



Department of Commerce

Division of State Fire Marshal
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BUSTR - Acronyms Used to Describe Underground Storage Tank (UST) Systems, September 2017

<p>(1a) Status</p> <p>CIU - Currently in Use REM - Removed CIP - Closed in Place CIS - Change in Service Other - See Comments (Fee Eligible) OOS1 - OOS (Out of Service) less than 12 months OOS2 - Properly OOS 12+ months OOS3 - Improperly OOS 12+ Months, Viable Owner OOS4 - Improperly OOS 12+ Months, Non-viable Owner</p> <p>(2) UST Configuration</p> <p>SW - Single Wall SCDW - Secondarily Contained Double Walled Tank SCTW - Secondarily Contained Triple Walled Tank Other (explain)</p> <p>(3) UST Construction</p> <p>BM - Bare Metal CCPS - Coated/Cathodically Protected Steel JS - Jacketed Steel CS - Clad Steel FRP - Fiberglass Reinforced Plastic Other (explain)</p> <p>(4) UST Corrosion Protection</p> <p>FACA - Factory Installed Anodes FLDA - Field Installed Anodes IP - Impressed Current ILNCP - Internally Lined No Cathodic Protection LCP - Lined and Cathodically Protected NR - None Required by Rule NP - None Present Other (explain)</p> <p>(5) UST Release Detection</p> <p>ATG - Automatic Tank Gauging IMTD - Dry Int. Monitoring (D/W Tank)(T/W Tank) IMTW - Wet Int. Monitoring (D/W Tank)(T/W Tank) IMO - Int. Monitoring (Other) MTGL - Manual Tank Gauging (< 1000) MTGH - Manual Tank Gauging (1001-2000) NR - None Required by Rule AMSIR - Alternative Method (SIR) AMO - Alternative Method (Other, explain) NP - None Present</p> <p>(6) Piping Configuration</p> <p>SW - Single Wall SC - Secondarily Contained Other (explain)</p> <p>(7) Piping Style</p> <p>P - Pressure S - Suction G - Gravity</p> <p>(8) Piping Construction</p> <p>BM - Bare Metal FRP - Fiberglass Reinforced Plastic FPTP - Flexible Plastic Technology Piping Other (explain)</p>	<p>(9) Piping Corrosion Protection</p> <p>FLDA - Field Installed Anodes IP - Impressed Current NCWG - No Piping In Contact With Ground NR - None Required by Rule NP - None Present Other (explain)</p> <p>(10) Piping Release Detection</p> <p>ELLD - Electronic Line Leak Detector MLLD - Mechanical Line Leak Detector IMT - Int. Monitoring SS - Safe Suction SCVAT - Suction Check Valve at Tank G - Gravity Piping NR - None Required by Rule NP - None Present Other (explain)</p> <p>(11) Ancillary Equipment</p> <p>SUBP - Submersible Pump in Tank SUCP - Suction Pump at Dispensing Location PIV - Piping Isolation Valve at UST SOLV - Solenoid Valve (e.g., marina piping) FLXUST - Flex Connector at UST FLXDSP - Flex Connector Under Dispenser SV - Shear Valve at Dispenser</p> <p>(12) Spill Containment Manhole (Spill Bucket)</p> <p>SBSW - Single Wall Spill Containment Manhole SBDW - Double Wall Spill Containment Manhole NR - None Required by Rule NP - None Present Other (explain)</p> <p>(13) Other Containment Locations</p> <p>TTCT - Tank Top Containment (Tight) TTCNT - Tank Top Containment (Non-Tight) UDCT - Under Dispenser Containment (Tight) UDCNT - Under Dispenser Containment (Non-Tight) PTC - Piping Transition Containment NR - None Required by Rule NP - None Present Other (explain)</p> <p>(14) Containment Release Detection</p> <p>SSLOW - Sump Sensor in Lowest Containment SSALL - Sump Sensors in All Containments NR - None Required by Rule NP - None Present Other (explain)</p> <p>(15) Overfill Prevention</p> <p>FILL - Fill Pipe (drop tube - Shut-off device) VENT - Vent Line (float vent valve - Restrictor Device) ALARM - Alarm NR - None Required by Rule NP - None Present Other (explain)</p>
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BUSTR - Definitions Used to Describe Underground Storage Tank (UST) Systems, September 2017

