# Syracuse University Petroleum Bulk Storage Tank Program Manual

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# 1. Introduction

The purpose of the Syracuse University Petroleum Bulk Storage Tank Program Manual is to assist University personnel in achieving and maintaining compliance with applicable state and federal petroleum bulk storage tank regulations. This manual provides a summary of the regulatory requirements and best management practices that must be adhered to for the University's petroleum bulk storage tanks.

Regulatory Agencies & Applicable Regulations

Petroleum bulk storage (PBS) tanks are regulated at the state level by the New York State Department of Environmental Conservation (NYSDEC). The state regulations pertaining to PBS tanks were enacted as Title 10 of Article 17 of the NYS Environmental Conservation Law and are codified in 6 NYCRR Part 613. At the federal level, PBS tanks are regulated by the United States Environmental Protection Agency (USEPA). The federal regulations pertaining to PBS tanks were enacted as Subtitle I of the Resource Conservation and Recovery Act (RCRA) and are codified in 40 CFR Part 280.

PBS tanks are categorized as either aboveground storage tanks (ASTs) or underground storage tanks (USTs). State PBS tank regulations apply to both USTs and ASTs, whereas the federal PBS tank regulations only apply to USTs.

The state regulations only apply to facilities that have one or more petroleum bulk storage tanks with a combined storage capacity of greater than 1,100 gallons or if a facility has a single UST with a storage capacity greater than 110 gallons.[1] If a facility does not exceed either of those thresholds, then the facility and its tanks are not regulated by the state under 6 NYCRR Part 613.

The federal regulations only apply to applicable USTs that have a capacity greater than 110 gallons.[2]

USTs vs ASTs

USTs are defined by both the state and federal regulations as any stationary tank that has ten percent or more of its volume beneath the surface of the ground or is covered by materials.[3] However, tanks that are situated in an accessible underground area such as a basement, cellar, or tunnel are not considered USTs if the tank is situated upon or above the surface of the floor.

ASTs are defined by the state regulations as any stationary tank that is not a UST.[4] As previously stated, the federal PBS tank regulations contained in 40 CFR Part 280 only apply to USTs and therefore do not apply to ASTs.

It is important to note that there are federal regulations which are applicable to petroleum storage in ASTs and other containers, however the majority of those requirements fall under the Spill Prevention,

[1] §613-1.3(v)(1)
[2] 40 CFR 280.10(a)
[3] §613-1.3(br) for State and 40 CFR 280.12 for Federal
[4] §613-1.3(a)

Control, and Countermeasure (SPCC) regulations that are codified in 40 CFR Part 112. Please note that this manual is not intended to address the requirements of the SPCC regulations. To address those requirements, the University has developed specific SPCC Plans for each of the facilities where the SPCC regulations apply. For additional information regarding the University's SPCC Plans, please contact Environmental Health and Safety Services (EHSS) at (315) 443-4132.

It is also important to note that the state PBS regulations and the federal PBS regulations only apply to stationary tanks. The state regulations define stationary as a device that is not mobile; examples of stationary devices include tank systems that are fixed or permanently in place on foundations, racks, cradles, or stilts.[5] The federal PBS regulations do not provide a definition for stationary, as the federal regulations only apply to USTs, which are stationary by definition.

# 2. Registration Requirements

Facilities with petroleum bulk storage tanks must be registered with NYSDEC if the facility has one or more tanks that have a combined storage capacity of greater than 1,100 gallons or if the facility has a single UST with a storage capacity greater than 110 gallons.[6]

The University currently has four registered PBS facilities:

1) Main (North) Campus — PBS Number 7-437190
2) Steam Station — PBS Number 7-180602
3) Physical Plant — PBS Number 7-129054
4) Minnowbrook Conference Center — PBS Number 5-463701

The registration must include all tanks at the facility and must be renewed every five years from the date of the last valid registration. The registration must also be revised/amended when new tanks are installed or any existing tanks are modified, closed, or removed from the facility. EHSS is responsible for submitting the required application to NYSDEC for new, revised, and renewal tank registrations. All registration fees are the responsibility of the University department/division that owns, operates, and/or procures the tank system(s).

The registration application requires that the following information be provided to NYSDEC for every tank at the facility:

- Storage Capacity
- Product Stored
- Construction of Tank
- Tank External Protection
- Tank Secondary Containment
- Tank Leak Detection
- Tank Overfill Protection
- Tank Spill Prevention
- Pumping/Dispensing Method
- Piping Location
- Construction of Piping
- Piping External Protection
- Piping Secondary Containment
- Piping Leak Detection

[5] §613-1.3(bd)
[6] §613-1.3(v) and §613-1.9(a)

EHSS must be notified of any planned modifications that could potentially change the status of any of the previously listed tank or piping characteristics. EHSS will review the planned modification for regulatory compliance and will provide any regulatory notifications that may be required.

Upon receipt of a completed registration application and payment of any applicable registration fees, NYSDEC will issue a registration certificate for the applicable facility to EHSS. The registration certificate must be displayed at all times in a conspicuous location at the facility, such as a main office or near a central tank monitoring system.[7] As a best management practice, EHSS requires that a copy of the tank registration be posted at every tank location. For newly installed tanks, EHSS must receive the new or revised registration certificate from NYSDEC and it must be properly displayed/posted at the facility prior to any petroleum being stored in the new tank.[8]

# 3. Installation of New Tanks and/or Piping

NYSDEC has specific requirements for the design, construction, and installation of new tanks and product piping.[9] EHSS must be notified prior to the procurement of any new tanks or product piping to assess whether the proposed equipment meets the applicable regulatory requirements. Once notified, EHSS will provide the required regulatory notifications (as detailed below) and will assist with reviewing the proposed design specifications. For new ASTs, EHSS has developed a form that summarizes and provides a checklist of requirements for all new ASTs. The form should be completed and submitted to EHSS prior to the procurement of any new ASTs. A copy of the checklist form for new ASTs is included as Appendix A. EHSS does not have a form that is to be completed for new USTs, however EHSS must be notified immediately of any plans to order, purchase, or install any USTs and/or underground piping.

The University's Fire and Life Safety Services must also be notified to assess whether the construction and proposed location of the new tank and/or piping comply with University policies and applicable building and fire codes.

Regulatory Notification Requirements

Facility owners are required to provide notification to NYSDEC at least 30 days prior to the installation of any new tank at a regulated facility.[10] A copy of the form that is required to be submitted to NYSDEC for notification of new tank installations is included as Appendix B. EHSS is responsible for communicating with NYSDEC and submitting the required notification of the tank installation.

[7] §613-1.9(f)
[8] §613-1.9(a)
[9] §613-2.1 for State & Federal USTs, §613-3.1 for State Only USTs, and §613-4.1 for ASTs
[10] §613-1.9(h)

City of Syracuse Requirements

The City of Syracuse has specific requirements regarding the installation, removal, and repair of piping and tank systems that contain flammable and combustible liquid. If a tank is to be installed within the City of Syracuse, city code requires that the installation be performed by a contractor that has a valid flammable and combustible liquid mechanical license issued by the city (also known as a "tank & pipe license").[11] Prior to performing the tank installation, city code requires that the licensed tank contractor submit a permit application to the City's Division of Code Enforcement and file a notice to the Syracuse Fire Department's Fire Prevention Bureau.[12]

The proposed tank installation cannot commence until the permit application has been approved via the issuance of a permit from the Division of Code Enforcement and copies of the following documents have been submitted to EHSS: a copy of the tank contractor's tank & pipe license, a copy of the permit, and copies of all of the permit application documents.

Once the installation is complete, EHSS will submit an application to NYSDEC to amend the facility's registration to include the newly installed tank or piping. As previously stated in Section 2 of this manual, for newly installed tanks or piping, EHSS must receive the new or revised registration certificate from NYSDEC and it must be properly displayed/posted at the facility prior to any petroleum being stored in the new tank.[13]

Installation Recordkeeping Requirements for USTs

For all UST systems, as-built information records and an accurate site diagram that meets the requirements of the regulations must be maintained at the facility.[14] For UST systems that are subject to state & federal regulations, records must be maintained of installer certifications for each UST system component that was installed after October 11, 2015.[15]

SU Facilities personnel are responsible for maintaining the as-built information records, required site diagrams, and installer certifications for each UST system. SU Facilities personnel are also responsible for providing copies of this information/documentation to EHSS for secondary backup recordkeeping.

# 4. UST System Requirements

There are two separate subparts within the state regulation regarding UST system requirements. The first subpart (Subpart 613-2) is applicable to USTs that are subject to both the state and federal regulations. The second subpart (Subpart 613-3) is applicable to USTs that are only subject to the state regulations.

[11] Chapter 9, Article 11, Section 9-116(1) and Section 9-121(2)(a) of the General Ordinances of the City of Syracuse
[12] Chapter 9, Article 11, Section 9-116(2) and Section 9-124(1) of the General Ordinances of the City of Syracuse
[13] §613-1.9(a)
[14] §613-2.1(b)(4)(iii)(a) for State & Federal USTs, §613-3.1(b)(4)(ii) for State Only USTs
[15] §613-2.2(b)(4)(iii)(b) & (c) for State & Federal USTs

USTs are subject to both the state and federal regulations if they have a storage capacity greater than 110 gallons and are used to store a petroleum product other than heating oil for onsite consumption. USTs that store heating oil for onsite consumption are subject to state only regulations. While the majority of the requirements in Subparts 613-2 and 613-3 are the same, there are a number of requirements that are different for UST systems that are subject to state and federal regulations vs UST systems that are subject to state only regulations.
NYSDEC categorizes tank systems into three different categories based on their date of installation:

1) Category 1 tank systems are those that were installed before December 27, 1986.
2) Category 2 tank systems are those that were installed between December 27, 1986 and October 11, 2015.
3) Category 3 tank systems are those that were installed after October 11, 2015.

### 4.1. UST Tank Construction

All USTs must be properly designed, constructed, and protected from corrosion in accordance with the codes of practice listed in the applicable regulation. With regard to construction, all USTs must be constructed of fiberglass-reinforced plastic (FRP), cathodically protected steel, or steel that has been clad or jacketed with a non-corrodible material. [16] All USTs must have double wall construction and must have an interstitial space that is capable of being monitored for potential leaks from the primary tank.[17]

> An interstitial space is the area in a double wall tank that exists between the primary tank and the outer tank shell.

### 4.2. UST Piping Construction

Piping that routinely contains petroleum and is in contact with the ground must be properly designed, constructed, and protected from corrosion according to the codes of practice listed in the applicable regulation. Piping that is in contact with the ground must be constructed of a non-corrodible material or be cathodically protected steel.[18] All underground piping at Syracuse University must have double wall construction or an equivalent form of secondary containment and electronic interstitial monitoring.[19] All underground piping must be installed so that it slopes towards a containment sump, which will allow any product that is released into the interstitial space of the double wall piping to flow to the containment sump where it can be detected by an electronic sensor and activate an alarm. Most underground piping systems are sloped back to the UST, which allows any product released to the interstitial space of the product piping to drain back to the tank top containment sump.

[16] §613-2.1(b)(1) for State & Federal USTs, §613-3.1(b)(1) for State Only USTs
[17] §613-2.1(b)(1)(iv)(b)(1) for State & Federal USTs, §613-3.1(b)(1)(iv)(b)(1) for State Only USTs
[18] §613-2.1(b)(2) for State & Federal USTs, §613-3.1(b)(2) for State Only USTs
[19] §613-2.1(b)(2)(ii) for State & Federal USTs, BMP for State Only USTs

### 4.3. UST Corrosion Protection

All corrosion protection systems must be operated and maintained to provide continuous corrosion protection to the metal components of the UST system that routinely contain petroleum and are in contact with the ground.[20] All cathodic protection systems must be tested within six months of installation and at yearly intervals thereafter.[21] The results of the cathodic protection test must be less than or equal to -0.85 volts for the system to pass the test.[22] Records of cathodic protection testing must be maintained at the facility for a minimum of three years.[23]

SU Facilities personnel are responsible for funding and scheduling all required cathodic protection testing. SU Facilities personnel are also responsible for maintaining the required cathodic protection records and providing copies of the cathodic protection test results to EHSS for secondary backup recordkeeping.

### 4.4. UST Valve Requirements

All pump-filled USTs must be equipped with a check valve (or equivalent device) in the fill pipe to prevent and provide protection against backflow.[24] A check valve is required only when the piping arrangement of the fill pipe is such that backflow from the receiving tank is possible.

For gravity-drained USTs, each connection to the tank through which product can normally flow must be equipped with an operating valve to control the flow.[25]

### 4.5. UST Spill & Overfill Prevention Equipment

Spills and overfills are releases that can occur because of equipment failures and/or operator error during product transfers. In order to prevent spills and overfills from occurring, all USTs must be equipped with a product level gauge, a fill port catch basin (i.e., spill bucket), and either an overfill prevention device or a high level alarm.[26] As a best management practice, EHSS recommends that all new USTs installed at the University be equipped with all four of these features.

> An overfill prevention device is typically installed in the fill pipe of the UST and is designed to stop the flow of product into the tank when the UST is no more than 95% full. A high level alarm is a device that provides an audible alarm when a UST is no more than 90% full. A fill port catch basin (i.e., spill bucket) is a containment area that is installed around the fill port of a tank and is designed to collect and contain spills that may occur when product delivery personnel disconnect the product transfer line from the tank after filling.

[20] §613-2.2(b)(1) for State & Federal USTs, §613-3.2(b)(1) for State Only USTs
[21] §613-2.2(b)(2)(i) for State & Federal USTs, §613-3.2(b)(2)(i) for State Only USTs
[22] NACE SP0285-2011, 2011 edition - per §613-2.1(b)(2)(ii)(d) and §613-3.1(b)(2)(ii)
[23] §613-2.2(b)(4) for State & Federal USTs, §613-3.2(b)(3) for State Only USTs
[24] §613-2.1(b)(6)(iii) for State & Federal USTs, §613-3.1(b)(5)(iii) for State Only USTs
[25] §613-2.1(b)(6)(iv) for State & Federal USTs, §613-3.1(b)(5)(iv) for State Only USTs
[26] §613-2.1(b)(3)(i) for State & Federal USTs, §613-3.1(b)(3)(i) for State Only USTs

As an administrative control to prevent spills and overfills, EHSS has developed a Petroleum Product Transfer Procedure, in accordance with NFPA 385 (2012 edition), that is to be followed during all product transfers.[27] A copy of the Petroleum Product Transfer Procedure is included as Appendix C.

