the total number of petroleum USTs for which assurance shall be provided exceeds 100, the owner and/or operator shall demonstrate financial responsibility in the amount of at least $2 million 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 and/or operator shall demonstrate financial responsibility in the amount

of at least $2 million 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 financial 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 and/or operator.

(i) Owners and/or operators of 101 or more USTs who are eligible for the state corrective action account shall demonstrate financial responsibility for compensating third parties for bodily injury or property damage caused by accidental releases arising from the operation of petroleum USTs. The amount required is $1 million dollars such that a total aggregate amount of $2 million is reached when the financial responsibility of $1 million provided by the state is applied.

Section 54. Allowable Mechanisms and Combinations of Mechanisms.

(a) Petroleum USTs or contaminated site owners and/or operators not eligible for the state corrective action account shall use any one or combination of mechanisms to demonstrate financial responsibility under this Chapter for one or more USTs. Demonstration shall be pursuant to the requirements of 40 CFR 280.95, 280.96, 280.97, 280.98, 280.99, and/or 280.102, and 280.103 when required by the mechanism chosen; and for local governments, 40 CFR 280.104, 280.105, 280.106, and/or 280.107, all as referenced in Section 2. The demonstration shall be executed on forms provided by the department.

(b) An owner and/or operator may use a guarantee under 40 CFR 280.96 or surety bond under 40 CFR 280.98, both as referenced in Section 2, only if the Wyoming Attorney General submits in writing to the department that the guarantee or surety bond is executed as described in the CFR and is a legally valid and enforceable obligation in Wyoming.

(c) An owner and/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 Part, the

financial statements of the owner and/or operator are not consolidated with the financial statements of the guarantor.

(d) The department's trust and agency account will serve as the standby trust fund as described in 40 CFR 280.103, as referenced in Section 2, which is required in conjunction with a guarantee, surety bond, and letter of credit.

Section 55. General Provisions for Allowable Mechanisms.

(a) *Self-Insurance, Guarantee, Local Government Financial Test, or Local Government Guarantee.*

(i) The application and letter from the Chief Financial Officer shall be executed on forms provided by the department.

(ii) Audited financial statements prepared and certified by an independent certified public accountant shall accompany the self-insurance or guarantee financial test to document data submitted.

(iii) In the case of a guarantee, the owner and/or operator shall submit documentation verifying the guarantor's power and authority to enter into guarantee agreements on behalf of the owner and/or operator.

(iv) Within 60 days of owner and/or operator submission of all materials necessary to base a decision, the administrator shall make a determination on the self-insurance or guarantee financial test. The administrator shall approve or reject such application and declare, in writing, the reasons for such action. The decision shall be based on all information submitted to the department.

(b) *Insurance and Risk Retention Group Coverage.*

(i) The certificate of insurance shall be submitted on a form acceptable to the Department.

(ii) The insurance shall be issued by a company licensed to do business in Wyoming.

(iii) Surplus line carriers shall be in compliance with the surplus lines laws under the Wyoming Insurance Code.

(iv) Risk retention groups shall be registered with the Wyoming Department of Insurance.

(c) *Surety Bond.*

(i) The surety bond shall be executed on forms provided by the department.

(ii) The surety company shall be licensed to do business in Wyoming.

(iii) The bond shall be signed by an authorized Wyoming resident agent.

(d) *Letter of Credit.* The letter of credit shall be executed in the format provided by the department.

(e) *Trust Fund.* The trust agreement shall be executed on forms provided by the department.

(f) *Standby Trust Fund* (required in conjunction with guarantee, surety bond, or letter of credit). The department's Trust and Agency Account shall serve as the standby trust fund.

(g) *Bond Rating Test for Local Governments or Local Government Fund.* The letter from the chief financial officer shall be executed on forms provided by the department.

(*h) Local Government Fund.* The letter from the chief financial officer shall be executed on forms provided by the department.

Section 56. Financial Assurance Mechanism Substitutions.

(a) An owner and/or operator may substitute an alternate financial assurance mechanism, provided that at all times an effective financial assurance mechanism or combination of mechanisms that satisfy the requirements of this Part is maintained.

(b) After obtaining alternate financial assurance and concurrence by the administrator, an owner and/or operator may cancel a financial assurance mechanism by providing notice to the financial assurance provider.

Section 57. Cancellation or Nonrenewal by a Financial Assurance Provider.

(a) Except as otherwise provided, a financial assurance provider may cancel or fail to renew an assurance mechanism by sending a notice of termination by certified mail to the owner and/or operator and the department.

(i) A local government guarantee, guarantee, surety bond, or letter of credit may not be terminated until 120 days after the date on which the owner and/or operator and the department receive the notice of termination, as evidenced by the return receipt. Additionally, termination may not occur without the administrator's written consent, which shall be granted only when the conditions of the financial assurance have been met.

(ii) Insurance, risk retention group coverage, or state funded assurance termination may not occur until 60 days after the date on which the owner and/or operator and the department receive the notice of termination, as evidenced by the return receipt.

(b) If a financial responsibility provider cancels or fails to renew for reasons other than provider incapacity as specified in Section 58, the owner and/or operator shall obtain alternate coverage as specified in this Part within 60 days after receipt of the notice of termination. If the owner and/or operator fails to obtain alternate coverage within 60 days after receipt of the notice of termination, the owner and/or operator shall notify the administrator of such failure before the 60-day period ends and submit:

(i) The financial assurance provider's name and address;

(ii) The effective date of termination; and

(iii) Evidence of financial assurance mechanism subject to the termination maintained in accordance with Section 58(b).

(c) The department shall provide notification by mail to owners and/or operators using the state Corrective Action and Financial Responsibility Accounts whenever either account is

incapable of paying for assured corrective actions or third-party damages. The owner and/or operator shall have 30 days from the date of notification to provide alternate financial assurance.

(d) Self insurance may be cancelled by the owner and/or operator only after 90 day's notice to the administrator, and upon receipt of the administrator's written consent. Administrator's consent shall be granted only when the requirements of the bond have been fulfilled.

Section 58. Reporting by Owner and/or Operator Not Eligible for the State Corrective Action Account.

(a) An owner and/or operator who receives notification of the following shall notify the department within 5 days of:

(i) Commencement of any proceeding under Title 11 (Bankruptcy), U.S. Code, naming a provider of financial assurance as a debtor;

(ii) Suspension or revocation of the authority of a provider of financial assurance to issue a financial assurance mechanism;

(iii) Failure of a guarantor to meet the requirements of the financial test;

(iv) Other incapacity of a provider of financial assurance; or

(v) As required by 40 CFR 280.95(g), as referenced in Section 2, and Section 57 of this Chapter.

(b) An owner and/or operator shall obtain and submit evidence of financial responsibility as required by Section 59(b) within 30 days of the owner and/or operator receiving any notices under Section 58(a).

(c) An owner and/or operator shall report to the administrator as required by 40 CFR 280.95(g), as referenced in Section 2, concerning self insurance.

(d) Reporting is required under the conditions of Section 57(b).

(e) An owner and/or operator of a new UST installation shall certify compliance with the financial responsibility requirements in accordance with Section 9 and W.S. § 35-11-1419.

Section 59. Recordkeeping.