(1) Disclaimer

It is BUSTR policy that the following acronyms are to be used by BUSTR personnel and licensed professionals when describing UST construction information on BUSTR forms. The acronyms and their meanings are not to be interpreted as prima facie evidence of compliance or non-compliance with Chapter 1301:7-9 of the Administrative Code.

(2) UST Configuration

SW - Single Wall

The tank is constructed of metal or fiberglass and has only one shell between the regulated product and the soil.

SCDW - Secondarily Contained Double Walled Tank

Includes all double-walled tanks with wet or dry interstitial monitoring.

SCTW - Secondarily Contained Triple Walled Tank

Includes all triple-walled tanks with wet or dry interstitial monitoring.

Other (explain) Jackets, external liners and vaults that completely surround the primary tank and prevent the release of the regulated substance to the surrounding soil.

(3) UST Construction

BM - Bare Metal

A tank made of metal such as steel or copper. It does not have cathodic protection, internal lining, or any non-corrodible material that encapsulates or bonds to the outside of the tank.

CCPS - Coated/Cathodically Protected Steel

A steel tank that has both an external coating and cathodic protection. An example of a coated and cathodically protected tank brand is the sti-P3® tank. Every sti-P3® underground storage tank is protected with one of the three generic types of coating that have been tested to Steel Tank Institute (STI) requirements and then approved for adoption into the sti-P3® specification: coal tar epoxy, urethane, or isophthalic polyester resin. This type of tank is usually installed with galvanic (sacrificial) anodes for cathodic protection. However, these tanks may have an impressed current cathodic protection system if the galvanic (sacrificial) anodes no longer protect the tank from corrosion. All sti-P3® tanks must be electrically isolated from all metallic underground structures that will be exposed to backfill. This includes hold down straps installed to prevent the tank from floating out of the excavation during a high water table. Tank openings are electrically isolated by use of dielectric nylon bushings or flange isolators that will be compatible with stored product.

JS - Jacketed Steel

A steel tank that is encapsulated (or jacketed) in a non-corrodible, nonmetallic material such as fiberglass or polyethylene. This tank is secondarily contained. There is a space between the steel wall and the jacket material. This space may be monitored for a breach of either the inner wall or outer jacket. Examples of jacketed tank brands include: Permatank®, Glasteel II®, Titan®, Total Containment®, and Elutron® from Plasteel®

CS - Clad Steel

A steel tank that has a thick layer of non-corrodible material such as fiberglass or urethane that is mechanically bonded (clad) to the outside of the steel tank. This cladding helps protect the outside of the steel wall from corroding. Examples of clad tank brands include: ACT-100®, ACT-100-U®, Glasteel® and Plasteel®.

FRP - Fiberglass Reinforced Plastic

A tank made of fiberglass reinforced plastic. Examples of current and past FRP tank makers include: Owens® Corning®, Xerxes®, Cardinal®, Fluid Containment®, and Containment Solutions®.

Other (explain)

(4) UST Corrosion Protection

FACA - Factory Installed Anodes

Sacrificial anodes (usually zinc and magnesium) are installed at the factory and attached to the tank. StiP3 tanks come with factory installed anodes.

FLDA – Field Installed Anodes

Holes are drilled at predetermined locations around the tank and sacrificial bag anodes (usually zinc and magnesium) are placed in the ground and attached to the tank. These types of anodes degrade and must be periodically replaced. Many of these types of anodes were installed during the 1998 upgrade period to meet the cathodic protection requirement for older tanks.