SU Facilities personnel are responsible for keeping all gauges, valves, and other equipment for spill prevention in good working order.[28]

Testing Requirements for Spill & Overfill Prevention Equipment

The federal PBS regulations contain testing requirements for spill & overfill prevention equipment and containment sumps used for interstitial monitoring of product piping on UST systems that are subject to state & federal regulations.

For double walled spill buckets and double walled containment sumps used for interstitial monitoring of product piping, the federal regulations require that the integrity of both walls be periodically inspected for visible damage, liquid or debris at least every 30 days.[29] The initial inspection must be completed by October 13, 2018. Records of the 30 day inspections and documentation showing that the equipment is double walled must be maintained for as long as the equipment is periodically monitored.

For single walled spill buckets and single walled containment sumps used for interstitial monitoring of product piping, the federal regulations require that a tightness test be performed to ensure the equipment is liquid tight by using vacuum, pressure, or liquid testing in accordance with manufacturer requirements, recognized codes of practices, or other requirements to be designated by NYSDEC.[30] For existing UST systems, the initial test must be completed by October 13, 2018, and subsequent testing must completed every three years. For new UST systems (those installed after October 13, 2015), the initial test must be performed when the system is installed, with subsequent testing required to be completed every three years. Records of the tightness tests must be maintained for a period of three years.

For overfill prevention equipment, such as an overfill prevention devices and high-level alarms, the federal regulations require that an inspection be completed to ensure that the overfill prevention equipment is set to activate at the correct level and that it will activate when a regulated substance reaches that level.[31] The inspection must be performed in accordance with manufacturer requirements, recognized codes of practices, or requirements to be designated by NYSDEC. For existing UST systems, the initial inspection must be completed by October 13, 2018, and subsequent inspections must be completed every three years. For new UST systems (those installed after October 13, 2015), the initial inspection must be performed when the system is installed, with subsequent inspections

[27] §613-2.2(a)(1) for State & Federal USTs, §613-3.2(a)(1) for State Only USTs
[28] §613-2.2(a)(6) for State & Federal USTs, §613-3.2(a)(6) for State Only USTs
[29] 40 CFR 280.35(a)(1)(i)
[30] 40 CFR 280.35(a)(1)(ii)
[31] 40 CFR 280.35(a)(2)

required to be completed every three years. Records of overfill prevention equipment inspections must be maintained for a period of three years.

SU Facilities personnel are responsible for funding and scheduling (or performing) the required inspections and/or tests of applicable spill & overfill prevention equipment. SU Facilities personnel are also responsible for maintaining the required records and providing copies of the spill & overfill prevention equipment inspection and/or test records to EHSS for secondary backup recordkeeping.

### 4.6. UST Leak Detection Requirements

Every facility must utilize a method, or combination of methods, of leak detection that can detect a leak from any portion of the UST system that routinely contains petroleum.[32]

Leak Detection for USTs

As a best management practice, every UST at Syracuse University must be equipped with an automatic tank gauging system that is capable of detecting a leak rate of at least 0.2 gallons per hour[33] and have continuous electronic monitoring for the tank's interstitial space. [34]

Leak Detection for UST Piping

The two most common types of systems used to deliver fuel through UST product lines are **suction** pumping systems and **pressurized** pumping systems.

> In a suction pumping system, the pumping mechanism is located above grade at the dispenser or piece of equipment requiring fuel, and the fuel is drawn from the UST by suction. Suction piping systems have check valves that keep the supply piping full of liquid when the pump is turned off. The check valve opens whenever fluid is flowing towards the dispenser or equipment requiring fuel, and closes automatically whenever liquid tries to flow back toward the tank. The preferred location for a check valve in the piping system is immediately below/before the suction pump. If a hole develops in suction piping between the check valve and the tank, air will be drawn into the piping and the fuel will flow back toward the tank instead of towards the dispenser or piece of equipment requiring fuel. The air being drawn into the piping will cause the suction pump to malfunction, therefore causing the flow rate and quantity of fuel being delivered to be less than normal.
>
> In a pressurized piping system, the pumping mechanism is located inside the UST near the bottom of the tank. The pump, known as a pressure pump or submersible turbine pump (STP), pushes the fuel under pressure through piping to the dispenser or equipment. Because the pump is located inside the tank and it forces the fuel through the piping under positive pressure,

[32] §613-2.3(a)(1) for State & Federal USTs, §613-3.3(a)(1) for State Only USTs
[33] §613-2.3(c)(4)(i) for State & Federal USTs, §613-3.3(c)(2)(i) for State Only USTs
[34] §613-2.3(b)(ii) for State & Federal USTs, §613-3.3(b)(ii-iii) for State Only USTs

leaks in the product piping may not affect the operation of the fuel dispensing equipment or supply system and therefore the leaks may go unnoticed.

All underground **pressurized** piping systems at Syracuse University must be equipped with automatic line leak detectors and continuous electronic interstitial space monitoring.[35] Automatic line leak detectors on pressurized piping systems must be tested for operability on a yearly basis.[36]

Automatic Line Leak Detectors

Automatic line leak detector (ALLDs) can be either mechanical or electronic.

Mechanical ALLDs are pressure operated valves that are typically installed on the head of the submersible turbine pump and are designed to detect leaks by monitoring pressure each time the pump is turned on to transport product. If there is no pressure build-up in the mechanical ALLD when the pump is turned on, the mechanical ALLD will restrict the flow rate of product to the product lines, therefore any observed reduction in flow must be investigated as a potential leak from the product supply line.

Electronic ALLDs are also installed on the head of the submersible turbine pump, but unlike mechanical ALLDs, they have a detection element which measures flow rate or changes in pressure in the piping and transmits this information through wiring to a control panel (such as an automatic tank gauge or electronic leak detection system) where it will activate an alarm if a potential leak is detected. Electronic ALLDs are preferable to mechanical ALLDs because they can detect smaller leaks and because some models have the capability of completely shutting off the product flow by switching off the power to the pump if the leak rate exceeds a designated threshold.

Continuous Electronic Interstitial Space Monitoring

This method of leak detection is used to monitor leaks from double wall product piping. It requires that the underground piping be installed so that it slope towards a containment sump, which will allow any product that is released into the interstitial space of the double wall piping to flow to the containment sump where it can be detected by an electronic sensor. The sensor in the containment sump continuously monitors for liquid and is wired to a control panel (such as an automatic tank gauge or electronic leak detection system) where it will active an alarm if liquid is detected in the containment sump. Most underground piping systems are sloped back to the UST, which allows any product released to the interstitial space of the product piping to drain back to the tank top containment sump.

[35] §613-2.3(b)(2)(i)(a) and 2.3(b)(2)(ii)(a) for State & Federal USTs, §613-3.3(b)(2)(i) for State Only USTs
[36] §613-2.3(d)(1) for State & Federal USTs, BMP for State Only USTs

All underground **suction** piping systems at Syracuse University must be equipped with continuous electronic interstitial space monitoring[37], unless the suction piping system meets the following exemption.

For UST systems that are subject to state & federal regulations, no leak detection is required for **suction** piping that is designed and constructed to meet the following standards:[38]

a) the piping operates at less than atmospheric pressure;
b) the piping is sloped so that the contents of the pipe will drain back into the UST if the suction is released;
c) only one check valve is included in each suction line; and
d) the check valve is located directly below and as close as practicable to the suction pump.

For UST systems that are subject to state & federal regulations, if the suction piping was installed before October 11, 2015, and does not meet the previously stated exemption requirements, then the suction piping system must have line tightness testing conducted every three years, in addition to having continuous electronic interstitial space monitoring.[39]

For UST systems that are subject to state only regulations, if the suction piping was installed before December 17, 1986, then the suction piping system must have annual line tightness testing conducted.[40]

SU Facilities personnel are responsible for funding and scheduling (or performing) the required ALLD operability and/or product piping tightness tests. SU Facilities personnel are also responsible for maintaining the required records and providing copies of the test records to EHSS for secondary backup recordkeeping.

### 4.7. UST Leak Detection Recordkeeping Requirements

The following leak detection records must be maintained at the facility for the following time periods:[41]

a) The results or records of any sampling, testing, or monitoring must be maintained for at least three years;
b) The results of all tank and line tightness testing must be retained until the next test is conducted (a copy of the results of all tank and line tightness testing must be submitted to NYSDEC within 30 days after performance of the test);
c) Written documentation of all calibration, maintenance, and repair of leak detection equipment permanently located on-site must be maintained for at least three years after the servicing work is completed. Any schedules of required calibration and maintenance

[37] §613-2.3(b)(2)(ii)(b) for State & Federal USTs, BMP for State Only USTs
[38] §613-2.3(b)(2)(i)(b)(1-4) for State & Federal USTs
[39] §613-2.3(b)(2)(i)(b) for State & Federal USTs
[40] §613-3.3(b)(2)(ii) for State Only USTs
[41] §613-2.3(e) for State & Federal USTs, §613-3.3(e) for State Only USTs

provided by the leak detection equipment manufacturer must be retained for three years from the date of installation.

SU Facilities personnel are responsible for maintaining the required records and providing copies of the records to EHSS for secondary backup recordkeeping.

### 4.8. UST Monthly Inspections

All UST systems at Syracuse University must be inspected at monthly intervals using EHSS's Monthly Underground Storage Tank Inspection Form.[42] SU Facilities personnel are responsible for performing the monthly inspections and completing the required form.

The monthly inspection records must be maintained at the facility for at least three years.[43] SU Facilities personnel are responsible for maintaining copies of the monthly inspection records and must provide copies of the completed monthly inspection forms to EHSS on a monthly basis for secondary backup recordkeeping.

A copy of the EHSS Monthly Underground Storage Tank Inspection Form is included as Appendix D.

### 4.9. UST System Labeling Requirements

All USTs must have a label at the fill port that lists the tank registration ID number, the tank's design capacity, the tank's working capacity, and the type of petroleum that is able to be stored in the UST system.[44] As a best management practice, EHSS also requires that the label list the specific petroleum product that is currently being stored in the UST.

> Design capacity is the amount of petroleum that a tank is designed to hold. If a certain portion of the tank is unable to store petroleum because of its integral design (for example, electrical equipment or other interior components take up space), the design capacity of the tank is thereby reduced.[45]
>
> Working capacity means the portion of the design capacity of a tank that may be filled before engaging the overfill prevention device, reduced by an allowance for freeboard and petroleum expansion.[46]

The fill port of every UST system must be color coded in accordance with API RP 1637. If a UST contains a product that does not have a corresponding API color code, the facility must mark the fill

[42] §613-2.3(b)(1)(iii) and 2.3(b)(2)(iii) for State & Federal USTs, §613-3.3(b)(1)(iii) and 3.3(b)(2)(iii) for State Only USTs
[43] §613-2.3(e)(1) for State & Federal USTs, §613-3.3(e)(1) for State Only USTs
[44] §613-2.2(a)(3) for State & Federal USTs, §613-3.2(a)(3) for State Only USTs
[45] §613-1.3(q)
[46] §613-1.3(bv)

port (for example, with stenciled letters) to identify the petroleum currently in the UST system.[47] A copy of the API RP 1637 color code chart is included as Appendix E.

All monitoring wells located in the vicinity of a UST system must be clearly marked as a monitoring well to prevent accidental delivery of petroleum to the well and must be sealed or capped to prevent liquid from entering the well from the surface.[48]

SU Facilities personnel (with assistance from EHSS) are responsible for maintaining compliance with the required UST system labeling requirements.

### 4.10. UST Operator Training

For UST systems that are subject to state & federal regulations, the facility must designate one qualified Class A Operator, one qualified Class B Operator, and one or more qualified Class C Operators for the subject UST system(s) at the facility (the same individual may be designated as both the Class A and Class B Operator).[49] The designated Class A and Class B Operators must be listed on the facility's PBS tank registration certificate. EHSS is responsible for designating the Class A, Class B, and Class C operators at Syracuse University.

> Class A Operator - the individual who has primary responsibility to operate and maintain the UST system(s) at a facility in accordance with applicable regulatory requirements. The Class A Operator typically manages resources and personnel to achieve and maintain compliance with the regulatory requirements.[50]
>
> Class B Operator - the individual who has day-to-day responsibility for implementing regulatory requirements. The Class B Operator typically implements field aspects of operation, maintenance, and associated recordkeeping for a UST system.[51]
>
> Class C Operator - the individual who has primary responsibility for initially addressing emergencies presented by a spill or release from a UST system. In a retail setting, the Class C Operator typically controls or monitors the dispensing or sale of petroleum.[52]

<u>Operator Training Qualifications</u>

To become qualified as a Class A or Class B Operator, the prospective individual must pass the required test as provided/administered by NYSDEC.[53]

[47] §613-2.2(a)(4) for State & Federal USTs, §613-3.2(a)(4) for State Only USTs
[48] §613-2.2(a)(5) for State & Federal USTs, §613-3.2(a)(5) for State Only USTs
[49] §613-2.5(b) for State & Federal USTs
[50] §613-1.3(j)
[51] §613-1.3(k)
[52] §613-1.3(l)
[53] §613-2.5(c)(1-2) for State & Federal USTs

To become qualified as a Class C Operator, the prospective individual must be trained and tested under the direction of a Class A or Class B Operator to take appropriate actions at the facility in response to emergencies and alarms caused by spills or releases from a UST system.[54] EHSS is responsible for providing the appropriate training and testing for Class C Operators at Syracuse University.

Operator Training Recordkeeping

Every facility with a UST system that is subject to state & federal regulations, must maintain a list of designated Class A, Class B, and Class C Operators and maintain records verifying that training and testing, as applicable, have been successfully completed.[55] EHSS is responsible for maintaining the required list of operators and training records.