(a) Owners and/or operators shall maintain evidence of all financial assurance mechanisms used to demonstrate financial responsibility under this Part until released from the requirements under Section 61. An owner and/or operator shall maintain such evidence at the UST site or the owner's and/or operator's place of business. Records maintained off site shall be made available upon request by the department.

(b) The following financial responsibility evidence shall be maintained:

(i) Copy of the instrument worded as specified in the CFR for assurance mechanisms specified in 40 CFR 280.95 through 280.99, 280.102, or 280.104 through 280.107, all as referenced in Section 2.

(ii) Copy of the chief financial officer's letter based on year-end financial statements for the most recently completed financial reporting year for a financial test or guarantee. Such evidence shall be on file no later than 120 days after the close of the financial reporting year.

(iii) Copy of the bond rating published within the last 12 months by Moody's or Standard & Poor's for a local government bond rating test.

(iv) Copy of the guarantor's bond rating published within the last 12 months by Moody's or Standard & Poor's for a local government guarantee where the guarantor's demonstration of financial responsibility relies on the bond rating test.

(v) 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 for an insurance policy or risk retention group coverage.

(vi) The following documents for a local government fund:

(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 recently completed financial reporting year showing the amount in the fund. If the fund is established using incremental funding backed by bonding authority, the financial statements shall show the previous year's balance, the amount of funding during the year, and the closing balance in the fund.

(C)_ If the fund is established using incremental funding backed by bonding authority, also maintain documentation of the required bonding authority, including either the results of a voter referendum or attestation by the State Attorney General.

(vii) Copy of the guarantor's year-end financial statements for the most recently completed financial reporting year showing the amount of the fund for a local government guarantee supported by the local government fund.

(viii) Updated copy of a certification of financial responsibility for any assurance mechanism specified in 40 CFR 280.95 through 280.99, 280.102, or 280.104 through 280.107, all as referenced in Section 2. The certification shall be worded as follows (except that instructions in brackets are to be replaced with the relevant information):

Certification of Financial Responsibility

[Owner and/or operator name] hereby certifies that it is in compliance with the requirements of the Wyoming Solid and Hazardous Division Rules and Regulations, Storage Tank Program, Chapter 1, Part N.

The financial assurance mechanism(s) used to demonstrate financial responsibility under this Chapter 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 if the mechanism covers "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental

releases" or "non-sudden accidental releases" or "accidental releases."]

[Signature of owner and/or operator, name of owner and/or operator, title, date], [signature of witness or notary, name of witness or notary, and date].

(ix) The owner and/or operator shall update this certification whenever the financial assurance mechanism(s) used to demonstrate financial responsibility change(s).

Section 60. Drawing on Financial Assurance Mechanisms.

(a) 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 department's Trust and Agency Account, which operates as a standby trust if:

(i) The owner and/or operator fails to establish alternate financial assurance within 60 days after receiving notice of cancellation of the guarantee, surety bond, letter of credit, or, as applicable, other financial assurance mechanism; and the administrator determines or suspects that a release from a UST covered by the mechanism has occurred and so notifies the owner and/or operator, or the owner and/or operator has notified the administrator pursuant to Part E of a release from a UST covered by the mechanism; or

(ii) The conditions of Section 60(b)(i) or 60(b)(ii)(A) or (B) are satisfied.

(b) The administrator may draw on a standby trust fund when:

(i) 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 and/or operator, after appropriate notice and opportunity to comply, has not conducted corrective action as required under Part E.

(ii) The administrator has received either:

(A) Certification from the owner and/or operator, the third-party liability claimant(s), and both party's attorneys that a third-party liability claim should be paid. The certification shall be worded as specified in 40 CFR 280.112, as referenced in Section 2, or

(B) A valid final court order establishing a judgment against the owner and/or operator for bodily injury or property damage caused by an accidental release from a UST covered by financial assurance under this Part and the administrator determines that the owner and/or operator has not satisfied the judgment.

(c) If the administrator determines that the corrective action costs and third-party liability claims eligible for payment under Section 60(b) may exceed the balance of the standby trust fund and the obligation of the financial assurance provider, 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 Section 60(b)(ii)(A) and valid court orders under Section 60(b)(ii)(B).

Section 61. Release from the Requirements. An owner and/or operator is no longer required to maintain financial responsibility under this Part for a UST after the tank has been properly closed or, if corrective action is required, after corrective action has been completed and the tank has been properly closed in accordance with Part G.

Section 62. Bankruptcy or Other Incapacity of Owner and/or Operator or Financial Assurance Guarantor. Within 10 days after commencement of any proceeding under Title 11 (Bankruptcy), U.S. Code, naming a guarantor providing financial assurance as debtor, such guarantor shall notify the owner and/or operator by certified mail of such commencement as required under the terms of the guarantee specified in 40 CFR 280.96, as referenced in Section 2.

Section 63. Replenish Guarantee, Letter of Credit, or Surety Bonds.

(a) Any time after a financial assurance mechanism is drawn on by the administrator below the full amount of required coverage, the owner and/or operator shall:

(i) By the anniversary date of the financial mechanism, replenish the value of financial assurance to equal the full amount of required coverage; or

(ii) By the anniversary date of the financial mechanism, acquire another financial assurance mechanism for the amount by which funds have been reduced; or

(iii) Within 30 days of the withdrawal of the deductible amount required under the state fund mechanism, replenish the value of the required deductible coverage.

(b) If at any time after a standby trust fund is funded upon the instruction of the administrator with funds drawn from a guarantee, letter of credit, or surety bond, and the amount in the standby trust is reduced below the full amount of coverage required, the owner and/or operator shall by the anniversary date of the financial mechanism from which the funds were drawn:

(i) Replenish the value of financial assurance to equal the full amount of coverage required; or

(ii) Acquire another financial assurance mechanism for the amount by which funds in the standby trust have been reduced.

(c) For purposes of this Section, the full amount of coverage required is the amount of coverage to be provided by Section 53. If a combination of mechanisms is used to provide the assurance funds which are drawn upon, replenishment shall occur by the date of the mechanism with the earliest anniversary date.

APPENDIX A

Hazardous Substances.

The following is a list of chemical compounds considered to be hazardous substances by the tank program. Any tank containing any of these substances shall meet the standards found in Section 17 of this chapter.