IP - Impressed Current

Holes are drilled at predetermined locations around the tank and anodes (usually graphite, high silicon cast iron and mixed-metal oxides) are placed in the ground and attached to a rectifier that produces a small electrical current that flows between the anode and the tank, thus protecting the tank from oxidation.

ILNCP - Internally Lined No Cathodic Protection

A BUSTR approved lining (coating) is applied to the internal surface of the steel tank essentially becoming the tank and relying on the steel tank shell for structural support. No additional cathodic protection has been added to the tank.

LCP - Lined and Cathodically Protected

A BUSTR approved lining (coating) is applied to the internal surface of the steel tank essentially becoming the tank and relying on the steel tank shell for structural support. Cathodic Protection, usually impressed current, is added to the steel tank shell to protect it from corrosion.

NR – None Required by Rule

Fiberglass Reinforced Plastic tanks and some steel tanks such as ACT-100 tanks are constructed in such a manner that no additional cathodic protection is required.

NP – None Present

This should only be used for steel tanks where no required cathodic protection exists and indicates a violation may exist.

Other (explain)

(5) UST Release Detection

ATG - Automatic Tank Gauging

An ATG system provides information on product level and temperature with a probe permanently installed in a tank and wired to a monitor. ATG systems automatically calculate the changes in product volume that can indicate a leaking tank.

IMTD - Dry Interstitial Monitoring (Double & Triple Walled Tanks)

Interstitial Monitoring for tanks shall have an interstitial monitoring method that can detect a release through the inner wall in any portion of the tank that routinely contains a regulated substance.

- An automatic monitoring device must operate continuously and signal the operator if a failure occurs.
- The interstice must be checked at least once a month at the bottom of the interstitial space and show no indication of failure.

IMTW - Wet Interstitial Monitoring (Double & Triple Walled Tanks)

Interstitial Monitoring for tanks shall have an interstitial monitoring method that can detect a release through the inner wall in any portion of the tank that routinely contains a regulated substance.

- An automatic monitoring device must operate continuously and signal the operator if a failure occurs.
- The interstice must be checked at least once a month and show no indication of failure.

IMO - Int. Monitoring (Other)

Excavation Zone Liner: The testing method can detect a release between the UST system and the secondary barrier. This method is extremely rare and the requirements are nearly, if not impossible to meet in Ohio due to Ohio's climate. The requirements are listed in 1301:-9-07(D)(3)(b)(i) to (vii).

Internally Fitted Tank Liner: This method requires an automated device that can detect a release between the inner wall of the tank and the liner. This method is also extremely rare.

MTGL - Manual Tank Gauging (< 1000)

Manual tank gauging involves a person sticking the tank and watching for a drop-in liquid levels. This method is for small tanks of 1,000-gallons or less and requires the tank to be out of service for 36-58 hours each week.

This method may be used only for tanks of 1,000 gallons or less capacity meeting certain requirements:

- 550 gallons or less (No additional requirements)
- 551-1000 gallons (Diameter is 48-inches)
- 551-1000 gallons (Diameter is 64-inches)
- 551-1000 gallons (Alternate diameter, tightness test every 5-years)

MTGH - Manual Tank Gauging (1001-2000)

Manual tank gauging involves a person sticking the tank and watching for a drop-in liquid levels. This method is for small tanks of 1,001-2000 gallons and requires the tank to be out of service for 36 hours each week. This method requires that a tank tightness test is conduct at least every five years.

NR - None Required by Rule

The following are the only tanks exempt from release detection:

- Wastewater treatment tank systems.
- Any UST systems containing radioactive material that are regulated under the Atomic Energy Act of 1954.
- Any UST system that is part of an emergency generator system at nuclear power plant generation facilities regulated by the United States nuclear regulatory commission.
- Above ground storage tanks associated with airport hydrant fuel distribution systems or field constructed tank system.

AMSIR – Alternative Method (SIR)

Statistical inventory reconciliation (SIR) is typically a method in which a trained professional uses sophisticated computer software to conduct a statistical analysis of inventory, delivery, and dispensing data.