### 4.11. UST System Repairs

State regulations define repairs as the act of "*restoring to working order a tank, pipe, spill prevention equipment, overfill prevention equipment, corrosion protection equipment, leak detection equipment, or other tank system component that has caused a leak or a suspected leak of petroleum from the tank system or has failed to function properly.*"[56]

The City of Syracuse has specific requirements regarding the repair of piping and tank systems that contain flammable and combustible liquid. If a non-routine repair is to be performed on a UST system within the City of Syracuse, city code requires that the repair be performed by a contractor that has a valid flammable and combustible liquid mechanical license issued by the city (also known as a "tank & pipe license").[57] For non-routine repairs, city code requires that the licensed tank contractor submit a permit application to the City's Division of Code Enforcement and file a notice to the Syracuse Fire Department's Fire Prevention Bureau prior to performing the repair work.[58]

City code does not require a permit to be obtained for routine maintenance or service, testing, adjusting of alarm valves, switches and pumps, cleaning, recharging or the direct replacement of such items as, but not exclusively limited to, filters, associated fuses and breakers, lamps, relays, times, controls, low voltage transformers, small pumps and motors (one horsepower or less), smoke pipe or gas vents, sprinkler heads, the connection or disconnection of portable appliances to permanently installed receptacles, or where replacement is made of component devices of like and similar kind and changes are not made which affect the lives and safety of the public.[59]

If a permit is required, the proposed repair cannot commence until the permit application has been approved via the issuance of a permit from the Division of Code Enforcement and copies of the

[54] §613-2.5(c)(3) for State & Federal USTs
[55] §613-2.5(f) for State & Federal USTs
[56] §613-1.3(aw)
[57] Chapter 9, Article 11, Section 9-116(1) and Section 9-121(2)(a) of the General Ordinances of the City of Syracuse
[58] Chapter 9, Article 11, Section 9-116(2) and Section 9-124(1) of the General Ordinances of the City of Syracuse
[59] Chapter 9, Article 11, Section 9-124(1)(b) of the General Ordinances of the City of Syracuse

following documents have been submitted to EHSS: a copy of the tank contractor's tank & pipe license, a copy of the permit, and copies of all of the permit application documents.

For UST systems that are subject to state & federal regulations,

- All repairs performed on the UST system must be conducted in accordance with one of the codes of practice listed in the applicable regulation.[60]
- All repaired USTs and piping must be tightness tested within 30 days following the date of the completion of the repair, unless the repaired UST system meets specific conditions listed in the regulation.[61]
- All cathodically protected UST systems must have their cathodic protection system tested within six months following the completion of the repair to ensure that is operating properly.[62] The results of the cathodic protection test must be less than or equal to -0.85 volts for the system to pass the test.[63]

Records of each repair made to a UST system must be maintained at the facility until the UST system is permanently closed.[64]

SU Facilities personnel are responsible for funding and scheduling (or performing) all required UST system repairs. SU Facilities personnel are also responsible for maintaining the required records and providing copies of the repair records to EHSS for secondary backup recordkeeping.

### 4.12. UST System Closure

NYSDEC has specific requirements and codes of practices that must be adhered to for the permanent closure of a UST system.[65] EHSS must be immediately notified of any proposed or planned closure of a UST system. Once notified, EHSS will provide the required regulatory notifications (as detailed below) and will assist with reviewing the proposed plan for closure.

The University's Fire and Life Safety Services must also be notified of the potential tank closure to assess whether the closure activities comply with University policies and applicable building and fire codes.

<u>Regulatory Notification Requirements</u>

Facility owners are required to provide notification to NYSDEC at least 30 days prior to the closure of any UST.[66] A copy of the form that is required to be submitted to NYSDEC for notification of tank

[60] §613-2.2(d)(1) for State & Federal USTs
[61] §613-2.2(d)(3) for State & Federal USTs
[62] §613-2.2(d)(4) for State & Federal USTs
[63] NACE SP0285-2011, 2011 edition - per §613-2.1(b)(2)(ii)(d) and §613-3.1(b)(2)(ii)
[64] §613-2.2(d)(5) for State & Federal USTs, BMP for State Only USTs
[65] §613-2.6 for State & Federal USTs, §613-3.5 for State Only USTs
[66] §613-2.6(b)(1) for State & Federal USTs, §613-3.5(b)(1) for State Only USTs

closures is included as Appendix B. EHSS is responsible for all communication with NYSDEC and submitting the required notification for tank closures.

City of Syracuse Requirements

The City of Syracuse has specific requirements regarding the installation, removal, and repair of piping and tank systems that contain flammable and combustible liquid. If a tank is to be closed within the City of Syracuse, city code requires that the closure be performed by a contractor that has a valid flammable and combustible liquid mechanical license issued by the city (also known as a "tank & pipe license").[67] Prior to performing the tank closure, city code requires that the licensed tank contractor submit a permit application to the City's Division of Code Enforcement and file a notice to the Syracuse Fire Department's Fire Prevention Bureau.[68]

The proposed tank closure cannot commence until the permit application has been approved via the issuance of a permit from the Division of Code Enforcement and copies of the following documents have been submitted to EHSS: a copy of the tank contractor's tank & pipe license, a copy of the permit, and copies of all of the permit application documents.

Tank Closure Requirements

To permanently close a UST system, all liquids and accumulated sludge must be removed from the system and the UST must be either removed from the ground or filled with an inert solid material (such as sand or concrete slurry). A UST is considered empty when there is no more than one inch of residue remaining in the tank.[69] All connecting and fill lines must be disconnected and removed or securely capped or plugged and all manways must be securely fastened in place.[70]

EHSS is responsible for facilitating the disposal of all wastes generated during the tank closure process. If a UST is removed from the ground, the tank must be cleaned and disposed of at an EHSS-approved scrap metal recycling facility. A tank cleaning certificate and proof of disposal for the tank at an approved scrap metal recycling facility must be provided to EHSS for recordkeeping.

An application to amend the facility's tank registration must be submitted to NYSDEC within 30 days following the permanent closure of a UST.[71] Records of the permanent closure must be maintained at the facility for a period of three years.[72] EHSS is responsible for submitting the required tank application and maintaining copies of the required records for permanent tank closures.

[67] Chapter 9, Article 11, Section 9-116(1) and Section 9-121(2)(a) of the General Ordinances of the City of Syracuse
[68] Chapter 9, Article 11, Section 9-116(2) and Section 9-124(1) of the General Ordinances of the City of Syracuse
[69] §613-2.6(a)(1)(ii) for State & Federal USTs, §613-3.5(a)(1)(ii) for State Only USTs
[70] §613-2.6(b)(2)(i) for State & Federal USTs, §613-3.5(b)(2)(i) for State Only USTs
[71] §613-2.6(b)(1) for State & Federal USTs, §613-3.5(b)(1) for State Only USTs
[72] §613-2.6(e) for State & Federal USTs, §613-3.5(c) for State Only USTs

Assessment of Excavation Zone

For UST systems that are subject to state & federal regulations, an assessment must be performed of the excavation zone during the permanent closure of a UST.[73] The excavation zone assessment must measure for the presence of a release where contamination is most likely to be present around the UST system. In selecting sample types, sample locations, and measurement methods, the facility must consider the method of closure, the petroleum stored, the type of backfill, the depth to groundwater, and other factors appropriate for identifying the presence of a release. A report documenting the findings of the excavation zone assessment must be submitted to NYSDEC within 90 days after the permanent closure of a UST.[74] EHSS is responsible for performing or providing direction regarding the excavation zone assessment and is also responsible for submitting the required summary report to NYSDEC.

# 5. AST System Requirements

Unlike the regulations for UST system requirements, there is only one subpart in the state regulations that apply to AST systems: Subpart 613-4.

## 5.1. AST Tank Construction & Secondary Containment

All ASTs must be properly designed, constructed, and protected from corrosion in accordance with the codes of practice listed in the applicable regulation. With regard to construction, all ASTs with a design capacity of 60 gallons or greater must be constructed of steel and must be designed and utilized in accordance with the design standards listed in the regulation.[75] Approval must be received from NYSDEC to store petroleum in an AST that is not constructed from steel.

All ASTs must be properly coated with a surface coating designed to prevent corrosion and deterioration.[76] Tanks located in areas susceptible to flooding, must be protected from becoming buoyant due to a rise in the water table, flooding, or accumulation of water.[77]

All ASTs must be supported on a well-drained stable foundation that prevents movement, rolling, or settling of the AST and is designed to minimize corrosion of the tank bottom.[78] All ASTs must also be configured as to allow monitoring of the area between the bottom of the tank and the impermeable barrier beneath the tank.[79] These requirements can be achieved by placing the AST on saddles, legs, stilts, a rack or cradle and not in immediate contact with the ground, floor, or foundation pad.

[73] §613-2.6(c)(1) for State & Federal USTs
[74] §613-2.6(b)(1) for State & Federal USTs
[75] §613-4.1(b)(1)(i)
[76] §613-4.1(b)(1)(ii)
[77] §613-4.2(e)
[78] §613-4.1(b)(4)(i)
[79] §613-4.1(b)(1)(v)(c)

Secondary Containment

All ASTs must have a secondary containment system that is able to prevent the release of petroleum by containing leaks from any portion of the tank until the petroleum can be detected and removed.[80]

The secondary containment system may consist of one of the following: [81]

a) A double wall tank
b) A double wall tank with containment for fill port and vent line (i.e., a modified double-walled AST)
c) A containment vat/tub/diked area capable of minimally containing 110% of the tank capacity

All newly installed ASTs must be tested for tightness and inspected in accordance with the codes of practice listed in the regulation prior to any petroleum being stored in the tank.[82]

### 5.2. AST Piping Construction

Aboveground piping that is not in contact with the ground is allowed to have single wall construction. Outdoor aboveground piping that is not in contact with the ground must be properly coated with a surface coating designed to prevent corrosion and deterioration.

Piping that routinely contains petroleum and is in contact with the ground must be properly designed, constructed, and protected from corrosion according to the codes of practice listed in the applicable regulation. Piping that is in contact with the ground must be constructed of a non-corrodible material or be cathodically protected steel.[83]

All underground piping connected to AST systems at Syracuse University must have double wall construction or an equivalent form of secondary containment and electronic interstitial monitoring.[84] All underground piping must be installed so that it slopes towards a containment sump, which will allow any product in the interstitial space of the product piping to flow to the containment sump where it can be detected by an electronic sensor and activate an alarm.

### 5.3. AST Corrosion Protection

As previously stated, all ASTs and outdoor aboveground piping must be properly coated with a surface coating designed to prevent corrosion and deterioration.

All corrosion protection systems must be operated and maintained to continuously provide corrosion protection to the metal components of the AST system that routinely contain petroleum and are in

[80] §613-4.1(b)(1)(v)(a)(1)
[81] §613-4.1(b)(1)(v)(d)
[82] §613-4.1(b)(4)(ii)
[83] §613-4.1(b)(2)
[84] BMP for ASTs

contact with the ground.[85] All cathodic protection systems must be tested within six months of installation and at yearly intervals thereafter.[86] The results of the cathodic protection test must be less than or equal to -0.85 volts for the system to pass the test.[87] Records of cathodic protection testing must be maintained at the facility for a minimum of three years.[88]

SU Facilities personnel are responsible for scheduling and funding cathodic protection testing. SU Facilities personnel are also responsible for maintaining the required cathodic protection records and providing copies of the cathodic protection test results to EHSS for secondary backup recordkeeping.

### 5.4. AST Valve Requirements

All pump-filled ASTs must be equipped with a check valve (or equivalent device) in the fill pipe to prevent and provide protection against backflow.[89] A check valve is required only when the piping arrangement of the fill pipe is such that backflow from the receiving tank is possible.

For gravity-drained ASTs, each connection to the tank through which product can normally flow must be equipped with an operating valve to control the flow.[90]

### 5.5. AST Spill & Overfill Prevention Equipment

Spills and overfills are releases that can occur because of equipment failures or operator error during product transfers. In order to prevent spills and overfills from occurring, all ASTs must be equipped with a product level gauge that accurately shows the quantity/level of petroleum in the tank.[91] As a best management practice, EHSS recommends that all ASTs also be equipped with a fill port catch basin (i.e., spill bucket), an overfill prevention device, and a high level alarm.

> An overfill prevention device is typically installed in the fill pipe of the AST and is designed to stop the flow of product into the tank when the AST is no more than 95% full. A high level alarm is a device that provides an audible alarm when an AST is no more than 90% full. A fill port catch basin (i.e., spill bucket) is a containment area that is installed around the fill port of a tank and is designed to collect and contain spills that may occur when product delivery personnel disconnect the product transfer line from the tank after filling.

As an administrative control to prevent spills and overfills, EHSS has developed a Petroleum Product Transfer Procedure, in accordance with NFPA 385 (2012 edition), that is to be followed during all product transfers.[92] A copy of the Petroleum Product Transfer Procedure is included as Appendix C.

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[85] §613-4.2(b)(1)
[86] §613-4.2(b)(2)(i)
[87] NACE RP0193-2001, 2001 edition - per §613-4.2(b)(2)(ii)(b)
[88] §613-4.2(b)(4)
[89] §613-4.1(b)(5)(iii)
[90] §613-4.1(b)(5)(iv)
[91] §613-4.1(b)(3)
[92] §613-4.2(a)(1)

SU Facilities personnel are responsible for keeping all gauges, valves, and other equipment for spill prevention in good working order.[93]

### 5.6. AST Leak Detection Requirements

Leak Detection for ASTs

Although not required by regulation, EHSS recommends the use of electronic leak detection systems for ASTs as a best management practice. Electronic leak detections systems include equipment such as automatic tank gauging systems, continuous electronic monitoring for the tank's secondary containment, etc.

Leak Detection for AST Piping

The two most common types of systems used to deliver fuel through AST product lines are **suction** pumping systems and **pressurized** pumping systems.