TABLE 6
REGULATED HAZARDOUS SUBSTANCES

CAS Number	Substance Name	Synonyms
630206	1,1,1,2-Tetrachloroethane	Ethane, 1,1,1,2-tetrachloro-
79345	1,1,2,2-Tetrachloroethane	Ethane, 1,1,2,2-tetrachloro-
79005	1,1,2-Trichloroethane	Ethane, 1,1,2-trichloro-
78999	1,1-Dichloropropane	
120821	1,2,4-Trichlorobenzene	
156605	1,2-Dichloroethylene	Ethene, 1,2-dichloro- (E)
122667	1,2-Diphenylhydrazine	Hydrazine, 1,2-diphenyl-
106887	1,2-Epoxybutane	
106990	1,3,-Butadiene	
142289	1,3-Dichloropropane	
542756	1,3-Dichloropropene	1-Propene, 1,3-dichloro-
1120714	1,3-Propane sultone	1,2-Oxathiolane, 2,2-dioxide
764410	1,4-Dichloro-2-butene	2-Butene, 1,4-dichloro-
123911	1,4-Dioxane	1,4-Diethylenedioxide
130154	1,4-Naphthoquinone	1,4-Naphthalenedione
5344821	1-(o-Chlorophenyl)thiourea	Thiourea, (2-chlorophenyl)-
591082	1-Acetyl-2-thiourea	Acetamide, N-(aminothioxomethyl)-
71363	1-Butanol	n-Butyl alcohol
504609	1-Methylbutadiene	1,3-Pentadiene
1464535	2,2'-Bioxirane	1,2:3,4-Diepoxybutane
540841	2,2,4-Trimethylpentane	
75990	2,2-Dichloropropionic acid	
15950660	2,3,4-Trichlorophenol	

CAS Number	Substance Name	Synonyms
933788	2,3,5-Trichlorophenol	
933755	2,3,6-Trichlorophenol	
1746016	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	
78886	2,3-Dichloropropene	
1319728	2,4,5-T amines	
6369977	2,4,5-T amines	
3813147	2,4,5-T amines	
6369966	2,4,5-T amines	
2008460	2,4,5-T amines	
1928478	2,4,5-T esters	
61792072	2,4,5-T esters	
2545597	2,4,5-T esters	
93798	2,4,5-T esters	
25168154	2,4,5-T esters	
13560991	2,4,5-T salts	
32534955	2,4,5-TP esters	
1320189	2,4-D Ester	
1928616	2,4-D Ester	
53467111	2,4-D Ester	
94791	2,4-D Ester	
94804	2,4-D Ester	
1928387	2,4-D Ester	
1929733	2,4-D Ester	
2971382	2,4-D Ester	
94111	2,4-D Ester	
25168267	2,4-D Ester	
94757	2,4-D, salts and esters	Acetic acid (2,4-dichlorophenoxy)-2,4-D Acid
120832	2,4-Dichlorophenol	Phenol, 2,4-dichloro-
105679	2,4-Dimethylphenol	Phenol, 2,4-dimethyl-
121142	2,4-Dinitrotoluene	Benzene, 1-methyl-2,4-dinitro-
329715	2,5-Dinitrophenol	

CAS Number	Substance Name	Synonyms
87650	2,6-Dichlorophenol	Phenol, 2,6-dichloro-
573568	2,6-Dinitrophenol	
606202	2,6-Dinitrotoluene	Benzene, 2-methyl-1,3-dinitro-
532274	2-Chloroacetophenone	
95578	2-Chlorophenol	o-Chlorophenol; Phenol, 2-chloro-
88755	2-Nitrophenol	o-Nitrophenol
79469	2-Nitropropane	Propane, 2-nitro-
91941	3,3'-Dichlorobenzidine	[1,1'-Biphenyl]-4,4'diamine,3,3' dichloro-
119904	3,3'-Dimethoxybenzidine	[1,1'-Biphenyl]-4,4'diamine,3,3'dimethoxy-
119937	3,3'-Dimethylbenzidine	[1,1'Biphenyl]-4,4'-diamine,3,3'-dimethyl-
609198	3,4,5-Trichlorophenol	
610399	3,4-Dinitrotoluene	
542767	3-Chloropropionitrile	Propanenitrile, 3-chloro-
56495	3-Methylcholanthrene	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-
101779	4,4'-Methylenedianiline	
534521	4,6-Dinitro-o-cresol and salts	Phenol, 2-methyl-4,6-dinitro-
92671	4-Aminobiphenyl	
504245	4-Aminopyridine	4-Pyridinamine
101553	4-Bromophenyl phenyl ether	Benzene, 1-bromo-4-phenoxy-
3165933	4-Chloro-o-toluidine, hydrochloride	Benzenamine, 4-chloro-2-methyl-, hydrochloride
7005723	4-Chlorophenyl phenyl ether	
92933	4-Nitrobiphenyl	
83329	Acenaphthene	
208968	Acenaphthylene	
60355	Acetamide	
53963	Acetamide, N-9H-fluoren-2-yl-	2-Acetylaminofluorene

CAS Number	Substance Name	Synonyms
71432	Acetic Acid	
64197	Acetic Acid	
93765	Acetic acid, (2,4, -trichlorophenoxy)	2,4,5-T; 2,4,5-T acid
108247	Acetic anhydride	
67641	Acetone	2-Propanone
75865	Acetone cyanohydrin	Propanenitrile, 2-hydroxy-2-methyl-2-Methyllactonitril
75058	Acetonitrile	
98862	Acetophenone	Ethanone, 1-phenyl-
506967	Acetyl bromide	
75365	Acetyl chloride	
107028	Acrolein	2-Propenal
79061	Acrylamide	2-Propenamide
79107	Acrylic acid	2-Propenoic acid
107131	Acrylonitrile	2-Propenenitrile
124049	Adipic acid	
116063	Aldicarb	Propanal, 2-methyl-2-(methylthio)- ,O-[(methylamino)carbonyl]oxime
309002	Aldrin	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha, 4alpha, 4abeta, 5alpha, 8alpha, 8abeta)-
107186	Allyl alcohol	2-Propen-1-ol
107051	Allyl chloride	
959988	alpha - Endosulfan	
122098	alpha,alpha-Dimethylphenethylamine	Benzeneethanamine, alpha,alpha-dimethyl-
319846	alpha-BHC	
134327	alpha-Naphthylamine	1-Naphthalenamine
20859738	Aluminum phosphide	
10043013	Aluminum sulfate	
61825	Amitrole	1H-1,2,4-Triazol-3-amine

CAS Number	Substance Name	Synonyms
7664417	Ammonia	
631618	Ammonium acetate	
1863634	Ammonium benzoate	
1066337	Ammonium bicarbonate	
7789095	Ammonium bichromate	
1341497	Ammonium bifluoride	
10192300	Ammonium bisulfite	
1111780	Ammonium carbamate	
506876	Ammonium carbonate	
12125029	Ammonium chloride	
7788989	Ammonium chromate	
3012655	Ammonium citrate, dibasic	
13826830	Ammonium fluoborate	
12125018	Ammonium fluoride	
1336216	Ammonium hydroxide	
5972736	Ammonium oxalate	
6009707	Ammonium oxalate	
14258492	Ammonium oxalate	
131748	Ammonium picrate	Phenol, 2,4,6-trinitro-, ammonium salt
16919190	Ammonium silicofluoride	
7773060	Ammonium sulfamate	
12135761	Ammonium sulfide	
10196040	Ammonium sulfite	
14307438	Ammonium tartrate	
3164292	Ammonium tartrate	
1762954	Ammonium thiocyanate	
7803556	Ammonium vanadate	Vanadic acid, ammonium salt
628637	Amyl acetate	
62533	Aniline	Benzenamine
120127	Anthracene	
7440360	Antimony **	
7647189	Antimony pentachloride	