- You must supply the professional with data every month. Computer programs enable an owner or operator to perform SIR. In either case, the result of the analysis may be pass, inconclusive, or fail.
- SIR may not be used to meet release detection requirements for piping.
- In order to use SIR, you must use a qualified vendor.

AMO – Alternative Method (Other, explain)

Any alternative method can be used if approved in writing by the State Fire Marshal. Any alternative method allowed by the State Fire Marshal shall be properly monitored, operated and maintained in accordance with any terms and conditions imposed by the State Fire Marshal. The method shall produce a result at least every thirty days.

NP - None Present

This should only be used for tanks where no required release detection exists and indicates a violation may exist.

(6) Piping Configuration**SW - Single Wall**

The piping is constructed of metal, fiberglass or flexible technology material and has only one shell between the regulated product and the soil. Some owners have installed double walled flexible technology piping, however it is only considered to be single walled unless it begins and ends in appropriate containment sumps that prevent the release of regulated substance to the environment.

SC – Secondarily Contained

This includes piping that is double walled and uses tank top containment, dispenser containment and piping transition sumps that totally enclose the primary piping, prevent the introduction of ground water and prevent the regulated substance from escaping to the environment. This can also include trench liners, however they are extremely rare.

Other (explain)

(7) Piping Style

P - Pressure

Delivers regulated substance under pressure to the dispensing location by means of a pump located at the tank.

S – Suction

Pulls the regulated substance through the primary piping by means of a suction pump located at the dispensing location, normally in the bottom of the dispensing unit.

G - Gravity

This type of configuration is normally associated with waste oil (used oil) tanks and the regulated substance flows by gravity into the tank. There are no pumps associated with this configuration.

(8) Piping Construction

BM - Bare Metal

This is metal piping that requires additional corrosion protection.

FRP - Fiberglass Reinforced Plastic

This piping is non-metal and is made of fiberglass reinforced plastic. It is a rigid piping (not flexible). Examples of FRP piping makers include Ameron® and Smith Fiberglass Products Inc®. This piping type may also have metal connectors associated with it.

FPTP - Flexible Plastic Technology Piping

This type of piping is made of plastic that is flexible. Examples of nonmetal flexible piping brand names include: Poly-Tech®, Dualoy 3000®, EnviroFlex®, GeoFlex®, Perma-Flex®, Omniflex®, and Co-Flex™. This piping type may also have metal connectors associated with it.

Other (explain)

(9) Piping Corrosion Protection

FLDA - Field Installed Anodes

Holes are drilled at predetermined locations around the piping and sacrificial bag anodes (usually zinc and magnesium) are placed in the ground and attached to the piping. These types of anodes degrade and must be periodically replaced. Many of these types of anodes were installed during the 1998 upgrade period to meet the cathodic protection requirement for older piping systems.

IP - Impressed Current

Holes are drilled at predetermined locations around the piping and anodes (usually graphite, high silicon cast iron and mixed-metal oxides) are placed in the ground and attached to a rectifier that produces a small electrical current that flows between the anode and the piping, thus protecting the piping from oxidation.

NCWG - No Piping In Contact With Ground

This configuration is normally associated with copper emergency generator piping that is run through a non-metallic raceway to prevent it from having contact with the surrounding soil. It is only used as a barrier between the piping and the soil and is in no way meant to represent a double walled piping system. This can also include properly installed “above ground” piping.

NR – None Required by Rule

This should be used for Fiberglass Reinforced Plastic, Flexible Technology Piping and in some instances piping that is installed through a raceway to prevent any contact with the surrounding soil. Remember that many of these types of piping use metal connectors and that they must also be protected from corrosion. BUSTR has approved the use of isolation sleeves that can be placed over these connectors to prevent corrosion as long as they are compatible with the regulated substance. This can also include properly installed “Above ground” piping.

NP - None Present

This should only be used for metal piping where no cathodic protection exists and indicates a violation may exist.