> In a suction pumping system, the pumping mechanism is located at the dispenser or equipment (above grade) and the fuel is drawn from the AST by suction. Suction piping systems have check valves that keep the supply piping full of liquid when the pump is turned off. The check valve opens whenever fluid is flowing towards the dispenser or equipment requiring fuel, and closes automatically whenever liquid tries to flow back toward the tank. The preferred location for a check valve in the piping system is immediately below/before the suction pump. If a hole develops in suction piping between the check valve and the tank, air will be drawn into the piping and the fuel will flow back toward the tank instead of towards the dispenser or piece of equipment requiring fuel. The air being drawn into the piping will cause the suction pump to malfunction, therefore causing the flow rate and quantity of fuel being delivered to be less than normal.
>
> In a pressurized piping system, the pumping mechanism is located inside the AST near the bottom of the tank. The pump, known as a pressure pump or submersible turbine pump (STP), pushes the fuel under pressure through piping to the dispenser or equipment. Because the pump is located inside the tank and it forces the fuel through the piping under positive pressure, leaks in the product piping may not affect the operation of the fuel dispensing equipment or supply system and therefore the leaks may go unnoticed.

All underground **pressurized** piping systems at Syracuse University must be equipped with automatic line leak detectors and continuous electronic interstitial space monitoring.[94] Automatic line leak detectors on pressurized piping systems must be tested for operability on a yearly basis.[95]

[93] §613-4.2(a)(6)
[94] §613-4.3(a)(2)(i)(b) for ALLDs and BMP for Interstitial Monitoring
[95] BMP for ASTs

Automatic Line Leak Detectors

Automatic line leak detector (ALLDs) can be either mechanical or electronic.

Mechanical ALLDs are pressure operated valves that are typically installed on the head of the submersible turbine pump and are designed to detect leaks by monitoring pressure each time the pump is turned on to transport product. If there is no pressure build-up in the mechanical ALLD when the pump is turned on, the mechanical ALLD will restrict the flow rate of product to the product lines, therefore any observed reduction in flow must be investigated as a potential leak from the product supply line.

Electronic ALLDs are also installed on the head of the submersible turbine pump, but unlike mechanical ALLDs, they have a detection element which measures flow rate or changes in pressure in the piping and transmits this information through wiring to a control panel (such as an automatic tank gauge or electronic leak detection system) where it will activate an alarm if a potential leak is detected. Electronic ALLDs are preferable to mechanical ALLDs because they can detect smaller leaks and because some models have the capability of completely shutting off the product flow by switching off the power to the pump if the leak rate exceeds a designated threshold.

Continuous Electronic Interstitial Space Monitoring

This method of leak detection is used to monitor leaks from double wall product piping. It requires that the underground piping be installed so that it slopes towards a containment sump, which will allow any product that is released into the interstitial space of the double wall piping to flow to the containment sump where it can be detected by an electronic sensor. The sensor in the containment sump continuously monitors for liquid and is wired to a control panel (such as an automatic tank gauge or electronic leak detection system) where it will active an alarm if liquid is detected in the containment sump.

All underground **suction** piping systems at Syracuse University must be equipped with continuous electronic interstitial space monitoring[96].

Additionally, all underground **pressurized**, **suction**, **and gravity-fed** piping systems installed before December 27, 1986, must be tested for tightness in accordance with the regulation at 10-year intervals.[97]

SU Facilities personnel are responsible for funding and scheduling (or performing) the required ALLD operability and/or product piping tightness tests. SU Facilities personnel are also responsible for maintaining the required records and providing copies of the test records to EHSS for secondary backup recordkeeping.

[96] BMP for ASTs

[97] §613-4.3(a)(2)(i)(a) for pressurized piping, §613-4.3(a)(2)(ii) for suction and gravity-fed piping

## 5.7. AST Monthly Inspections & Recordkeeping Requirements

All AST systems at Syracuse University must be inspected at monthly intervals using EHSS's Monthly Aboveground Storage Tank Inspection Form.[98] SU Facilities personnel are responsible for performing the monthly inspections and completing the required form.

The monthly inspection records must be maintained at the facility for at least three years.[99] SU Facilities personnel are responsible for maintaining copies of the monthly inspection records and providing copies of the completed monthly inspection forms to EHSS on a monthly basis for secondary backup recordkeeping.

A copy of the EHSS Monthly Aboveground Storage Tank Inspection Form is included in Appendix F.

## 5.8. AST System Labeling Requirements

All ASTs must be marked (for example, with stenciled letters) with the tank registration ID number, the tank design capacity, and the tank working capacity.[100]

> Design capacity is the amount of petroleum that a tank is designed to hold. If a certain portion of the tank is unable to store petroleum because of its integral design (for example, electrical equipment or other interior components take up space), the design capacity of the tank is thereby reduced.[101]
>
> Working capacity means the portion of the design capacity of a tank that may be filled before engaging the overfill prevention device, reduced by an allowance for freeboard and petroleum expansion.[102]

The fill port of every ASTs must be color coded in accordance with API RP 1637. If the AST contains a product that does not have a corresponding API color code, the facility must mark the AST (for example, with stenciled letters) to identify the petroleum currently in the AST system. If the fill port is remote from the AST such that the AST cannot be properly identified by sight from the fill port, the facility must also place the marking near the fill port to identify the petroleum currently in the AST system.[103] A copy of the API RP 1637 color code chart is included as Appendix E.

All monitoring wells located near an AST system must be clearly marked as a monitoring well to prevent accidental delivery of petroleum to the well and must be sealed or capped to prevent liquid from entering the well from the surface.[104]

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[98] §613-4.3(a)(1)(i)
[99] §613-4.3(e)
[100] §613-4.2(a)(3)
[101] §613-1.3(q)
[102] §613-1.3(bv)
[103] §613-4.2(a)(4)
[104] §613-4.2(a)(5)

SU Facilities personnel (with assistance from EHSS) are responsible for maintaining compliance with the required AST system labeling requirements.

### 5.9. AST System Repairs

State regulations define repairs as the act of "*restoring to working order a tank, pipe, spill prevention equipment, overfill prevention equipment, corrosion protection equipment, leak detection equipment, or other tank system component that has caused a leak or a suspected leak of petroleum from the tank system or has failed to function properly.*"[105]

The City of Syracuse has specific requirements regarding the repair of piping and tank systems that contain flammable and combustible liquid. If a non-routine repair is to be performed on an AST system within the City of Syracuse, city code requires that the repair be performed by a contractor that has a valid flammable and combustible liquid mechanical license issued by the city (also known as a "tank & pipe license").[106] For non-routine repairs, city code requires that the licensed tank contractor submit a permit application to the City's Division of Code Enforcement and file a notice to the Syracuse Fire Department's Fire Prevention Bureau prior to performing the repair work.[107]

City code does not require a permit to be obtained for routine maintenance or service, testing, adjusting of alarm valves, switches and pumps, cleaning, recharging or the direct replacement of such items as, but not exclusively limited to, filters, associated fuses and breakers, lamps, relays, times, controls, low voltage transformers, small pumps and motors (one horsepower or less), smoke pipe or gas vents, sprinkler heads, the connection or disconnection of portable appliances to permanently installed receptacles, or where replacement is made of component devices of like and similar kind and changes are not made which affect the lives and safety of the public.[108]

If a permit is required, the proposed repair cannot commence until the permit application has been approved via the issuance of a permit from the Division of Code Enforcement and copies of the following documents have been submitted to EHSS: a copy of the tank contractor's tank & pipe license, a copy of the permit, and copies of all of the permit application documents.

Records of each repair made to an AST system must be maintained at the facility until the AST system is permanently closed.[109]

SU Facilities personnel are responsible for funding and scheduling (or performing) all required AST system repairs. SU Facilities personnel are also responsible for maintaining the required records and providing copies of the repair records to EHSS for secondary backup recordkeeping.

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[105] §613-1.3(aw)
[106] Chapter 9, Article 11, Section 9-116(1) and Section 9-121(2)(a) of the General Ordinances of the City of Syracuse
[107] Chapter 9, Article 11, Section 9-116(2) and Section 9-124(1) of the General Ordinances of the City of Syracuse
[108] Chapter 9, Article 11, Section 9-124(1)(b) of the General Ordinances of the City of Syracuse
[109] BMP for ASTs

## 5.10. AST System Closure

NYSDEC has specific requirements and codes of practices that must be adhered to for the permanent closure of an AST system.[110] EHSS must be immediately notified of any proposed or planned closure of an AST system. Once notified, EHSS will provide the required regulatory notifications (as detailed below) and will assist with reviewing the proposed plan for closure.

The University's Fire and Life Safety Services must also be notified of the potential tank closure to assess whether the closure activities comply with University policies and applicable building and fire codes.

Regulatory Notification Requirements

Facility owners are required to provide notification to NYSDEC at least 30 days prior to the closure of any AST at a regulated facility. [111] A copy of the form that is required to be submitted to NYSDEC for notification of tank closures is included as Appendix B. EHSS is responsible for communicating with NYSDEC and submitting the required notification for the tank closure.

City of Syracuse Requirements

The City of Syracuse has specific requirements regarding the installation, removal, and repair of piping and tank systems that contain flammable and combustible liquid. If a tank is to be closed within the City of Syracuse, city code requires that the closure be performed by a contractor that has a valid flammable and combustible liquid mechanical license issued by the city (also known as a "tank & pipe license").[112] Prior to performing the tank closure, city code requires that the licensed tank contractor submit a permit application to the City's Division of Code Enforcement and file a notice to the Syracuse Fire Department's Fire Prevention Bureau.[113]

The proposed tank closure cannot commence until the permit application has been approved via the issuance of a permit from the Division of Code Enforcement and copies of the following documents have been submitted to EHSS: a copy of the tank contractor's tank & pipe license, a copy of the permit, and copies of all of the permit application documents.

Tank Closure Requirements

To permanently close an AST system, the tank must be emptied and cleaned by removing all liquids, vapors, and accumulated sludge.[114] An AST is considered empty when there is no more than one inch of residue remaining in the tank.[115] Any AST that is permanently closed but not removed must be

[110] §613-4.5(b)(2)
[111] §613-4.5(b)(1)
[112] Chapter 9, Article 11, Section 9-116(1) and Section 9-121(2)(a) of the General Ordinances of the City of Syracuse
[113] Chapter 9, Article 11, Section 9-116(2) and Section 9-124(1) of the General Ordinances of the City of Syracuse
[114] §613-4.5(b)(2)
[115] §613-4.5(a)(1)(ii)

stenciled with the date of permanent closure and must be protected from flotation.[116] Any AST that is permanently closed, but not removed, may not return to service unless the entire AST system meets the requirements for Category 3 AST systems.[117]

EHSS is responsible for facilitating the disposal of all wastes generated during the tank closure process. If an AST is permanently closed and removed, the tank must be cleaned and disposed of at an EHSS-approved scrap metal recycling facility. A tank cleaning certificate and proof of disposal for the tank at an approved scrap metal recycling facility must be provided to EHSS for recordkeeping.

An application to amend the facility's tank registration must be submitted to NYSDEC within 30 days following the permanent closure of an AST.[118] Records of the permanent closure must be maintained at the facility for a period of three years.[119] EHSS is responsible for submitting the required tank application and maintaining copies of the required records for permanent tank closures.

# 6. Product Dispenser Requirements

All product dispenser systems that are connected to a UST or AST via underground piping must be equipped with an appropriate under dispenser containment system to prevent potential releases to the environment. Under-dispenser containment must be liquid-tight and must allow for visual inspection and access to the components in the containment system or be continuously electronically monitored for leaks from the dispenser system.[120] Every product dispenser that receives product under pressure from a remote pumping system must be equipped with a shear valve.[121]

> A shear valve (or "impact valve) is a valve that is installed on the supply line to the product dispenser that is designed to close if a dispenser is impacted, moved, or dislodged. Therefore cutting off the supply to the dispenser and limiting the potential for a spill.

Every product dispenser that is gravity-fed from a UST or AST must have a solenoid or equivalent valve that is positioned adjacent to and downstream from the operating valve.[122] The solenoid (or equivalent) valve must be installed and adjusted so that product cannot flow by gravity from the UST system in the event of a piping or dispenser hose failure.

[116] §613-4.5(b)(3) & (b)(4)
[117] §613-4.5(b)(5)
[118] §613-4.5(b)(1)
[119] §613-4.5(c)
[120] §613-2.1(b)(5) for State & Federal USTs, BMP for State Only USTs, BMP for ASTs
[121] §613-2.1(b)(6)(i) for State & Federal USTs, §613-3.1(b)(5)(i) for State Only USTs, §613-4.1(5)(i) for ASTs
[122] §613-2.1(b)(6)(ii) for State & Federal USTs, §613-3.1(b)(5)(ii) for State Only USTs, §613-4.1(5)(ii) for ASTs

# 7. Vapor Recovery Requirements

Vapor recovery is the process of recovering vapors during the transfer of petroleum products to or from a storage tank. NYS air emission regulations require gasoline dispensing sites located outside of the New York City metro area that have a throughput of more than 120,000 gallons per year to install a stage I vapor recovery system on their gasoline storage tank systems.[123] The purpose of a stage I vapor recovery system is to prevent emissions to the outdoor atmosphere during the transfer of gasoline into a storage tank. A stage I vapor recovery system typically consists of a vapor recovery port installed on the storage tank where fuel delivery personnel attach a vapor-tight return line from the delivery vehicle to the tank's vapor recovery port. During the filling process, gasoline vapors are forced from the storage tank back into the delivery vehicle through the return line by direct displacement of the gasoline being loaded into the tank.

# 8. Delivery Prohibition

If NYSDEC finds a UST or AST system that is in significant non-compliance, they will affix a tag to the fill port of the tank system, making delivery or acceptance of delivery of product to the tank system illegal and subject to enforcement action.[124] Examples of significant non-compliance include tanks that are leaking or suspected to be leaking, and tanks with inadequate spill prevention, leak detection, corrosion protection, or secondary containment systems. The delivery prohibition applies to all regulated petroleum bulk storage tanks (i.e., state & federal USTs, state only USTs, and ASTs).

NYSDEC will also provide a written notification to the facility owner/operator when they affix a delivery prohibition tag to a tank system. The facility owner is required to notify their product delivery carrier of the prohibition prior to the next scheduled delivery and the facility must maintain record of any correspondence regarding the delivery prohibition.[125] EHSS must be immediately notified by SU Facilities personnel in the event of a delivery prohibition on any of the University's tank systems.