CAS Number	Substance Name	Synonyms
28300745	Antimony potassium tartrate	
7789619	Antimony tribromide	
10025919	Antimony trichloride	
7783564	Antimony trifluoride	
1309644	Antimony trioxide	
12674112	Aroclor 1016	POLYCHLORINATED BIPHENYLS (PCBs)
11104282	Aroclor 1221	POLYCHLORINATED BIPHENYLS (PCBs)
11141165	Aroclor 1232	POLYCHLORINATED BIPHENYLS (PCBs)
53469219	Aroclor 1242	POLYCHLORINATED BIPHENYLS (PCBs)
12672296	Aroclor 1248	POLYCHLORINATED BIPHENYLS (PCBs)
11097691	Aroclor 1254	POLYCHLORINATED BIPHENYLS (PCBs)
11096825	Aroclor 1260	POLYCHLORINATED BIPHENYLS (PCBs)
7440382	Arsenic **	
7778394	Arsenic acid	Arsenic acid H3AsO4
1327522	Arsenic acid	Arsenic acid H3AsO4
1303328	Arsenic disulfide	
1303282	Arsenic pentoxide	Arsenic oxide As2O5
7784341	Arsenic trichloride	
1327533	Arsenic trioxide	Arsenic oxide As2O3
1303339	Arsenic trisulfide	
1332214	Asbestos ***	
492808	Auramine	Benzenamine, 4,4'-carbonimidoylbis (N,N-dimethyl-
115026	Azaserine	L-Serine, diazoacetate (ester)
151564	Aziridine	Ethylenimine
75558	Aziridine, 2-methyl-	1,2-Propylenimine

CAS Number	Substance Name	Synonyms
542621	Barium cyanide	
57976	Benz[a]anthracene, 7,12-dimethyl-.	7,12-Dimethylbenz[a]anthracene
225514	Benz[c]acridine	
98873	Benzal chloride	Benzene, dichloromethyl-
95534	Benzenamine, 2-methyl-	o-Toluidine
99558	Benzenamine, 2-methyl-5-nitro-	5-Nitro-o-toluidine
101144	Benzenamine, 4,4'-methylenebis(2-chloro-	4,4'-Methylenebis(2-chloroaniline)
100016	Benzenamine, 4-nitro-	p-Nitroaniline
60117	Benzenamine, N,N-dimethyl-4-(phenylazo-)	p-Dimethylaminoazobenzene
65850	Benzene	
95943	Benzene, 1,2,4,5-tetrachloro-	1,2,4,5-Tetrachlorobenzene
95501	Benzene, 1,2-dichloro-	o-Dichlorobenzene; 1,2-Dichlorobenzene
99354	Benzene, 1,3,5-trinitro-	1,3,5-Trinitrobenzene
98099	Benzenesulfonyl chloride	Benzenesulfonic acid chloride
92875	Benzidine	(1,1'-Biphenyl)-4,4'diamine
207089	Benzo(k)fluoranthene	
56553	Benzo[a]anthracene	Benz[a]anthracene; 1,2-Benzanthracene
50328	Benzo[a]pyrene	3,4-Benzopyrene
205992	Benzo[b]fluoranthene	
191242	Benzo[ghi]perylene	
100470	Benzonitrile	
98077	Benzotrichloride	Benzene, (trichloromethyl)-
98884	Benzoyl chloride	
100447	Benzyl chloride	Benzene, chloromethyl-
7440417	Beryllium **	Beryllium dust **
7787475	Beryllium chloride	
7787497	Beryllium fluoride	
13597994	Beryllium nitrate	

CAS Number	Substance Name	Synonyms
7787555	Beryllium nitrate	
319857	beta-BHC	
33213659	beta-Endosulfan	
91598	beta-Naphthylamine	2-Naphthalenamine
57573	beta-Propiolactone	
92524	Biphenyl	
598312	Bromoacetone	2-Propanone, 1-bromo-
75252	Bromoform	Methane, tribromo-
357573	Brucine	Strychnidin-10-one, 2,3-dimethoxy-
123864	Butyl acetate	
85687	Butyl benzyl phthalate	
109739	Butylamine	
107926	Butyric acid	
75605	Cacodylic acid	Arsenic acid, dimethyl-
7440439	Cadmium **	
543908	Cadmium acetate	
7789426	Cadmium bromide	
10108642	Cadmium chloride	
7778441	Calcium arsenate	
52740166	Calcium arsenite	
75207	Calcium carbide	
13765190	Calcium chromate	Chromic acid H2CrO4, calcium salt.
156627	Calcium cyanamide	
592018	Calcium cyanide	Calcium cyanide Ca(CN)2
26264062	Calcium dodecylbenzenesulfonate	
7778543	Calcium hypochlorite	
105602	Caprolactam	
133062	Captan	
615532	Carbamic acid, methylnitroso-, ethyl ester	N-Nitroso-N-methylurethane
63252	Carbaryl	

CAS Number	Substance Name	Synonyms
1563662	Carbofuran	
75150	Carbon disulfide	
353504	Carbon oxyfluoride	Carbonic difluoride
56235	Carbon tetrachloride	Methane, tetrachloro-
463581	Carbonyl sulfide	
120809	Catechol	
75876	Chloral	Acetaldehyde, trichloro-
133904	Chloramben	
305033	Chlorambucil	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-
57749	Chlordane	Chlordane, alpha & gamma isomers; Chlordane, technical 2,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-
7782505	Chlorine	
494031	Chlornaphazine	Naphthalenamine, N,N'-bis(2-chloroethyl)-
107200	Chloroacetaldehyde	Acetaldehyde, chloro-
79118	Chloroacetic acid	
108907	Chlorobenzene	Benzene, chloro-
510156	Chlorobenzilate	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester
124481	Chlorodibromomethane	
75003	Chloroethane	
67663	Chloroform	Methane, trichloro-
107302	Chloromethyl methyl ether	Methane, chloromethoxy-
126998	Chloroprene	
7790945	Chlorosulfonic acid	
2921882	Chlorpyrifos	
1066304	Chromic acetate	
11115745	Chromic acid	

CAS Number	Substance Name	Synonyms
7738945	Chromic acid	
10101538	Chromic sulfate	
7440473	Chromium **	
10049055	Chromous chloride	
218019	Chrysene	1,2-Benzphenanthrene
7789437	Cobaltous bromide	
544183	Cobaltous formate	
14017415	Cobaltous sulfamate	
7440508	Copper **	
544923	Copper cyanide	Copper cyanide CuCN
56724	Coumaphos	
8001589	Creosote	
1319773	Cresol(s)	Cresylic acid; Phenol, methyl-
4170303	Crotonaldehyde	2-Butenal
123739	Crotonaldehyde	2-Butenal
98828	Cumene	Benzene, 1-methylethyl-
142712	Cupric acetate	
12002038	Cupric acetoarsenite	
7447394	Cupric chloride	
3251238	Cupric nitrate	
5893663	Cupric oxalate	
7758987	Cupric sulfate	
10380297	Cupric sulfate, ammoniated	
815827	Cupric tartrate	
57125	Cyanides (soluble salts and complexes) not otherwise specified	
460195	Cyanogen	Ethanedinitrile
506683	Cyanogen bromide	Cyanogen bromide (CN)Br
506774	Cyanogen chloride	Cyanogen chloride (CN)Cl
110827	Cyclohexane	Benzene, hexahydro-
108941	Cyclohexanone	