Other (explain)

(10) Piping Release Detection

ELLD - Electronic Line Leak Detector

Electronic LLD'S have an electronic detection element that connects to an electronic control panel and monitors for piping releases.

MLLD - Mechanical Line Leak Detector

Mechanical LLD'S are mechanically operated pressure valves that test for piping leaks each time the pump is turned on.

IMT - Interstitial Monitoring

Must be performed on all new piping installed after May 16, 2011 and must be capable of detecting a release from the inner or outer wall of the piping, and sensors must be installed in every containment and be able to detect a release of regulated substance before it reached the lowest penetration in the containment. Extensive information is available for requirements for piping installed prior to May 16th, 2011 in 1301:7-9-07 of the Administrative Code.

SS - Safe Suction

- The underground piping operates at less than atmospheric pressure;
- The underground piping is sloped so that the contents of the piping will drain back into the tank if the suction is released;
- Only one check valve is included in each suction line; and
- The check valve is located directly below and as close as practical to the suction pump.

SCVAT – Suction Check Valve at Tank

A check valve is present in the suction line at the tank top or inside the tank.

G - Gravity Piping

This type of piping flows unrestricted into the tank and is not attached to any type of pumping mechanism.

NR - None Required by Rule

The following are the only tanks exempt from release detection:

- Wastewater treatment tank systems.
- Any UST systems containing radioactive material that are regulated under the Atomic Energy Act of 1954.
- Any UST system that is part of an emergency generator system at nuclear power plant generation facilities regulated by the United States nuclear regulatory commission.
- Above ground storage tanks associated with airport hydrant fuel distribution systems or field constructed tank system.

NP - None Present

This should only be used for metal piping where no release detection exists and indicates a violation may exist.

Other (explain)

(11) Ancillary Equipment

SUBP - Submersible Pump

A pump located inside the storage tank, positioned near the bottom of the tank, thereby “submerged” in the fuel. Also referred to as a “turbine” pump, it is used in pressure systems.

SUCP –Suction Pump

A fuel dispensing device that incorporates a suction pump to pull regulated substance through the lines and is usually located in the base of the dispensing unit.

PIV - Piping Isolation Valve at UST

Any valve placed in the fill or dispensing piping to shut off the flow of regulated substance. Isolation valves are used to prevent the flow of regulated substance into or out of the tank during maintenance and other operations.

SOLV – Solenoid Valve (e.g., marina piping)

An electrically operated, normally closed, magnetic valve which prevents siphon flow from the tank to the dispenser or product line.

FLXUST – Flex Connector at UST

A method of connecting the primary piping to the tank top or pump where a change of direction is required. Flexible Connectors dampen the effect of ground and or piping movement. Flexible Connectors are normally limited to a maximum 90 degree bend.

FLXDSP - Flex Connector Under Dispenser

A method of connecting the primary piping to the shear valve under the dispenser or suction pump where a change of direction is required. Flexible Connectors dampen the effect of ground and or piping movement. Flexible Connectors are normally limited to a maximum 90 degree bend.

SV - Shear Valve at Dispenser

A device mounted within the fuel line, directly beneath the dispenser or pump, which shuts off product flow in the event the dispensing unit is dislocated or overturned. The top section shears off, causing the valve to close. A fusible link releases typically in the event of fire, allowing the valve to close.

(12) Spill Prevention Equipment

SBSW - Single Walled Spill Bucket

An assembly installed around the fill connection which will hold a limited amount of regulated substance, typically 5 gallons, which may have been spilled upon the disconnect of the delivery fitting or in the event of tank overflow.

SBDW - Double Walled Spill Bucket

An Double Walled assembly installed around the fill connection which will hold a limited amount of regulated substance, typically 5 gallons, which may have been spilled upon the disconnect of the delivery fitting or in the event of tank overflow.

NR – None Required by Rule

This only affects UST systems installed prior to 1 March 2005. Existing waste oil tanks receiving delivery into the tank of less than 25 gallons per occurrence fall into this category.