Deliveries to a tagged tank system cannot resume until NYSDEC removes the tag or authorizes the removal of the tag.[126] EHSS is responsible for all communication with NYSDEC. SU Facilities personnel are responsible for taking corrective action to address the issue of non-compliance.

[123] §230.2(a)
[124] §613-5.2(a)
[125] §613-5.3(b)
[126] §613-5.4(b)

# 9. Suspected Leaks and Spill Response Protocol

All suspected leaks and observed spills of petroleum from any portion of a tank system that are discovered during normal business hours must be immediately reported to EHSS. This includes the discovery of a petroleum spill or the observation of unusual operating conditions such as erratic behavior of product dispensing equipment, an unexplained presence of water in the tank, water or petroleum in the interstitial space of secondarily contained tanks or piping, or alarms from leak detection systems (unless the monitoring device is found to be defective).[127]

If a suspected leak or observed spill is discovered after normal business hours, the Department of Public Safety (DPS) must be notified at (315) 443-2224.

EHSS is required to report all spills and suspected leaks associated with tank systems to the NYS Spill Hotline (1-800-457-7362) within two hours of the discovery,[128] unless the spill meets the following conditions, then notification to NYSDEC is not required:[129]

a) Less than five gallons in volume;
b) It is contained and under the control of the spiller;
c) It has not reached and will not reach the land or waters of the State; and
d) It is cleaned up within two hours after discovery

If a leak is suspected from a UST system, tightness testing must be performed on the entire system to determine whether a leak exists. If a leak is suspected from an AST system, the system must be inspected in accordance with the codes of practice listed in the regulation and a tightness test must be performed on all underground piping. These investigations must be initiated within 48 hours of reporting the suspected leak to NYSDEC and must be completed within seven days from the date the suspected leak was reported to NYSDEC.[130]

SU Facilities personnel are responsible for funding and scheduling (or performing) all required system inspections, tightness testing, and associated system repairs. EHSS is responsible for all communications with NYSDEC.

Spill Response Protocol

In the event of petroleum spill, the following protocol must be followed:

1) Evaluate the situation for potential ignition sources, if fire/explosion potential exists immediately evacuate to a safe area and notify DPS at (315) 443-2224.
2) Stop the flow of oil from the source of the release (if it is possible and safe to do so).
3) Contain the spill to prevent it from spreading or reaching the ground or a drain.
4) Notify EHSS, if during normal business hours, or DPS at (315) 443-2224 if after hours.

[127] §613-2.4(a)(ii) for State & Federal USTs, §613-3.4(a)(2) for State Only USTs, §613-4.4(a)(2) for ASTs
[128] §613-2.4(a)(1) for State & Federal USTs, §613-3.4(a) for State Only USTs, §613-4.4(a) for ASTs
[129] §613-2.4(d)(1) for State & Federal USTs, §613-3.4(d)(1) for State Only USTs, §613-4.4(d)(1) for ASTs
[130] §613-2.4(c) for State & Federal USTs, §613-3.4(c) for State Only USTs, §613-4.4(c) for ASTs

# 10. Temporary and/or Portable Tanks

Temporary Tanks

The state PBS regulations define a temporary tank as a stationary AST that is installed and intended for use on a property for no more than 180 consecutive days during any 12-months period.[131] Any temporary tank that is not removed from a facility within 180 days after installation must be registered with NYSDEC according to the registration requirements discussed in Section 2 of this manual.[132] EHSS must be notified prior to the planned procurement and installation of any temporary tanks on University property. EHSS will provide guidance to SU Facilities personnel and contractors regarding potential compliance requirements for the tank system (such as secondary containment, spill & overfill prevention equipment, labeling, etc.) and will evaluate whether the temporary tank requires registration with NYSDEC.

The University's Fire and Life Safety Services must also be notified to assess whether the construction and proposed location of the new tank comply with University policies and applicable building and fire codes.

Portable Tanks

Portable, non-stationary ASTs are not regulated by the state PBS regulations, unless the tank is rendered immobile (i.e., becomes stationary) by being permanently affixed to or installed at one location through such actions as being connected via permanent hard piping or being installed on a stationary foundation/base. Examples of portable tanks include skid mounted ASTs, truck bed fuel transfer tanks, fuel tanks on portable equipment such as electrical generators, light towers, water pumps, etc.

SPCC Requirements

All temporary and portable tanks with a capacity of $\geq$ 55 gallons stored at a University facility with an SPCC Plan (i.e. Main Campus, South Campus, Ainsley Drive, and Steam Station) must meet the requirements of the SPCC Rule and the SPCC Plan that has been developed for that facility. EHSS is responsible for providing guidance regarding the applicable SPCC compliance requirements to the department/division or contractor responsible for the temporary and/or portable tank.

[131] §613-1.3(bm)
[132] §613-1.9(a)

# 11. Annual Compliance Reviews

EHSS performs a comprehensive compliance review of all the University's AST and UST systems on an annual basis. Following completion of the compliance reviews, EHSS provides SU Facilities personnel with a summary report detailing EHSS' findings/observations and recommended corrective actions for any observed conditions that require attention.

SU Facilities personnel are responsible for taking appropriate action necessary to rectify noted compliance issues associated with any of the University's tank systems, which includes performing the action in-house or funding and facilitating an outside vendor to perform the action(s).

- A copy of EHSS' Annual UST Compliance Review Form for UST systems that are subject to state & federal regulations is included as Appendix G.
- A copy of EHSS' Annual UST Compliance Review Form for UST systems that are only subject to state regulations is included as Appendix H.
- A copy of EHSS' Annual AST Compliance Review Form is included as Appendix I.
- A copy of EHSS' Annual Compliance Review Summary of Findings & Recommendations Form is included as Appendix J.

# Appendix A

EHSS Checklist of Requirements for New ASTs

# Syracuse University - Environmental Health & Safety Services

## Checklist of Requirements for New Aboveground Petroleum Storage Tanks (ASTs)

| | | | |
|---|---|---|---|
| **Location of Tank Installation:** | | | |
| **Tank Manufacturer & Model No.:** | | | |
| **Design Capacity of Tank:** | | | |
| **Product to be Stored:** | | | |
| **Purpose of Tank:** | | | |
| **NYSDEC Facility Registration #:** | | **NYSDEC Registration Tank ID #:** | |

**Confirmed by SU EHSS**

☐ **1 - A copy of the tank's specification sheet is attached or has been previously submitted to SU EHSS.**

YES ☐ NO ☐ N/A ☐

☐ **2 - The tank is constructed of steel or another material specifically approved by NYSDEC.** [§613-4.1(b)(1)(i)]

YES ☐ NO ☐ N/A ☐

***Note:** Approval must be received from NYSDEC to use an AST that is not constructed of steel.
Confirmation of the NYSDEC approval must be attached to this document. [§613-4.1(b)(1)(iv)]

**Select tank construction type:**

- ☐ Steel / Carbon Steel / Iron
- ☐ Galvanized Steel Alloy
- ☐ Stainless Steel Alloy
- ☐ Fiberglass Coated Steel
- ☐ Steel Tank in Concrete
- ☐ Fiberglass Reinforced Plastic (FRP)*
- ☐ Plastic*
- ☐ Concrete*
- ☐ Urethane Clad Steel
- ☐ Other* *Explain:*

☐ **3 - The tank is designed according to one of the following codes of practice.** [§613-4.1(b)(1)(i)]

YES ☐ NO ☐ N/A ☐

**Select applicable design code(s):**

- ☐ UL 142, December 2006
- ☐ UL 80, September 2007
- ☐ UL 2258, August 2010
- ☐ *UL 2085, May 1999 (*Not listed in the regulation, but the base tank of a UL 2085 tank meets the specifications of UL 142)
- ☐ Other
- ☐ API Standard 620, February 2008
- ☐ API Standard 650, March 2013
- ☐ ULC-S601-07, 2007

*Comment:*

☐ **4 - The tank has surface coating designed to prevent corrosion and deterioration.** [§613-4.1(b)(1)(ii)]

YES ☐ NO ☐ N/A ☐

☐ **5 - The tank is on saddles, legs, stilts, rack or cradle and is not in immediate contact with soil or the floor or foundation pad.** [§613-4.1(b)(1)(iii), 4.1(b)(4)(i) and BMP]

YES ☐ NO ☐ N/A ☐

*Describe:*

Confirmed by SU EHSS

☐ **6 - The tank is supported on a well-drained stable foundation which prevents movement, rolling, or settling of the tank.** [§613-4.1(b)(4)(i)] YES NO N/A

**Foundation Description:**

- ☐ Concrete pad
- ☐ Interior Building Floor — *Describe:*
- ☐ Other — *Describe:*

☐ **7 - The tank has been tested for tightness and inspected according to one of the following codes of practice:** [§613-4.1(b)(4)(ii)] YES NO N/A

**Select applicable code(s):**

- ☐ API Standard 650, March 2013
- ☐ API Standard 653, April 2009
- ☐ PEI RP200, 2013 edition
- ☐ STI SP001, September 2001
- ☐ UL 142, December 2006

☐ **8 - The tank is equipped with a capacity gauge which accurately shows the level of petroleum in the tank, is accessible to the fuel delivery vendor, and is installed so it can be conveniently read.** [§613-4.1(b)(3)] YES NO N/A

**Select all applicable:**

- ☐ Tank mounted capacity gauge
- ☐ Remote capacity gauge (not tank mounted) — *Location*
- ☐ Other — *Describe:*

☐ **9 - The tank is equipped with additional overfill prevention:** YES NO N/A

**Select all applicable:**

- ☐ High Level Alarm (local alarm only)
- ☐ High Level Alarm (local alarm and alarms to SU EMS)
- ☐ High Level Liquid Pump Cut-off Controller
- ☐ Vent Whistle
- ☐ Other Equivalent Device — *Describe:*

☐ **10 - The tank has a secondary containment system that is able to prevent the release of petroleum by containing any petroleum that is leaked from any portion of the tank until the petroleum can be detected and removed.** [§613-4.1(b)(1)(v)(a)] YES NO N/A

**Select all applicable:**

- ☐ Double wall tank
- ☐ Double wall tank with containment for fill port and vent line (i.e., modified double-walled AST)
- ☐ Containment vat/tub/diked area capable of minimally containing 110% of the tank capacity
- ☐ Berm or Dike (constructed in accordance with NFPA No. 30 and capable of containing at least 110% of tank capacity)
- ☐ Other — *Describe:*

| Confirmed by SU EHSS | | |
|---|---|---|
| YES | NO | N/A |

☐ **11 - The tank is equipped with the following means of leak detection:**

**Select all applicable:**

- ☐ Manual Interstitial monitoring
- ☐ Electronic interstial space monitoring (local alarm only)
- ☐ Electronic interstial space monitoring (local alarm and alarms to SU EMS)
- ☐ In-tank monitoring system (e.g., auto tank gauge) - (local alarm only)
- ☐ In-tank monitoring system (e.g., auto tank gauge) - (local alarm and alarms to SU EMS)
- ☐ Concrete pad or other impervious barrier under the tank
- ☐ Other *Describe:*

YES NO N/A

☐ **12 - The tank is equipped with spill prevention equipment at the fill port.** (e.g., spill bucket, catch basins, etc)

**Select all applicable :**

- ☐ Spill bucket
- ☐ Catch basin
- ☐ Tank's containment vat/tub also provides for fill port containment
- ☐ Other *Describe:*

YES NO N/A

☐ **13 - Pump-filled tanks only: The fill pipes leading to the pump-filled tank are equipped with a properly functioning check valve or equivalent device which provides automatic protection against backflow.** [§613-4.1(c)(3)(iii)]

YES NO N/A

☐ **14 - Gravity drained tanks only: All connections through which petroleum can normally flow are equipped with an operating valve to control the flow.** [§613-4.1(c)(3)(iv)]

YES NO N/A

☐ **15 - The tank is equipped with the following pumping system:**

- ☐ Submersible
- ☐ Suction
- ☐ Gravity

YES NO N/A

☐ **16 - The location of the product piping for the tank system is as follows:**

- ☐ Aboveground but not in contact with the ground
- ☐ *Underground / On-ground
- ☐ *Aboveground / Underground Combination

***Note:** NYSDEC has specific requirements for any piping that is in contact with the ground [§613-4.1(c)(3)(iv)]

| Confirmed by SU EHSS | YES | NO | N/A |
|---|---|---|---|

☐ **17 - The product piping for the tank system is constructed of the following material(s):**

**Select all applicable:**

- ☐ Steel / Carbon Steel / Iron
- ☐ Galvanized Steel
- ☐ Stainless Steel Alloy
- ☐ Fiberglass Coated Steel
- ☐ Steel Encased in Concrete
- ☐ Fiberglass Reinforced Plastic (FRP)
- ☐ Plastic
- ☐ Concrete
- ☐ Copper
- ☐ Flexible Piping
- ☐ Other

*Explain:*

| YES | NO | N/A |
|---|---|---|
| | | |

☐ **18 - The product piping has secondary containment.** [Not required by NYSDEC for aboveground piping but recommended as a BMP]

**Select all applicable:**

- ☐ None
- ☐ Diking
- ☐ Double walled (underground)
- ☐ Double walled (aboveground)
- ☐ Other *Describe:*

| YES | NO | N/A |
|---|---|---|
| | | |

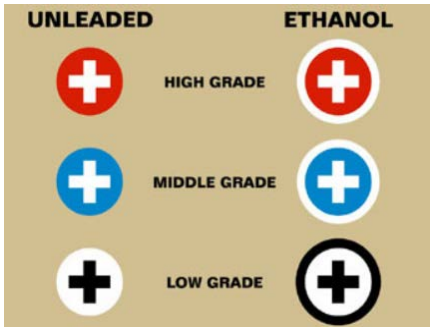
**THE FOLLOWING MUST BE PROVIDED AT THE TIME OF INSTALLATION**

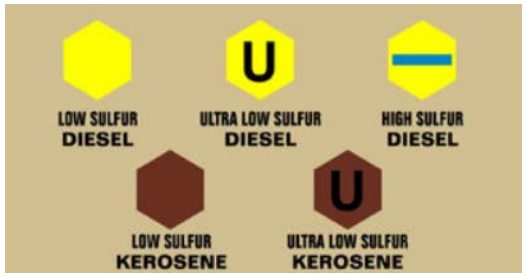
☐ **19 - The tank is permanently marked (for example, with stenciled letters) with the tank registration identification number, as well as the tank design and working capacities.** [§613-4.2(a)(3)]