CAS Number	Substance Name	Synonyms
50180	Cyclophosphamide	2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide
20830813	Daunomycin	5,12-Naphthacenedione, 8-acetyl-10-[3-amino-2,3,6-trideoxy-alpha-L-lyxooo-hexo- pyranosyl)oxy]-7,8,9,10- tetrahydro-6,8,11-trihydroxy-1-methoxy-, (8S-cis)-
72548	DDD	Benzene, 1,1'-(2,2-dichloroethylidene)bis[4-chloro-; TDE; 4,4'DDD
3547044	DDE	
72559	DDE	4,4' DDE
50293	DDT	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-; 4,4'DDT
319868	delta-BHC	
117840	Di-n-octyl phthalate	1,2-Benzenedicarboxylic acid, dioctyl ester
621647	Di-n-propylnitrosamine	1-Propanamine, N-nitroso-N-propyl-
2303164	Diallate	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester
333415	Diazinon	
334883	Diazomethane	
189559	Dibenz[a,i]pyrene	Benzo[rst]pentaphene
53703	Dibenzo[a,h]anthracene	Dibenz[a,h]anthracene; 1,2:5,6-Dibenzanthracene
132649	Dibenzofuran	
84742	Dibutyl phthalate	Di-n-butyl phthalate; n-Butyl phthalate; 1,2-Benzenedicarboxylic acid, dibutyl ester

CAS Number	Substance Name	Synonyms
1918009	Dicamba	
1194656	Dichlobenil	
117806	Dichlone	
25321226	Dichlorobenzene	
75274	Dichlorobromomethane	
75718	Dichlorodifluoromethane	Methane, dichlorodifluoro-
111444	Dichloroethyl ether	Bis (2-chloroethyl) ether; Ethane, 1,1'-oxybis[2-chloro-
108601	Dichloroisopropyl ether	Propane, 2,2'-oxybis[2-chloro-
111911	Dichloromethoxy ethane	Bis(2-chloroethoxy) methane; Ethane, 1,1'-[methylenebis(oxy)] bis(2-chloro-
542881	Dichloromethyl ether	Methane, oxybis(chloro-
696286	Dichlorophenylarsine	Arsonous dichloride, phenyl-
26638197	Dichloropropane	
8003198	Dichloropropane-Dichloropropene (mixture)	
26952238	Dichloropropene	
62737	Dichlorvos	
115322	Dicofol	
60571	Dieldrin	2,7:3,6-Dimethanonaphth[2,3-b]; oxirene, 3,4,5,6,9,9-hexachloro-; 1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta, 6aalpha,7beta, 7aalpha)-
111422	Diethanolamine	
84662	Diethyl phthalate	1,2-Benzenedicarboxylic acid, diethyl ester
64675	Diethyl sulfate	
109897	Diethylamine	

CAS Number	Substance Name	Synonyms
692422	Diethylarsine	Arsine, diethyl-
117817	Diethylhexyl phthalate	Bis (2-ethylhexyl)phthalate; 1,2-Benzenedicarboxylic acid, [bis(2-ethylhexyl)] ester
56531	Diethylstilbestrol	Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E)
94586	Dihydrosafrole	1,3-Benzodioxole, 5-propyl-
55914	Diisopropylfluorophosphate	Phosphorofluoridic acid, bis(1-methylethyl) ester
60515	Dimethoate	Phosphorodithioic acid, O,O-dimethyl S-[2(methylamino)-2-oxoethyl] ester
68122	Dimethyl formamide	
131113	Dimethyl phthalate	1,2-Benzenedicarboxylic acid, dimethyl ester
77781	Dimethyl sulfate	Sulfuric acid, dimethyl ester
124403	Dimethylamine	Methanamine, N-methyl-
79447	Dimethylcarbamoyl chloride	Carbamic chloride, dimethyl-
25154545	Dinitrobenzene (mixed)	
25550587	Dinitrophenol	
25321146	Dinitrotoluene	
88857	Dinoseb	Phenol, 2-(1-methylpropyl)-4,6-dinitro
142847	Dipropylamine	1-Propanamine, N-propyl-
2764729	Diquat	
85007	Diquat	
298044	Disulfoton	Phosphorodithioic acid, o,o-diethyl S-[2-(ethylthio)ethyl] ester
541537	Dithiobiuret	Thioimidodicarbonic diamide [(H2N)C(S)]2NH
330541	Diuron	
27176870	Dodecylbenzenesulfonic acid	

CAS Number	Substance Name	Synonyms
115297	Endosulfan	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide
1031078	Endosulfan sulfate	
145733	Endothall	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid
72208	Endrin	Endrin, & metabolites; 2,7:3,6-Dimethanonaphth[2,3-b] oxirene, 3,4,5,6,9,9 - hexachloro-1a,2,2a,3, 6,6a,7,7a-octa-hydro-, (1aalpha, 2beta,2abeta,3alpha,6alpha,6abeta,7beta, 7aalpha)-
7421934	Endrin aldehyde	
106898	Epichlorohydrin	Oxirane, (chloromethyl)-
51434	Epinephrine	1,2-Benzenediol,4-[1-hydroxy-2-(methylamino)ethyl]-
75070	Ethanal	Acetaldehyde
55185	Ethanamine, N-ethyl-N-nitroso-	N-Nitrosodiethylamine
110758	Ethene, 2-chloroethoxy-	2-Chloroethyl vinyl ether
563122	Ethion	
141786	Ethyl acetate	Acetic acid, ethyl ester
140885	Ethyl acrylate	2-Propenoic acid, ethyl ester
51796	Ethyl carbamate (urethane)	Carbamic acid, ethyl ester
107120	Ethyl cyanide	Propanenitrile
60297	Ethyl ether	Ethane, 1,1'-oxybis-
97632	Ethyl methacrylate	2-Propenoic acid, 2-methyl-, ethyl ester
62500	Ethyl methanesulfonate	Methanesulfonic acid, ethyl ester

CAS Number	Substance Name	Synonyms
100414	Ethylbenzene	
106934	Ethylene dibromide	Ethane, 1,2-dibromo-
107062	Ethylene dichloride	Ethane, 1,2-dichloro- 1,2-Dichloroethane
107211	Ethylene glycol	
110805	Ethylene glycol monoethyl ether	Ethanol, 2-ethoxy-
111546	Ethylenebisdithiocarbamic acid, salts & esters	Carbamodithioic acid, 1,2-ethanediylbis, salts & esters
107153	Ethylenediamine	
60004	Ethylenediamine-tetraacetic acid (EDTA)	
96457	Ethylenethiourea	2-Imidazolidinethione
75343	Ethylidene dichloride	Ethane, 1,1-dichloro- 1,1-Dichloroethane
52857	Famphur	Phosphorothioic acid, O,[4-[(di-methylamino) sulfonyl] phenyl] O, O-dimethyl ester
1185575	Ferric ammonium citrate	
55488874	Ferric ammonium oxalate	
2944674	Ferric ammonium oxalate	
7705080	Ferric chloride	
7783508	Ferric fluoride	
10421484	Ferric nitrate	
10028225	Ferric sulfate	
10045893	Ferrous ammonium sulfate	
7758943	Ferrous chloride	
7720787	Ferrous sulfate	
7782630	Ferrous sulfate	
206440	Fluoranthene	Benzo[j,k]fluorene
86737	Fluorene	
7782414	Fluorine	
640197	Fluoroacetamide	Acetamide, 2-fluoro-