NP - None Present

This should only be used for fill connections where no required spill containment exists and indicates a violation may exist.

Other (explain)

(13) Other Containment Locations

TTCT – Tank Top Containment (Tight)

A liquid tight compartment, typically enclosing the turbine pump and piping connections at the top of an underground storage tank, which would provide containment of any product spills. All new UST installations after 1 March 2005 must be tight. All “Hazardous Substance” systems are required to have tight containment sumps.

TTCNT - Tank Top Containment (Non-Tight)

A liquid non-tight compartment, typically enclosing the turbine pump and piping connections at the top of an underground storage tank. This only applies to UST installations prior to 1 March 2005.

UDCT - Under Dispenser Containment (Tight)

A liquid tight compartment, typically used under regulated substance dispensers, which would provide containment of any product spills. All new UST installations after 1 March 2005 must be tight. All “Hazardous Substance” systems are required to have tight containment sumps.

UDCNT - Under Dispenser Containment (Non-Tight)

A liquid non-tight compartment, typically used under regulated substance dispensers, which would provide containment of any product spills. This only applies to UST installations prior to 1 March 2005.

PTC - Piping Transition Containment

A liquid tight compartment where piping transitions, typically used in long piping runs for elevation changes, and compartments, regardless of installation date must be monitored with liquid sensors.

NR - None Required by Rule

The following are the only tanks exempt from release detection:

- Wastewater treatment tank systems.
- Any UST systems containing radioactive material that are regulated under the Atomic Energy Act of 1954.
- Any UST system that is part of an emergency generator system at nuclear power plant generation facilities regulated by the United States nuclear regulatory commission.
- Above ground storage tanks associated with airport hydrant fuel distribution systems or field constructed tank system.

NP – None Present

This only applies to UST systems where containment is required and has not been installed and indicates a violation may exist.

Other (explain)**(14) Containment Release Detection****SSLOW – Sump Sensor in Lowest Containment**

A sump sensor is a sensing device located in the Lowest system containment, typically at the tank top that is capable of detecting the release of regulated substance before it reaches the lowest penetration in the containment and notifying the operator that a problem exists.

SSALL – Sump Sensors in All Containments

A sump sensors are sensing devices located in all system containments capable of detecting the release of regulated substance before it reaches the lowest penetration in the containment and notifying the operator that a problem exists.

NR - None Required by Rule

This only applies to systems installed prior to 1 March 2005. Sump Sensors are required to be installed in all containments associated with new UST systems installed after 1 March 2005. All “Hazardous Substance” systems are required to have containment release detection.

NP - None Present

This only applies to UST systems where Sump Sensors are required and have not been installed and indicates a violation may exist.

Other (explain)**(15) Overfill Prevention****FILL - Fill Pipe (drop tube flapper) “Shut-Off Device”**

This type of device is normally a mechanical device that will shut off the flow of regulated substance into the tank when the tank is no more than 95% full.

VENT - Vent Line (float vent valve) “Restrictor Device”

Ball float valves (i.e. ball vent) are a type of overfill protection device that function by restricting vapor flow in an UST vent line during delivery at 90% of UST’s capacity or 30 minutes prior to over filling. Ball float valves cannot be installed or replaced for use as overfill protection after September 1, 2017. However, you may continue using ball float valves already installed as long as they operate properly. This device shall not be used with any type of suction system, UST’s receiving pressurized deliveries or UST coaxial stage I vapor recovery

ALARM – Alarm

This type of device should alert the transfer operator by a high level alarm when the tank is no more than 90% full, or when used in conjunction with a restriction device one minute before overfilling.

NR - None Required by Rule

This only affects UST systems installed prior to 1 March 2005. Existing waste oil tanks receiving delivery into the tank of less than 25 gallons per occurrence fall into this category.

NP - None Present

This should only be used for fill connections where no Overfill Device exists and indicates a violation may exist.

Other (explain)