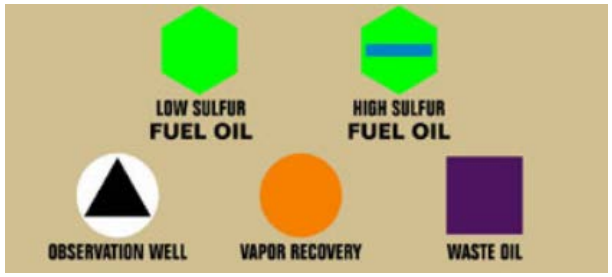
| YES | NO | N/A |
|---|---|---|
| | | |

☐ **20 - The tank's fill port is permanently marked and color-coded in accordance with the American Petroleum Institue (API) RP 1637 color-symbol system.** [§613-4.2(a)(4)]

| YES | NO | N/A |
|---|---|---|
| | | |




**Completed By:** _____ **Date:** _____

**SU Department/ Company Name:** _____ **Contact #:** _____

# Appendix B

NYSDEC Pre-Work Notification Form

# New York State Department of Environmental Conservation
# Pre-Work Notification for Bulk Storage (PBS or CBS) Tank Installation or Closure

This form provides notice of an upcoming tank installation and/or closure per 6 NYCRR Sections 613-1.9(h) and (f), 613-2.6(b) (1), 613-3.5 (b) (1) and 613-4.5 (b) (1) of the Petroleum Bulk Storage (PBS) Regulations, or 6 NYCRR Sections 596.2(f) and (h) of the Chemical Bulk Storage (CBS) Regulations. Submit the completed form to the Department's Regional Office at least 30 days prior to action for PBS tank installation * and permanent closure** ; at least 3 days prior for CBS tank installation *** . For CBS permanent tank closure, a minimum of 3 day prior notice is recommended. **If the schedule for work changes you must notify the Department's Regional Office before work begins. Once the work is complete, the facility (property) owner is responsible for submitting a PBS or CBS application to the Department with the complete tank information including the date the action was completed.** The Owner is also responsible to ensure that all work is completed in compliance with the applicable PBS or CBS regulations (i.e., Parts 613 or 598/599). Any questions, call the Department's Regional Office. Information on the Chemical and Petroleum Bulk Storage Programs be found at: http://www.dec.ny.gov/chemical/287.html

*not required for temporary tank system ** unless in response to corrective action *** unless immediate action is required

**Check Applicable Program**: _____PBS _____CBS **Facility PBS or CBS Registration No.** _____

| | |
|---|---|
| Site Name: | Contractor: |
| Site Address: | Address: |
| Site Address (cont): | Address(cont): |
| Site Contact: | Contact: |
| Phone Number: Fax Number: | Phone Number: Fax Number: |
| Email Address: | Email Address: |

| Tank Number | Type of Action (Close & Remove, Close in Place, Install) | Proposed Date (mm/dd/yy) | Tank Location (Aboveground or Underground) | Capacity (Gallons) | Spills/Leaks? (Yes/No w/Spill # if Yes) | Reason for Action |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

I hereby certify under penalty of law that the information provided on this form is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

**Name of Owner or Authorized Representative** (print): _____ Title: _____

**Signature** _____ Date _____

# Appendix C

EHSS Petroleum Product Transfer Procedure

# Syracuse University Environmental Health and Safety Services

## Petroleum Product Transfer Procedure

## Prior to Transfer

### Syracuse Employee Responsibilities

1. A qualified SU employee, trained in the content of the University's Spill Prevention Control and Countermeasures Plan and knowledgeable in the proper operation and transfer of the fuel product, must be present during the entire transfer process.

2. The qualified SU employee must provide spill protection (i.e. drain mats, drain plugs, etc.) for all drains (floor, storm water, etc.) to which the transfer product may flow into in the event of a discharge (i.e. in the vicinity of the tank and fill port).

3. The qualified SU employee must determine the available fill capacity of the tank and communicate this with the vendor.

> **Steps for Determining Tank's Available Fill Capacity:**
> - Determine the working capacity of the tank (should be posted on tank).
> - Determine current volume of product in the tank. If this is determined other than by direct measurement, allow for a 10% safety factor (i.e., increase volume estimate by 10%) to avoid overfill conditions.
> - Determine the maximum available fill capacity:
> (maximum available fill capacity = working capacity - current volume)

4. The qualified SU employee must verify that the product to be delivered is the same as the product contained in the tank.

5. The qualified SU employee must verify that the vendor's representative is qualified, knowledgeable and trained in the proper operation and delivery of the fuel product.

6. The qualified SU employee must ensure that traffic in the immediate vicinity of the transfer process is effectively controlled or eliminated during the transfer process.

7. The qualified SU employee should verify that the vendor's vehicle is appropriately grounded during the transfer process.

8. The qualified SU employee must assure adequate communication with the vendor during the transfer process (i.e. 2-way radios set at a designated frequency, etc.)

9. The qualified SU employee must evaluate the transfer area to make sure that it is free of potential ignition sources and that an appropriate fire extinguisher is present.

10. Once all of the above steps are completed, the qualified SU employee should then unlock the tank's fill port.

11. The qualified SU employee must monitor the tank site during the entire fill procedure to ensure that the tank is not over filled and/or that pipes are not leaking.

## Prior to Transfer

### Vendor Responsibilities

1. The vendor may not hook up or transfer any petroleum product unless a qualified University representative who is trained in the proper operation and delivery of the fuel product is present during the entire transfer process.

2. The vendor may not hook up or transfer any petroleum product unless a qualified vendor representative who is trained in the proper operation and delivery of the fuel product is present during the entire transfer process.

3. The vendor's qualified representative must verify the integrity of the tank and its storage location.

4. The vendor's qualified representative must verify that the tank vent is open and unobstructed and that the tank's fill port catch basin is free of liquid and debris.

5. The vendor's qualified representative must determine available fill capacity of the tank and then verify it with the SU employee.

6. The vendor's qualified representative must verify with the SU employee that the product to be delivered is the same as what is presently in the tank.

7. The vendor's qualified representative must appropriately ground the vehicle. It is the policy of Syracuse University that vehicles must be grounded at all times during the transfer of petroleum products.

8. The vendor's qualified representative must set the vehicle's parking brake and wheel chocks prior to initiating the transfer process.

9. The vendor's qualified representative must evaluate the transfer area to make sure that it is free of potential ignition sources and that an appropriate fire extinguisher is present.

10. The vendor's qualified representative must inspect their vehicle and all equipment to be used during the transfer procedure (i.e. vehicle drain, outlet connections, transfer hose, equipment, etc.) to assure that they are functioning properly.

    Note: All liquid transfer equipment (hoses and piping) must contain valves which close automatically and provide a dry disconnection or other means or preventing a release of the product to the environment when transfer hoses or pipes are disconnected.

11. The vendor's qualified representative must be readily able to communicate with the SU employee during the entire fill process.

12. The vendor's qualified representative must remain within 25 feet of the fill location during the entire transfer process.

13. The vendor's qualified representative must shut down the motor of the delivery vehicle and the motors of any auxiliary or portable pumps during the making of hose connections. If the transfer process does not require the use of the motor of the delivery vehicle, then the motor must remain off throughout the entire transfer process.

## Prior to Departure

### Syracuse Employee Responsibilities

1. The qualified SU employee must ensure that all of the vendor's fill equipment has been removed from the fill port.

2. The qualified SU employee must inspect the fill area to ensure no residual product remains in or around the fill area. If any product is found the qualified SU employee must notify EHSS (315.443.4132) and the vendor's representative immediately.

3. The qualified SU employee must recap and lock the fill port.

4. The qualified SU employee must retrieve the drain protectors and them place back in their appropriate storage area(s)

### Vendor Responsibilities

1. The vendor's qualified representative must shut down the motor of the delivery vehicle and the motors of any auxiliary or portable pumps during the breaking of hose connections.

2. The vendor's qualified representative must properly disconnect all transfer hoses and provide assurance for the capture of residual product without discharge to the environment.

3. The vendor's qualified representative must inspect the fill area to ensure no residual product remains in or around the fill area. The vendor is responsible for delivery related spill cleanup.

**Note: Petroleum product transfers should be made during normal SU operating hours to help ensure appropriate response in the event of a discharge/spill.**

**This procedure is in accordance with NFPA 385, 2012 edition.**
[Per the requirements of 6 NYCRR 613.2-2(a)(1), 613.3-2(a)(1), and 613.4-2(a)(1)]

# Appendix D

EHSS Monthly UST Inspection Form

# Syracuse University - Environmental Health & Safety Services

## Monthly Underground Storage Tank Inspection Form

| | |
|---|---|
| **Tank ID No.:** | |
| **Tank Capacity:** | gallons |
| **Product Stored:** | |

| | |
|---|---|
| **Facility Name:** | |
| **Tank Location:** | |
| **Registration #:** | |

| Compliance Item | Yes | No | N/A | Notes/Comments |
|---|---|---|---|---|
| 1. Is the automatic tank gauge system functioning properly and indicating an accurate fuel level for the product in the tank? | | | | |
| 2. Is the tank's high level alarm functioning properly? | | | | |
| 3. Is the tank's primary vent pipe in good condition and free of visible obstructions? | | | | |
| 4. Is the tank's electronic leak detection system functioning properly, with all warning lights and audible alarms in good working condition? | | | | |
| 5. Are there any active alarms on the tank's electronic leak detection system? | | | | If yes, explain: |
| 6. Are copies of weekly leak detection records for the last 30 days accessible upon request? | | | | |
| 7. Is the tank's fill port or fill port containment (i.e., spill bucket) closed and locked? | | | | |
| 8. Is the tank's fill port containment in good condition and free of all liquids and debris? | | | | |
| 9. Are all tank top sumps in good condition and free of liquid and debris? | | | | |
| 10. Are all leak detection sensors properly positioned in the tank top sumps? (i.e., standing upright in lowest part of sump) | | | | |
| 11. Are all visible piping connections in good condition, with no signs of cracking, bulging, or corrosion? | | | | |
| 12. Are there any signs of spills or leaks near the tank system? | | | | If yes, notify EHSS immediately |
| 13. Is the Univesity's petroleum transfer procedure followed during all product transfers? | | | | |
| 14. Are transfer area protection equipment/supplies available and present during product transfers? (e.g., drain covers) | | | | |
| 15. Is emergency spill equipment/supplies readily available at or near tank? (e.g., speedy dry, absorbent pads, etc) | | | | |

| **Comments:** |
|---|
| |
| |
| |

| | |
|---|---|
| **Reviewed by:** | **Date:** |

# Appendix E

API RP 1637 Color Coding Chart

| GASOLINES | DISTILLATES | | |
|---|---|---|---|
| Unleaded | Ultra Low Sulfur | Low Sulfur | High Sulfur |
| High grade  |  |  Diesel |  |
| Middle grade  | |  No. 1 Fuel Oil |  |
| Low grade  | |  No. 2 Fuel Oil |  |
| |  |  Kerosene |  |

| ALCOHOL-BASED FUELS | BIODIESEL |
|---|---|
|  Note: See 2.5.1 for specific labeling requirements |  Note: See 2.4.1 for specific labeling requirements |

| USED OIL | OBSERVATION OR MONTORING WELL | VAPOR RECOVERY |
|---|---|---|
|  |  |  |

# Appendix F

EHSS Monthly AST Inspection Form

# Syracuse University - Environmental Health & Safety Services

## Monthly Aboveground Storage Tank Inspection Form

| | |
|---|---|
| **Tank ID No.:** | |
| **Tank Capacity:** | gallons |
| **Product Stored:** | |

| | |
|---|---|
| **Facility Name:** | |
| **Tank Location:** | |
| **Registration #:** | |

| Compliance Item | Yes | No | N/A | Notes/Comments |
|---|---|---|---|---|
| 1. Is the exterior paint on the tank in good condition, with no signs of cracking, bulging, or corrosion? | | | | |
| 2. Are there any signs of spills or leaks on or around the tank? | | | | If yes, notify EHSS immediately |
| 3. Is the tank on saddles, legs, stilts, rack or cradle and not in immediate contact with soil, or floor, or foundation pad? | | | | |
| 4. Are the tank's supports and foundation in good condition, with no signs of cracking, settling, or corrosion? | | | | |
| 5. For tanks that have a secondary containment area built around the base of the tank, is the containment area in good condition and free of liquid and debris? | | | | |
| 6. Is the tank's product level gauge and/or automatic tank gauge system functioning properly and indicating an accurate fuel level for the product in the tank? | | | | |
| 7. Is the tank's high level alarm functioning properly? | | | | |
| 8. Is the tank's primary vent pipe in good condition and free of visible obstructions? | | | | |
| 9. Is the tank's electronic leak detection system functioning properly, with all warning lights and audible alarms in good working condition? | | | | |
| 10. Are there any active alarms on the tank's electronic monitoring system? | | | | If yes, explain: |
| 11. For tanks with manually monitored interstitial spaces, is the interstitial space free of liquid and debris? | | | | |
| 12. Is the tank's fill port or fill port containment closed and locked? | | | | |
| 13. Is the tank's fill port containment in good condition and free of all liquids and debris? | | | | |
| 14. Is all of the visible piping in good condition, with no signs of cracking, bulging, or corrosion? | | | | |
| 15. Are there any signs of spills or leaks on or around any of the piping? | | | | If yes, notify EHSS immediately |
| 16. Are all product dispenser components in good condition and functioning properly? (e.g., pumps, dispenser hoses, nozzles, etc) | | | | |
| 17. Is the University's petroleum transfer procedure followed during all product transfers? | | | | |
| 18. Are transfer area protection equipment/supplies available and present during product transfers? (e.g., drain covers) | | | | |
| 19. Is emergency spill equipment/supplies readily available at or near tank? (e.g., speedy dry, absorbent pads, etc) | | | | |