CAS Number	Substance Name	Synonyms
62748	Fluoroacetic acid, sodium salt	Acetic acid, fluoro-, sodium salt
50000	Formaldehyde	
64186	Formic acid	
110178	Fumaric acid	
110009	Furan	Furfuran
98011	Furfural	2-Furancarboxaldehyde
765344	Glycidylaldehyde	Oxiranecarboxyaldehyde
86500	Guthion	
76448	Heptachlor	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-
1024573	Heptachlor epoxide	
118741	Hexachlorobenzene	Benzene, hexachloro-
87683	Hexachlorobutadiene	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
608731	Hexachlorocyclohexane (all isomers)	
77474	Hexachlorocyclopentadiene	1,3-Cyclopentadiene,1,2,3,4,5,5-hexachloro-
67721	Hexachloroethane	Ethane, hexachloro-
70304	Hexachlorophene	Phenol, 2,2'-methylenebis[3,4,6-trichloro-
1888717	Hexachloropropene	1-Propene, 1,1,2,3,3,3-hexachloro-
757584	Hexaethyl tetraphosphate	Tetraphosphoric acid, hexaethyl ester
822060	Hexamethylene-1,6-diisocyanate	
680319	Hexamethylphosphoramide	
110543	Hexane	
302012	Hydrazine	
57147	Hydrazine, 1,1-dimethyl-	1,1-Dimethylhydrazine

CAS Number	Substance Name	Synonyms
540738	Hydrazine, 1,2-dimethyl-	1,2-Dimethylhydrazine
7647010	Hydrochloric acid	Hydrogen chloride
7664393	Hydrofluoric acid	Hydrogen fluoride
74908	Hydrogen cyanide	Hydrocyanic acid
7783064	Hydrogen sulfide	Hydrogen sulfide H2S
80159	Hydroperoxide, 1-methyl-1-phenylethyl-	alpha,alpha-Dimethylbenzylhydroperoxide
123319	Hydroquinone	
193395	Indeno(1,2,3-cd)pyrene	1,10-(1,2-Phenylene)pyrene
123922	iso-Amyl acetate	
110190	iso-Butyl acetate	
78819	iso-Butylamine	
79312	iso-Butyric acid	
78831	Isobutyl alcohol	1-Propanol, 2-methyl-
465736	Isodrin	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro, (1alpha,4alpha,4abeta,5beta,8beta,8abeta)-
78591	Isophorone	
78795	Isoprene	
42504461	Isopropanolamine dodecylbenzenesulfonate	
120581	Isosafrole	1,3-Benzodioxole, 5-)1-propenyl)-
143500	Kepone	1,3,4-Metheno-2H-cyclobutal[cd] pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachloroctahydro-

CAS Number	Substance Name	Synonyms
303344	Lasiocarpine	2-Butenoic acid, 2-methyl-, 7[[2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxobutoxy]methyl]-2,3,5,7a-tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z), 7(2S*,3R*),7aalpha]]-
7439921	Lead **	
301042	Lead acetate	Acetic acid, lead(2+) salt
7645252	Lead arsenate	
10102484	Lead arsenate	
7784409	Lead arsenate	
7758954	Lead chloride	
13814965	Lead fluoborate	
7783462	Lead fluoride	
10101630	Lead iodide	
10099748	Lead nitrate	
7446277	Lead phosphate	Phosphoric acid, lead(2+) salt (2:3)
7428480	Lead stearate	
52652592	Lead stearate	
56189094	Lead stearate	
1072351	Lead stearate	
1335326	Lead subacetate	Lead, bis(acetato-O)tetrahydroxytri
15739807	Lead sulfate	
7446142	Lead sulfate	
1314870	Lead sulfide	
592870	Lead thiocyanate	
58899	Lindane	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha,6beta)-; gamma-BHC; Hexachlorocyclohexane (gamma isomer)

CAS Number	Substance Name	Synonyms
14307358	Lithium chromate	
108394	m-Cresol	m-Cresylic acid
541731	m-Dichlorobenzene	Benzene, 1,3-dichloro; 1,3-Dichlorobenzene
99650	m-Dinitrobenzene	
554847	m-Nitrophenol	
99081	m-Nitrotoluene	
108383	m-Xylene	m-Benzene, dimethyl
121755	Malathion	
110167	Maleic acid	
108316	Maleic anhydride	2,5-Furandione
123331	Maleic hydrazide	3,6-Pyridazinedione, 1,2-dihydro-
109773	Malononitrile	Propanedinitrile
148823	Melphalan	L-Phenylalanine, 4-[bis(2-chloroethyl) aminol]
2032657	Mercaptodimethur	
592041	Mercuric cyanide	
10045940	Mercuric nitrate	
7783359	Mercuric sulfate	
592858	Mercuric thiocyanate	
10415755	Mercurous nitrate	
7782867	Mercurous nitrate	
7439976	Mercury	
628864	Mercury fulminate	Fulminic acid, mercury (2+) salt
126987	Methacrylonitrile	2-Propenenitrile, 2-methyl-
67561	Methanol	Methyl alcohol
91805	Methapyrilene	1,2-Ethanediamine, N,N-dimethyl-N' -2-pyridinyl-N'-(2-thienylmethyl)-

CAS Number	Substance Name	Synonyms
16752775	Methomyl	Ethanimidothioic acid, N-[[(methyl-amino)carbonyl]oxy]-, methyl ester
72435	Methoxychlor	Benzene, 1,1'-(2,2,2-trichloroethylidene) bis[4-methoxy-
74839	Methyl bromide	Methane, bromo-
74873	Methyl chloride	Methane, chloro-
79221	Methyl chlorocarbonate	Carbonochloridic acid, methyl ester; Methyl chloroformate
71556	Methyl chloroform	Ethane, 1,1,1-trichloro-; 1,1,1-Trichloroethane
78933	Methyl ethyl ketone (MEK)	2-Butanone
1338234	Methyl ethyl ketone peroxide	2-Butanone peroxide
60344	Methyl hydrazine	Hydrazine, methyl-
74884	Methyl iodide	Methane, iodo-
108101	Methyl isobutyl ketone	4-Methyl-2-pentanone
624839	Methyl isocyanate	Methane, isocyanato-
80626	Methyl methacrylate	2-Propenoic acid, 2-methyl-, methyl ester
298000	Methyl parathion	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester
1634044	Methyl tert-butyl ether	
74953	Methylene bromide	Methane, dibromo-
75092	Methylene chloride	Methane, dichloro-
101688	Methylene diphenyl diisocyanate	MDI
56042	Methylthiouracil	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-
7786347	Mevinphos	
315184	Mexacarbate	

