

MEMORANDUM

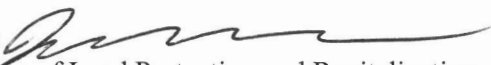
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF LAND PROTECTION AND REVITALIZATION
OFFICE OF SPILL RESPONSE AND REMEDIATION

Mail Address:
P.O. Box 1105
Richmond, VA 23218

Location:
1111 East Main Street
Richmond, VA 23219

SUBJECT: LPR-SRR-2019-03 - Storage Tank Program Compliance Manual, Volume V – AST Guidance

TO: Elizabeth Lamp, Petroleum Program Managers

FROM: Justin Williams 
Director, Division of Land Protection and Revitalization

DATE: September 30, 2019

COPIES: Regional Directors, Renee Hooper, Karen Haley-Wingate

Summary:

The regulatory provision being interpreted within this volume of the Storage Tank Program Compliance Manual is the revised DEQ *Aboveground Storage Tank (AST) Regulation 9VAC25-91* that became effective on November 1, 2015. The purpose of this document, Storage Tank Program Compliance Manual, Volume V – AST Guidance, is to combine previous decisions and documents for regulatory guidance into one reference for DEQ staff and to address the changes to the revised regulation such as the addition of section 145 noting performance standards for tanks specifically located in the City of Fairfax.

This guidance supersedes the following guidance and completes the update and re-issuance of **all** volumes included in the 2001 edition of Guidance No. 01-2025 Storage Tank Program Compliance Manual:

Guidance No. 01-2025 – Volume 5 (Oil Discharge Contingency Plan) of the Storage Tank Program Compliance Manual that was effective October 12, 2001.

Electronic Copy:

Once effective, an electronic copy of this guidance will be available on:

- The Virginia Regulatory Town Hall under the Department of Environmental Quality (<http://www.townhall.virginia.gov/L/gdocs.cfm?agencynumber=440>);
- The Department's website at <http://www.deq.virginia.gov/Programs/LandProtectionRevitalization/Laws,Regulations,Guidance.aspx>

Contact information:

Please contact Jennifer LaCroix, AST Program Coordinator at jennifer.lacroix@deq.virginia.gov or 757-518-2026 with any questions regarding the application of this guidance.

Certification:

As required by Subsection B of § 2.2-4002.1 of the Administrative Process Act (APA,) the agency certifies that this guidance document conforms to the definition of a guidance document in § 2.2-4101 of the Code of Virginia.

Disclaimer:

This document is provided as guidance and, as such, sets forth standard operating procedures for the agency. However, it does not mandate any particular method nor does it prohibit any alternative method. If alternative proposals are made, such proposals should be reviewed and accepted or denied based on their technical adequacy and compliance with appropriate laws and regulations.

Storage Tank Program Compliance Manual

Volume V: AST Guidance

Virginia Department of Environmental Quality

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1 Introduction

This volume of the Petroleum Storage Tank Compliance Manual provides guidance to the Department of Environmental Quality (DEQ) staff regarding aspects of AST inspection procedures and technical guidance regarding AST operation and maintenance.

In 1998, The Virginia State Water Control Board adopted a regulation, 9VAC25-91-10 *et seq.*, which consolidated the following three regulations:

- (i) Oil Discharge Contingency Plans and Administrative Fees for Approval, 9VAC25-90-10 *et seq.* (VR 680-14-07),
- (ii) Facility and Aboveground Storage Tank Registration Requirements, 9VAC25-130-10 *et seq.* (VR 680-14-12), and
- (iii) Aboveground Storage Tanks Pollution Prevention Requirements, 9VAC25-140-10 *et seq.* (VR 680-14-13), relating to facilities and ASTs located in the Commonwealth that have an aboveground storage capacity of 25,000 gallons or more of oil into a single regulation.

Concurrently the board repealed the three previously existing regulations. Section 62.1-44.34:15.1.5 was added which required the Board to establish criteria for granting variances from the AST Pollution Prevention Requirements (9VAC25-91-130 *et seq.*).

The AST regulations were again revised on November 1, 2015. The primary purpose of the revision was to incorporate new performance standards for certain aboveground storage tanks located in the City of Fairfax as mandated by actions taken by the 2011 General Assembly (CH 884 of the 2011 Acts of Assembly). Other changes align Virginia's regulatory requirements with federal requirements and current industry standards.

The Facility and Aboveground Storage Tank (AST) (9VAC25-91) Regulation (Regulation) establishes the following requirements:

- Registration of ASTs located within the Commonwealth;
- Pollution prevention standards and procedures applicable to facilities with an aggregate aboveground storage capacity of 25,000 gallons or greater of oil;
- Development of Oil Discharge Contingency Plans (ODCP) for facilities with an aggregate aboveground storage capacity of 25,000 gallons or greater of oil that will ensure the operator can take such steps as are necessary to:
 - protect environmentally sensitive areas;
 - respond to the threat of an oil discharge;
 - contain, clean up and mitigate an oil discharge within the shortest feasible time; and
 - address the effect of oil discharge on the environment.
- Groundwater characterization study (GCS) requirements for operators of facilities with an aggregate aboveground storage capacity of one million gallons or greater of oil.; and
- AST closure.