**Comments:**

**Reviewed by:** **Date:**

# Appendix G

EHSS Annual UST Compliance Review Form for State & Federal Tanks

# Syracuse University - Environmental Health & Safety Services

## Annual Underground Storage Tank Compliance Review
## for USTs Subject to both State & Federal Regulations

| | | | |
|---|---|---|---|
| **Tank ID No.:** | | | |
| **Tank Capacity:** | gallons | | |
| **Product Stored:** | | | |
| **Date Installed:** | | **Tank Category** | |

| | |
|---|---|
| **Facility Name:** | |
| **Tank Location:** | |
| **Registration #:** | |
| **Expiration Date:** | |

| | |
|---|---|
| **Pumping/Dispensing Method:** | |

**Piping was Installed:** Before or After 10/11/15

| Compliance Item | Regulatory Reference | Yes | No | N/A | Notes/Comments (indicate source of info if not visually confirmed) |
|---|---|---|---|---|---|
| **Registration** | | | | | |
| 1. Is the current tank registration certificate displayed at all times in a conspicuous location at the facility, such as a main office or the tank monitoring system panel? | §613-1.9(g) | | | | |
| 2. Is all information listed on the tank registration certificate current and correct? | §613-1.9(a) | | | | |
| 3. Is all information contained on the EHSS individual tank summary spreadsheet current and correct? | BMP | | | | |
| **Tank** | | | | | |
| 4. Is the automatic tank gauge system functioning properly? | §613-2.2 (a)(6) | | | | |
| 5. Is the tank's high level alarm functioning properly? | §613-2.1 (b)(3)(i)(b) | | | | |
| 6. Is the tank's primary vent pipe in good condition and free of visible obstructions? | §613-2.2 (a)(6) | | | | |
| 7. Is the tank's interstitial space monitoring system functioning properly? | §613-2.3 (b)(1)(ii) | | | | |
| 8. Are copies of weekly leak detection records for the last 30 days accessible upon request? | §613-1.5(a) | | | | |
| 9. Is the tank system inspected on a monthly basis and are copies of the monthly tank inspections kept on file for the last 3 years? | §613-2.3 (b)(1)(iii) | | | | |
| 10. Is the tank's cathodic protection system tested at yearly intervals? | §613-2.2 (b)(2)(i) | | | | Date of last test: |
| 11. Are records of cathodic protection test results for the tank maintained for the past three years? | §613-2.2(b)(4) | | | | |
| 12. Are the results of the most recently completed tank tightness test kept on file? | §613-2.3 (e)(2) | | | | Date of last test: |
| 13. Is tank protected from becoming buoyant due to a rise in the water table, flooding or accumulation of water? | §613-2.2(e) | | | | |
| 14. For pump-filled USTs, are the fill pipes equipped with a properly functioning check valve? | §613-2.1 (b)(6)(iii) | | | | |
| 15. For gravity-drained USTs, are all connections equipped with a properly functioning operating valve? | §613-2.1 (b)(6)(iv) | | | | |

| Compliance Item | Regulatory Reference | Yes | No | N/A | Notes/Comments (indicate source of info if not visually confirmed) |
|---|---|---|---|---|---|
| **Fill Port & Tank Top Sumps** | | | | | |
| 16. Is fill port or fill port containment (i.e., spill bucket) closed and locked? | BMP | | | | |
| 17. Is fill port containment sufficient to prevent spills? | §613-2.1 (b)(3)(i)(a) | | | | |
| 18. Is fill port containment in good condition and free of liquid and debris? | §613-2.2 (a)(6) | | | | |
| 19. Is fill port labeled with the tank ID number, the design capacity, the working capacity, and the type of petroleum that is able to be stored in the tank? | §613-2.2(a)(3) | | | | |
| 20. Are fill port and fill port containment properly color coded and marked with the appropriate product symbol? | §613-2.2 (a)(4) | | | | |
| 21. Are all tank top sumps in good condition and free of liquid and debris? | §613-2.2 (a)(6) | | | | |
| 22. Are all leak detection sensors properly positioned in the tank top sumps? (i.e., standing upright in lowest part of sump) | §613-2.2 (a)(6) | | | | |
| **Piping** | | | | | |
| 23. Are all piping connections in good condition, with no signs of cracking, bulging, or corrosion? | BMP | | | | |
| 24. Is piping that is in contact with the ground properly designed, constructed, and protected from corrosion? | §613-2.1 (b)(2)(i)-(ii) | | | | How is it protected: |
| 25. Is cathodic protection system for piping tested at yearly intervals? | §613-2.2 (b)(2)(i) | | | | Date of last test: |
| 26. Are records of cathodic protection test results for piping maintained for the past three years? | §613-2.2(b)(4) | | | | |
| 27. For exempt suction piping, does the piping meet <u>all</u> of the following requirements? | §613-2.3 (b)(2)(i)(b) | | | | |
| a) Does suction piping operate at less than atmospheric pressure? | §613-2.3 (b)(2)(i)(b)(1) | | | | |
| b) Is suction piping sloped so that contents would drain back into UST if suction is released? | §613-2.3 (b)(2)(i)(b)(2) | | | | |
| c) Is there only one check valve in each suction line? | §613-2.3 (b)(2)(i)(b)(3) | | | | |
| d) Is the check valve located directly below and as close as possible to the suction pump? | §613-2.3 (b)(2)(i)(b)(4) | | | | |
| 28. Does pressurized and non-exempt suction piping installed after 10/11/15 have proper secondary containment? | §613-2.1 (b)(2)(ii) | | | | |
| 29. For non-exempt suction piping, is the piping's interstitial space monitoring system functioning properly? | §613-2.3 (b)(2)(ii)(b) | | | | |
| 30. For pressurized piping, are automatic line leak detectors <u>and</u> interstitial space monitoring system function properly? | §613-2.3 (b)(2)(ii)(a) | | | | |
| 31. For pressurized piping, are automatic line leak detectors tested for operability every year and are records of the most recent test kept on file? | §613-2.3 (d)(1) | | | | |
| 32. Are the results of the most recently completed product line tightness test kept on file? | §613-2.3 (e)(2) | | | | Date of last test: |

| Compliance Item | Regulatory Reference | Yes | No | N/A | Notes/Comments (indicate source of info if not visually confirmed) |
|---|---|---|---|---|---|
| **Dispensers** | | | | | |
| 33. Are all product dispenser components in good condition? (e.g., pumps, dispenser hoses, nozzles, etc) | BMP | | | | |
| 34. Does dispenser system have proper under-dispenser containment? | §613-2.1(b)(5) | | | | |
| 35. Is under-dispenser containment in good condition and free of liquid and debris? | §613-2.2(a)(6) | | | | |
| 36. Are remote pumping units for motor fuel dispensers equipped with a shear valve in the supply lines? | §613-2.1 (b)(6)(i) | | | | |
| 37. Is a solenoid or equivalent valve in place for gravity-fed motor fuel dispensers? | §613-2.1 (b)(6)(ii) | | | | |
| **Operator Training** | | | | | |
| 38. Has the facility designated properly authorized/trained Class A, Class B, and Class C Operators for the tank system and is the required list of all designated operators maintained on file? | §613-2.5(b)<br>§613-2.5 (f)(1) | | | | |
| 39. Are the currently designated Class A and Class B Operators correctly listed on the tank registration? | §613-1.9(a) | | | | |
| 40. Is the emergency contact list of UST Operators posted at the facility? | BMP | | | | |
| 41. Do any new employees need operator training? | BMP | | | | Confirmed with: |
| 42. Have any employees received operator training since the last annual review? | BMP | | | | Confirmed with: |
| 43. Are the required records maintained on file verifying successful completion of testing/training for Class A, Class B, and Class C Operators for as long as the operators are designated plus an additional 3 years? | §613-2.5 (f)(2) | | | | |
| **Misc.** | | | | | |
| 44. Are monitoring wells clearly identified and capped to prevent liquid from entering the well from the surface? | §613-2.2(a)(5) | | | | |
| 45. Is a proper as-built diagram of the tank system kept on file? | §613-2.1 (b)(4)(iii) | | | | |
| 46. Are copies of the required installer certifications kept on file for UST system components installed after 10/11/15? | §613-2.1 (b)(4)(iii) | | | | |
| 47. Are records of each repair that has been made to the UST system kept on file? (must be kept until UST is closed) | §613-2.2(d)(5) | | | | |
| 48. For leak detection equipment, are records of all calibration, maintenance, and repair kept on file for the last 3 years? | §613-2.3 (e)(4) | | | | |
| 49. For leak detection equipment, are schedules of required calibration and maintenance provided by equipment manufacturer(s) kept on file for 3 years after the date of installation? | §613-2.3 (e)(4) | | | | |
| 50. Is tank's capacity chart posted or available nearby? | BMP | | | | |
| 51. Is the petroleum transfer procedure up-to-date and posted or available nearby? | §613-2.2(a)(1) | | | | |
| 52. Are transfer area spill protection supplies available and present during product transfers? (e.g., drain covers) | BMP | | | | |
| 53. Is emergency spill equipment/supplies readily available at or near tank? | BMP | | | | |

| **Notes:** |
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| **Reviewed by:** | **Date:** |
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# Appendix H

EHSS Annual UST Compliance Review Form for State Only Tanks

# Syracuse University - Environmental Health & Safety Services

## Annual Underground Storage Tank Compliance Review
### for USTs Subject to State Regulations Only

| | | | |
|---|---|---|---|
| **Tank ID No.:** | | | |
| **Tank Capacity:** | gallons | | |
| **Product Stored:** | | | |
| **Date Installed:** | | **Tank Category** | |

| | |
|---|---|
| **Facility Name:** | |
| **Tank Location:** | |
| **Registration #:** | |
| **Expiration Date:** | |

| | |
|---|---|
| **Pumping/Dispensing Method:** | |

**Piping was Installed:** Before or After 10/11/15

| Compliance Item | Regulatory Reference | Yes | No | N/A | Notes/Comments (indicate source of info if not visually confirmed) |
|---|---|---|---|---|---|
| **Registration** | | | | | |
| 1. Is the current tank registration certificate displayed at all times in a conspicuous location at the facility, such as a main office or the tank monitoring system panel? | §613-1.9(g) | | | | |
| 2. Is all information listed on the tank registration certificate current and correct? | §613-1.9(a) | | | | |
| 3. Is all information contained on the EHSS individual tank summary spreadsheet current and correct? | BMP | | | | |
| **Tank** | | | | | |
| 4. Is the automatic tank gauge system functioning properly? | §613-3.2 (a)(6) | | | | |
| 5. Is the tank's high level alarm functioning properly? | §613-3.1 (b)(3)(i) | | | | |
| 6. Is the tank's primary vent pipe in good condition and free of visible obstructions? | §613-3.2 (a)(6) | | | | |
| 7. Is the tank's interstitial space monitoring system functioning properly? | §613-3.3 (b)(1)(iii) | | | | |
| 8. Are copies of weekly leak detection records for the last 30 days accessible upon request? | §613-1.5(a) | | | | |
| 9. Is the tank system inspected on a monthly basis and are copies of the monthly tank inspections kept on file for the last 3 years? | §613-3.3 (b)(1)(iv) | | | | |
| 10. Is the tank's cathodic protection system tested at yearly intervals? | §613-3.2 (b)(2)(i) | | | | Date of last test: |
| 11. Are records of cathodic protection test results for the tank maintained for the past three years? | §613-3.2(b)(3) | | | | |
| 12. Are the results of the most recently completed tank tightness test kept on file? | §613-3.3 (d)(2) | | | | Date of last test: |
| 13. Is tank protected from becoming buoyant due to a rise in the water table, flooding or accumulation of water? | §613-3.2(e) | | | | |
| 14. For pump-filled USTs, are the fill pipes equipped with a properly functioning check valve? | §613-3.1 (b)(5)(iii) | | | | |
| 15. For gravity-drained USTs, are all connections equipped with a properly functioning operating valve? | §613-3.1 (b)(5)(iv) | | | | |

| Compliance Item | Regulatory Reference | Yes | No | N/A | Notes/Comments (indicate source of info if not visually confirmed) |
|---|---|---|---|---|---|
| **Fill Port & Tank Top Sumps** | | | | | |
| 16. Is fill port or fill port containment (i.e., spill bucket) closed and locked? | BMP | | | | |
| 17. Is fill port containment sufficient to prevent spills? | BMP | | | | |
| 18. Is fill port containment in good condition and free of liquid and debris? | §613-3.2 (a)(6) | | | | |
| 19. Is fill port labeled with the tank ID number, the design capacity, the working capacity, and the type of petroleum that is able to be stored in the tank? | §613-3.2 (a)(3) | | | | |
| 20. Are fill port and fill port containment properly color coded and marked with the appropriate product symbol? | §613-3.2 (a)(4) | | | | |
| 21. Are all tank top sumps in good condition and free of liquid and debris? | §613-3.2 (a)(6) | | | | |
| 22. Are all leak detection sensors properly positioned in the tank top sumps? (i.e., standing upright in lowest part of sump) | §613-3.2 (a)(6) | | | | |
| **Piping** | | | | | |
| 23. Are all piping connections in good condition, with no signs of cracking, bulging, or corrosion? | BMP | | | | |
| 24. Is piping that is in contact with the ground properly designed, constructed, and protected from corrosion? | §613-3.1 (b)(2) | | | | How is it protected: |
| 25. Is cathodic protection system for piping tested at yearly intervals? | §613-3.2 (b)(2)(i) | | | | Date of last test: |
| 26. Are records of cathodic protection test results for piping maintained for the past three years? | §613-3.2(b)(3) | | | | |
| 27. For pressurized piping, are automatic line leak detectors functioning properly? | §613-3.3 (b)(2)(i)(b) | | | | |
| 28. If equipped, is the piping's interstitial space monitoring system functioning properly? | §613-3.2 (a)(6) | | | | |
| 29. Are the results of the most recently completed product line tightness tests kept on file? | §613-3.3 (d)(2) | | | | Date of last test: |
| **Dispensers** | | | | | |
| 30. Are all product dispenser components in good condition? (e.g., pumps, dispenser hoses, nozzles, etc) | BMP | | | | |
| 31. Does dispenser system have proper under-dispenser containment? | BMP | | | | |
| 32. Is under-dispenser containment in good condition and free of liquid and debris? | §613-3.2 (a)(6) | | | | |
| 33. Are remote pumping units for motor fuel dispensers equipped with a shear valve in the supply lines? | §613-3.1 (b)(5)(i) | | | | |
| 34. Is a solenoid or equivalent valve in place for gravity-fed motor fuel dispensers? | §613-3.1 (b)(5)(ii) | | | | |
| **Misc.** | | | | | |
| 35. Are monitoring wells clearly identified and capped to prevent liquid from entering the well from the surface? | §613-3.2 (a)(5) | | | | |
| 36. Is tank's capacity chart posted or available nearby? | BMP | | | | |
| 37. Is the petroleum transfer procedure up-to-date and posted or available nearby? | §613-3.2 (a)(1) | | | | |

| Compliance Item | Regulatory Reference | Yes | No | N/A | Notes/Comments (indicate source of info if not visually confirmed) |
|---|---|---|---|---|---|
| **Misc. (cont)** | | | | | |
| 38. Is a proper as-built diagram of the tank system kept on file? | §613-3.1 (b)(4)(ii) | | | | |
| 39. Are records of each repair that has been made to the UST system kept on file? (must be kept until UST is closed) | BMP | | | | |
| 40. For leak detection equipment, are records of all calibration, maintenance, and repair kept on file for the last 3 years? | §613-3.3 (e)(4) | | | | |
| 41. For leak detection equipment, are schedules of required calibration and maintenance provided by equipment manufacturer(s) kept on file for 3 years after the date of installation? | §613-3.3 (e)(4) | | | | |
| 42. Are transfer area spill protection supplies available and present during product transfers? (e.g., drain covers) | BMP | | | | |
| 43. Is emergency spill equipment/supplies readily available at or near tank? | BMP | | | | |

| **Comments:** |
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**Reviewed by:** **Date:**