CAS Number	Substance Name	Synonyms
50077	Mitomycin C	Azirino[2',3':3,4]pyrrolo[1,2-a] indole-4,7-dione,6-amino-8-[[(aminocarbonyl)oxy] methyl]-1,1a, 2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-, [1aS-(1aalpha, 8beta, 8aalpha, 8balpha)]-
70257	MNNG	Guanidine, N-methyl-N'-nitro-N-nitroso-
75047	Monoethylamine	
74895	Monomethylamine	
2763964	Muscimol	3(2H)-Isoxazolone, 5-(aminomethyl)-; 5-(Aminomethyl)-3-isoxazolol
1615801	N,N'-Diethylhydrazine	Hydrazine, 1,2-diethyl-
121697	N,N-Diethyl aniline	N,N-Dimethylaniline
759739	N-Nitroso-N-ethylurea	Urea, N-ethyl-N-nitroso-
924163	N-Nitrosodi-n-butylamine	1-Butanamine, N-butyl-N-nitroso-
1116547	N-Nitrosodiethanolamine	Ethanol, 2,2'-(nitrosoimino)bis-
62759	N-Nitrosodimethylamine	Methanamine, N-methyl-N-nitroso-
86306	N-Nitrosodiphenylamine	
4549400	N-Nitrosomethylvinylamine	Vinylamine, N-methyl-N-nitroso-
59892	N-Nitrosomorpholine	
100754	N-Nitrosopiperidine	Piperidine, 1-nitroso-
930552	N-Nitrosopyrrolidine	Pyrrolidine, 1-nitroso-
107108	n-Propylamine	1-Propanamine
300765	Naled	
91203	Naphthalene	
91587	Naphthalene, 2-chloro-	beta-Chloronaphthalene 2-Chloronaphthalene
1338245	Naphthenic acid	

CAS Number	Substance Name	Synonyms
7440020	Nickel **	
15699180	Nickel ammonium sulfate	
13463393	Nickel carbonyl	Nickel carbonyl Ni(CO)4, (T-4)-
37211055	Nickel chloride	
7718549	Nickel chloride	
557197	Nickel cyanide	Nickel cyanide Ni(CN)2
12054487	Nickel hydroxide	
14216752	Nickel nitrate	
7786814	Nickel sulfate	
54115	Nicotine, & salts	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-
7697372	Nitric acid	
10102439	Nitric oxide	Nitrogen oxide NO
98953	Nitrobenzene	Benzene, nitro-
10544726	Nitrogen dioxide	Nitrogen oxide NO3
10102440	Nitrogen dioxide	Nitrogen oxide NO2
55630	Nitroglycerine	1,2,3-Propanetriol, trinitrate-
25154556	Nitrophenol (mixed)	
1321126	Nitrotoluene	
3288582	O,O-Diethyl S-methyl dithiophosphate	Phosphorodithioic acid, O,O-diethyl S-methyl ester
90040	o-Anisidine	
95476	o-Benzene, dimethyl	o-Xylene
95487	o-Cresol	o-Cresylic acid
528290	o-Dinitrobenzene	
88722	o-Nitrotoluene	
636215	o-Toluidine hydrochloride	Benzenamine, 2-methyl-, hydrochloride
152169	Octamethylpyrophosphoramide	Diphosphoramide, octamethyl-
20816120	Osmium tetroxide	Osmium oxide OsO4 (T-4)-
75218	Oxirane	Ethylene oxide

CAS Number	Substance Name	Synonyms
106514	p-Benzoquinone	2,5-Cyclohexadiene-1,4-dione
106478	p-Chloroaniline	Benzenamine, 4-chloro-
106445	p-Cresol	p-Cresylic acid
106467	p-Dichlorobenzene	Benzene,1,4-dichloro 1,4-Dichlorobenzene
100254	p-Dinitrobenzene	
99990	p-Nitrotoluene	
106503	p-Phenylenediamine	
106490	p-Toluidine	Benzenamine, 4-methyl-
106423	p-Xylene	p-Benzene, dimethyl
30525894	Paraformaldehyde	
123637	Paraldehyde	1,3,5-Trioxane, 2,4,6-trimethyl-
56382	Parathion	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester
608935	Pentachlorobenzene	Benzene, pentachloro-
76017	Pentachloroethane	Ethane, pentachloro-
82688	Pentachloronitrobenzene (PCNB)	Benzene, pentachloronitro-
87865	Pentachlorophenol	Phenol, pentachloro-
62442	Phenacetin	Acetamide, N-(4-ethoxyphenyl)-
85018	Phenanthrene	
108952	Phenol	Benzene, hydroxy-
58902	Phenol, 2,3,4,6-tetrachloro-	2,3,4,6-Tetrachlorophenol
95954	Phenol, 2,4,5-trichloro-	2,4,5-Trichlorophenol
88062	Phenol, 2,4,6-trichloro-	2,4,6-Trichlorophenol
51285	Phenol, 2,4-dinitro-	2,4-Dinitrophenol
131895	Phenol, 2-cyclohexyl-4,6-dinitro-.	2-Cyclohexyl-4,6-dinitrophenol
59507	Phenol, 4-chloro-3-methyl-	p-Chloro-m-cresol; 4-Chloro-m-cresol

CAS Number	Substance Name	Synonyms
100027	Phenol, 4-nitro-	p-Nitrophenol; 4-Nitrophenol
62384	Phenylmercury acetate	Mercury, (acetato-O)phenyl-
103855	Phenylthiourea	Thiourea, phenyl-
298022	Phorate	Phosphorodithioic acid, O,O-diethyl S-(ethylthio), methyl ester
75445	Phosgene	Carbonic dichloride
7803512	Phosphine	
7664382	Phosphoric acid	
311455	Phosphoric acid, diethyl 4-nitrophenyl ester	Diethyl-p-nitrophenyl phosphate
297972	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester	O,O-Diethyl O-pyrazinyl phosphorothioate
7723140	Phosphorus	
7719122	Phosphorus trichloride	
10025873	Phosphrous oxycloride	
85449	Phthalic anhydride	1,3-Isobenzofurandione
1336363	Polychlorinated Biphenyls (PCBs)	
7784410	Potassium arsenate	
10124502	Potassium arsenite	
7778509	Potassium bichromate	
7789006	Potassium chromate	
151508	Potassium cyanide	Potassium cyanide K (CN)
1310583	Potassium hydroxide	
7722647	Potassium permanganate	
506616	Potassium silver cyanide	Argentate (1-), bis(cyano-C)-, potassium
23950585	Pronamide	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-
96128	Propane, 1,2-dibromo-3-chloro-	1,2-Dibromo-3-chloropropane
2312358	Propargite	
107197	Propargyl alcohol	2-Propyn-1-ol

CAS Number	Substance Name	Synonyms
123386	Propionaldehyde	
79094	Propionic acid	
123626	Propionic anhydride	
114261	Propoxur	
78875	Propylene dichloride	Propane, 1,2-dichloro-; 1,2-Dichloropropane
75569	Propylene oxide	
129000	Pyrene	
8003347	Pyrethrins	
121211	Pyrethrins	
121299	Pyrethrins	
110861	Pyridine	
109068	Pyridine, 2-methyl-	2-Picoline
91225	Quinoline	
50555	Reserpine	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy-, methyl ester (3beta, 16beta,17alpha,18beta,20alpha)-
108463	Resorcinol	1,3-Benzenediol
81072	Saccharin and salts	1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide
94597	Safrole	1,3-Benzodioxole, 5-(2-propenyl)-.
626380	sec-Amyl acetate	
105464	sec-Butyl acetate	
13952846	sec-Butylamine	
513495	sec-Butylamine	
7783008	Selenious acid	
7782492	Selenium **	
7446084	Selenium dioxide	Selenium oxide
7488564	Selenium sulfide	Selenium sulfide SeS2
630104	Selenourea	