# Appendix I

EHSS Annual AST Compliance Review Form

# Syracuse University - Environmental Health & Safety Services

## Annual Aboveground Storage Tank Compliance Review Form

| | | | |
|---|---|---|---|
| **Tank ID No.:** | | | |
| **Tank Capacity:** | gallons | | |
| **Product Stored:** | | | |
| **Date Installed:** | | **Tank Category** | |

| | |
|---|---|
| **Facility Name:** | |
| **Tank Location:** | |
| **Registration #:** | |
| **Expiration Date:** | |

| Compliance Item | Regulatory Reference | Yes | No | N/A | Notes/Comments (indicate source of info if not visually confirmed) |
|---|---|---|---|---|---|
| **Registration** | | | | | |
| 1. Is the current tank registration certificate displayed at all times in a conspicuous location at the facility, such as a main office or the tank monitoring system panel? | §613-1.9(g) | | | | |
| 2. Is all information listed on the tank registration certificate current and correct? | §613-1.9(a) | | | | |
| 3. Is all information contained on the EHSS individual tank summary spreadsheet current and correct? | BMP | | | | |
| **Tank** | | | | | |
| 4. Is the tank supported on a well-drained stable foundation which prevents movement, rolling, or settling of the tank? | §613-4.1 (b)(4)(i) | | | | |
| 5. Is the tank on saddles, legs, stilts, rack or cradle and not in immediate contact with soil, or floor, or foundation pad? | §613-4.1 (b)(4)(i) | | | | |
| 6. Are tank supports and tank foundation in good condition? | §613-4.1 (b)(4)(i) | | | | |
| 7. Is the tank capable of being monitored for leaks between the tank bottom and the impermeable barrier underneath? | §613-4.1 (b)(1)(v)(c) | | | | |
| 8. Is the exterior paint/corrosion protection on tank in good condition? (no cracking, bulging, or corrosion) | §613-4.1 (b)(1)(ii) | | | | |
| 9. Is the tank marked with the tank ID number, the design capacity, and the working capacity? | §613-4.2 (a)(3) | | | | |
| 10. Is a copy of the current tank registration posted at the tank? | BMP | | | | |
| 11. Is the tank marked with the appropriate product name and product symbol? | §613-4.2 (a)(4) | | | | |
| 12. Does the tank have proper secondary containment? | §613-4.1 (b)(1)(v) | | | | |
| 13. Is tank's secondary containment in good condition and free of all liquids and debris? | §613-4.2 (a)(6) | | | | |
| 14. Are containment drainage valves manually controlled and locked in a closed position? | §613-4.2(f) | | | | |
| 15. Is the tank's product level gauge and/or automatic tank gauge system functioning properly? | §613-4.2 (a)(6) | | | | |
| 16. Is the tank's high level alarm functioning properly? | §613-4.2 (a)(6) | | | | |
| 17. Are the tank's primary and emergency vent(s) in good condition and free of visible obstructions? | §613-4.2 (a)(6) | | | | |

| Compliance Item | Regulatory Reference | Yes | No | N/A | Notes/Comments (indicate source if not visually confirmed) |
|---|---|---|---|---|---|
| **Tank (cont)** | | | | | |
| 18. Is the tank's electronic leak monitoring system functioning properly? | §613-4.2 (a)(6) | | | | |
| 19. Is the tank's interstitial space monitor functioning properly? | §613-4.2 (a)(6) | | | | |
| 20. Is the tank's interstitial space free of liquids? | §613-4.2 (a)(6) | | | | |
| 21. Is cathodic protection system for tank tested at yearly intervals? | §613-4.2 (b)(2)(i) | | | | Date of last test: |
| 22. Are records of cathodic protection test results for tank maintained for the past three years? | §613-4.2(b)(4) | | | | |
| 23. Is the tank inspected on a monthly basis? | §613-4.3 (a)(1)(i) | | | | |
| 24. Are copies of the monthly tank inspections on file and available for the last 3 years? | §613-4.3(e) | | | | |
| 25. Is the tank protected from being impacted by vehicle traffic? | BMP | | | | |
| 26. Is tank protected from becoming buoyant due to a rise in the water table, flooding or accumulation of water? | §613-4.2(e) | | | | |
| 27. For pump-filled ASTs, does receiving tank have proper backflow prevention? (e.g., a check valve in fill line, a piping configuration that prevents backflow, etc) | §613-4.1 (c)(3)(iii) | | | | |
| 28. For gravity-drained ASTs, are all connections equipped with a properly functioning operating valve? | §613-4.1 (c)(3)(iv) | | | | |
| **Fill Port** | | | | | |
| 29. Is fill port or fill port containment (i.e., spill bucket) closed and locked? | BMP | | | | |
| 30. Is fill port or fill port containment properly color coded and marked with the appropriate product symbol? | §613-4.2 (a)(4) | | | | |
| 31. Is fill port containment sufficient to prevent spills? | §613-4.2 (a)(6) | | | | |
| 32. Is fill port containment in good condition and free of all liquids and debris? | §613-4.2(a)(6) | | | | |
| **Piping** | | | | | |
| 33. Is piping in good condition and shows no signs of corrosion or leaks? | §613-4.3(b)(1) | | | | |
| 34. Is secondary containment for piping in good condition and free of all liquids and debris? | §613-4.2 (a)(6) | | | | |
| 35. Is proper shielding/protection provided for piping located in areas susceptible to being damaged by people and equipment? | BMP | | | | |
| 36. Is piping that is in contact with the ground properly designed, constructed, and protected from corrosion? | §613-4.1(b)(2) | | | | How is it protected: |
| 37. Is cathodic protection system for piping tested at yearly intervals? | §613-4.2 (b)(2)(i) | | | | Date of last test: |
| 38. Are records of cathodic protection test results for piping maintained for the past three years? | §613-4.2(b)(4) | | | | |
| 39. Is underground piping equipped with properly functioning automatic line leak detectors? | §613-4.3 (a)(2)(i)(b) | | | | |

| Compliance Item | Regulatory Reference | Yes | No | N/A | Notes/Comments (indicate source if not visually confirmed) |
|---|---|---|---|---|---|
| **Dispensers** | | | | | |
| 40. Are all product dispenser components in good condition? (e.g., pumps, dispenser hoses, nozzles, etc) | BMP | | | | |
| 41. Are dispenser sumps properly maintained and free of all liquids and debris? | §613-4.2 (a)(6) | | | | |
| 42. Are remote pumping units for motor fuel dispensers equipped with a shear valve in the supply lines? | §613-4.1 (b)(5)(i) | | | | |
| 43. Is a solenoid or equivalent valve in place for gravity-fed motor fuel dispensers? | §613-4.1 (b)(5)(ii) | | | | |
| **Misc.** | | | | | |
| 44. Are monitoring wells clearly identified and capped to prevent liquid from entering the well from the surface? | §613-4.2 (a)(5) | | | | |
| 45. Is tank's capacity chart posted or available nearby? | BMP | | | | |
| 46. Is the petroleum transfer procedure up to date and posted or available nearby? | §613-4.2 (a)(1) | | | | |
| 47. Are transfer area spill protection supplies available and present during product transfers? (e.g., drain covers) | BMP | | | | |
| 48. Is emergency spill equipment/supplies readily available at or near tank? | BMP | | | | |

| **Comments:** |
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**Reviewed by:** **Date:**

# Appendix J

EHSS Annual PBS Tank Compliance Review Summary Form

# Syracuse University - Environmental Health & Safety Services

## Annual Petroleum Bulk Storage Tank Compliance Review
## Summary of Findings & Recommendations

SU EHSS has completed its annual compliance reviews of the University's petroleum bulk storage tanks for Main Campus, Physical Plant, Steam Station, and the Boathouse.

The following table lists the petroleum bulk storage tanks that were reviewed by SU EHSS and whether corrective actions are recommended to acheive or maintain compliance. **For storage tanks where corrective actions are recommended (as highlighted below), please see the attached individual compliance review summary for specific recommendations regarding the storage tank.**

| Tank ID No. | Capacity (gallons) | Product Stored | Year Installed | Tank Description AST = Aboveground Storage Tank, UST = Underground Storage Tank | Corrective Action(s) Recommended? |
|---|---|---|---|---|---|
| AS 1 | 230 | Diesel | 2006 | AST for Adams Street Garage generator set | |
| CARRIER DAY | 55 | Diesel | 1979 | AST inside Dome generator room | |
| CST 002 | 275 | Diesel | 1988 | AST inside CST penthouse for emergency generator | |
| CST3 | 1,500 | Diesel | 2005 | AST outside on CST loading dock (feeds CST 002) | |
| DAY 2001 | 275 | Diesel | 2001 | AST inside Day Hall generator room | |
| DOME UST | 3,000 | Diesel | 1994 | UST under sidewalk outside of Dome | |
| FLINT 2001 | 275 | Diesel | 2001 | AST inside Flint Hall generator room | |
| LYMAN 2001 | 275 | Diesel | 2001 | AST inside Lyman Hall generator room | |
| MACHINERY | 3,000 | Diesel | 2015 | AST outside of Machinery Hall | |
| PHYSICS1 | 275 | Diesel | 1991 | AST inside Physics Building generator room | |
| SHAW 2015 | 1,900 | Diesel | 2015 | AST for Shall Hall generator set | |
| SIMS 1 | 1,500 | Diesel | 2011 | AST for Sims Hall generator set | |
| SOM 2001 | 275 | Diesel | 2011 | AST inside Crouse-Hinds generator room | |
| AINSLEY 008 | 6,000 | Gasoline | 1998 | AST outside of P. Plant for vehicle refueling | |
| AINSLEY 009 | 275 | Motor Oil | 2001 | AST inside of Auto Garage at P. Plant | |
| AINSLEY 010 | 3,000 | Diesel | 2007 | AST outside of P. Plant for vehicle refueling | |
| AINSLEY 011 | 2,000 | Diesel | 2015 | AST oustside of P. Plant for emergency generator | |
| AINSLEY 012 | 300 | Used Oil | 2016 | AST inside Auto Garage for used oil burning heater | |
| SUSS 005 | 30,000 | #2 Fuel Oil | 1989 | UST under parking lot outside of Riley Plant | |
| SUSS 006 | 30,000 | #2 Fuel Oil | 1989 | UST under parking lot outside of Riley Plant | |
| SUSS 007 | 30,000 | #2 Fuel Oil | 1989 | UST under parking lot outside of Riley Plant | |
| SUSS 008 | 30,000 | #2 Fuel Oil | 1989 | UST under parking lot outside of Riley Plant | |
| SUSS 009 | 275 | #2 Fuel Oil | 1990 | AST outside of Alco Plant | |
| BOATHOUSE | 250 | Gasoline | 1993 | AST outside of Boathouse at Onondaga Lake | |

# Syracuse University - Environmental Health & Safety Services

## Annual Petroleum Bulk Storage Tank Compliance Review

### Individual Tank Summary - Findings & Recommendations

| | | | | | |
|---|---|---|---|---|---|
| **Tank ID No.:** | | **Reg No.:** | | **Tank Capacity:** | gallons |
| **Tank Location and Description:** | | | | **Product Stored:** | |
| | | | | **Date Installed:** | |

| Compliance Item | Findings & Observations | Recommended Actions |
|---|---|---|
| 1. Postings, Labeling, and Color Coding | | |
| 2. Tank Exterior, Foundation, and Supports | | |
| 3. Secondary Containment and Containment Sumps | | |
| 4. Overfill Protection and Spill Prevention | | |
| 5. Tank Monitoring System and Leak Detection | | |
| 6. Piping Exterior, Piping Integrity, and Check Valves | | |
| 7. Monthly Inspections and Inspection Records | | |
| 8. Cathodic Protection and Test Records | | |
| 9. Product Dispenser and Dispenser System Components | | |
| 10. Spill Response Equipment and Supplies | | |
| 11. UST Operator Training and Recordkeeping | | |
| 12. Miscellaneous Requirements & Misc. Recordkeeping | | |

| **Reviewed by:** | **Title:** | **Date:** |
|---|---|---|