CAS Number	Substance Name	Synonyms
7440224	Silver **	
506649	Silver cyanide	Silver cyanide Ag (CN)
7761888	Silver nitrate	
93721	Silvex (2,4,5-TP)	Propionic acid, 2-(2,4,5-trichlorophenoxy)- 2,4,5-TP acid
7440235	Sodium	
7631892	Sodium arsenate	
7784465	Sodium arsenite	
26628228	Sodium azide	
10588019	Sodium bichromate	
1333831	Sodium bifluoride	
7631905	Sodium bisulfite	
7775113	Sodium chromate	
143339	Sodium cyanide	Sodium cyanide Na (CN)
25155300	Sodium dodecylbenzenesulfonate	
7681494	Sodium fluoride	
16721805	Sodium hydrosulfide	
1310732	Sodium hydroxide	
7681529	Sodium hypochlorite	
10022705	Sodium hypochlorite	
124414	Sodium methylate	
7632000	Sodium nitrite	
10140655	Sodium phosphate, dibasic	
10039324	Sodium phosphate, dibasic	
7558794	Sodium phosphate, dibasic	
10124568	Sodium phosphate, tribasic	
7785844	Sodium phosphate, tribasic	
7601549	Sodium phosphate, tribasic	
7758294	Sodium phosphate, tribasic	
10361894	Sodium phosphate, tribasic	
10101890	Sodium phosphate, tribasic	

CAS Number	Substance Name	Synonyms
10102188	Sodium selenite	
7782823	Sodium selenite	
18883664	Streptozotocin	D-Glucose, 2-deoxy-2-[[(methylnitrosoamino)-carbonyl]amino]-; Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-
7789062	Strontium chromate	
57249	Strychnine, & salts	Strychnidin-10-one
100425	Styrene	
96093	Styrene oxide	
12771083	Sulfur monochloride	
1314803	Sulfur phosphide	Phosphorus pentasulfide; Phosphorus sulfide
7664939	Sulfuric acid	
8014957	Sulfuric acid	
625161	tert-Amyl acetate	
540885	tert-Butyl acetate	
75649	tert-Butylamine	
127184	Tetrachloroethylene	Ethene, tetrachloro-; Perchloroethylene; Tetrachloroethene
78002	Tetraethyl lead	Plumbane, tetraethyl-
107493	Tetraethyl pyrophosphate	Diphosphoric acid, tetraethyl ester
3689245	Tetraethyldithiopyrophosphate	Thiodiphosphoric acid, tetraethyl ester
109999	Tetrahydrofuran	Furan, tetrahydro-
509148	Tetranitromethane	Methane, tetranitro-
1314325	Thallic oxide	Thallium oxide Tl203
563688	Thallium (I) acetate	Acetic acid, thallium(1+) salt
6533739	Thallium (I) carbonate	Carbonic acid, dithallium(1+) salt
7791120	Thallium (I) chloride	Thallium chloride TlCl

CAS Number	Substance Name	Synonyms
10102451	Thallium (I) nitrate	Nitric acid, thallium (1+) salt
10031591	Thallium (I) sulfate	Sulfuric acid, dithallium (1+) salt
7446186	Thallium (I) sulfate	Sulfuric acid, dithallium(1+) salt
7440280	Thallium **	
12039520	Thallium selenite	Selenious acid, dithallium(1+) salt
62555	Thioacetamide	Ethanethioamide
39196184	Thiofanox	2-Butanone, 3,3-dimethyl-1-(methylthio)-, O[(methylamino)carbonyl) oxime
74931	Thiomethanol	Methanethiol; Methylmercaptan
108985	Thiophenol	Benzenethiol
79196	Thiosemicarbazide	Hydrazinecarbothioamide
62566	Thiourea	
86884	Thiourea, 1-naphthalenyl-	alpha-Naphthylthiourea
137268	Thiram	Thioperoxydicarbonic diamide [(H2N)C(S)] 2S2, tetramethyl-
7550450	Titanium tetrachloride	
108883	Toluene	Benzene, methyl-
584849	Toluene diisocyanate	Benzene, 1,3-diisocyanatomethyl-
91087	Toluene diisocyanate	
26471625	Toluene diisocyanate	
95807	Toluenediamine	Benzenediamine, ar-methyl-
823405	Toluenediamine	
25376458	Toluenediamine	
496720	Toluenediamine	
8001352	Toxaphene	Camphene, octachloro-
52686	Trichlorfon	

CAS Number	Substance Name	Synonyms
79016	Trichloroethylene	Ethene, trichloro-; Trichloroethene
594423	Trichloromethanesulfenyl chloride	Methanesulfenyl chloride, trichloro-
75694	Trichloromonofluoromethane	Methane, trichlorofluoro-
25167822	Trichlorophenol	
27323417	Triethanolamine dodecylbenzenesulfonate	
121448	Triethylamine	
1582098	Trifluralin	
75503	Trimethylamine	
126727	Tris(2,3-dibromopropyl) phosphate.	1-Propanol, 2,3-dibromo-, phosphate [(3:1)
72571	Trypan blue	2,7-Naphthalenedisulfonic acid, 3,3'-3,3'-dimethyl-(1,1'-biphenyl)-4,4'-diyl)-bis(azo)]bis(5-amino-4-hydroxy)-tetrasodium salt
66751	Uracil mustard	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-
541093	Uranyl acetate	
10102064	Uranyl nitrate	
36478769	Uranyl nitrate	
684935	Urea, N-methyl-N-nitroso	N-Nitroso-N-methylurea
1314621	Vanadium pentoxide	Vanadium oxide V205
27774136	Vanadyl sulfate	
108054	Vinyl acetate	Vinyl acetate monomer
593602	Vinyl bromide	
75014	Vinyl chloride	Ethene, chloro-
75354	Vinylidene chloride	Ethene, 1,1-dichloro-; 1,1-Dichloroethylene
81812	Warfarin, & salts, when present at concentrations greater than 0.3%	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenyl-butyl)-, & salts, when present at concentrations >0.3%

CAS Number	Substance Name	Synonyms
1330207	Xylene (mixed)	Benzene, dimethyl
1300716	Xylenol	
7440666	Zinc **	
557346	Zinc acetate	
52628258	Zinc ammonium chloride	
14639986	Zinc ammonium chloride	
14639975	Zinc ammonium chloride	
1332076	Zinc borate	
7699458	Zinc bromide	
3486359	Zinc carbonate	
7646857	Zinc chloride	
557211	Zinc cyanide	Zinc cyanide Zn(CN)2
7783495	Zinc fluoride	
557415	Zinc formate	
7779864	Zinc hydrosulfite	
7779886	Zinc nitrate	
127822	Zinc phenosulfonate	
1314847	Zinc phosphide	Zinc phosphide Zn3P2, when present at concentrations greater than 10%
16871719	Zinc silicofluoride	
7733020	Zinc sulfate	
13746899	Zirconium nitrate	
16923958	Zirconium potassium fluoride	
14644612	Zirconium sulfate	
10026116	Zirconium tetrachloride	

6863