2 Program Administration

2.1 Definitions

The following words and terms when used in this document shall have the following meanings, unless the context clearly indicates otherwise. The notes are to better clarify the terms provided in the Regulation and this document.

“Aboveground storage tank” or “AST” means any one or combination of tanks, including pipes, used to contain an accumulation of oil at atmospheric pressure, and the volume of which, including the volume of the pipes, is more than 90% above the surface of the ground. This term does not include line pipe and breakout tanks of an interstate pipeline regulated under the federal Accountable Pipeline Safety and Partnership Act of 1996 (49 USC § 60101 *et seq.*).

“Alteration” means any work on a tank involving cutting, burning, welding or heating operations that; (a) changes the physical dimensions, or (b) configuration of the tank, or (a) and (b).

“Board” means the State Water Control Board.

“Best available technology” means state of the art equipment, materials, and technology, that are cost effective, proven effective, reliable and compatible with the safe operation of the facility and that are designed, installed, operated, and maintained according to good engineering practices and industry standards.

“Brought back into use” means an AST that has been closed and no longer operational and is then registered again and placed back into an operational condition; or the AST has been relocated and placed back into an operational condition.

“Change in service” means a change from the previous operating conditions involving: (a) different properties of the stored product, such as specific gravity or corrosivity or (b) different service conditions of temperature or pressure, or any combination thereof.

“Closure” means taking a tank, piping or equipment permanently out of service. It includes, but is not limited to, relocation and conversion to a non-oil storage.

“Conversion” means (a) a tank that was storing a non-oil product and is now storing an oil product or (b) a tank that was storing an oil product and is now storing a non-oil product.

“Containment and cleanup” means abatement, containment, removal and disposal of oil and, to the extent possible, the restoration of the environment to its existing state prior to an oil discharge.

“Corrosion professional” means a person who by reason of thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired by a professional education and related practical experience is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Such a person shall be accredited or certified as being qualified by the National Association of Corrosion Engineers or be a registered professional engineer who has certification or licensing

that includes education and experience in corrosion control of buried or submerged metal piping systems and metal tanks.

“Department” means the Department of Environmental Quality (DEQ).

“Discharge” means any spilling, leaking, pumping, pouring, emitting, emptying or dumping.

“Double-wall AST” means an AST having an inner and an outer wall with an interstitial space (annulus) between the walls and having means for monitoring the interstitial space for a failure (leak) in the primary tank.

“Elevated tank” means an AST which is not in contact with the ground and which is raised above the surface of the ground.

“Facility” means any development or installation within the Commonwealth that deals in, stores or handles oil and includes a pipeline.

Note: The definition of a facility applies when the function of a facility is to deal in, handle and store oil aboveground. Therefore, it is possible to have a regulated facility that does not actually have a regulated aboveground storage tank but does contain a regulated pipeline.

Multiple Operators or Multiple Facilities: A contiguous property may contain more than one owner or operator, but the oil storage operation under the control or responsibility of each operator is considered a separate facility. A single facility exists if the same owner or operator exercises control over all oil storage operations within the geographical boundary of that contiguous property. For military installations, a facility is the area under responsibility of a single command and therefore a single facility.

The facility owner or operator declares the scope of operational responsibility of the facility by completing and certifying the ODCP Application Form. The storage capacity listed in the application must reflect the information submitted for AST Registration.

Effect of the Phrase “and includes a pipeline”: The phrase “and includes a pipeline” means that an interstate or intrastate pipeline transporting oil is considered a “facility” as defined by this Regulation. However, pipelines are not subject to Part III and Part V of the Regulation.

For the purposes of this regulation, the demarcation of a pipeline facility and a storage terminal is that point where the contractual obligations for operation and maintenance begin and end for each operator. Transfer lines that are under the responsibility and control of the facility operator and extend beyond the property boundaries of the facility are considered part of the facility.

“Flow-through process tank” means (as defined in 40 CFR Part 280) a tank that forms an integral part of a production process through which there is a steady, variable, recurring or intermittent flow of materials during the operation of the process. Flow-through process tanks do not include tanks used for the storage of materials prior to their introduction into the production process or for the storage of finished products or by-products from the production process.

"Heating oil" means petroleum that is No. 1, No. 2, No. 4--light, No. 4--heavy, No. 5--light, No. 5--heavy, and No. 6 technical grades of fuel oil including Navy Special Fuel Oil and Bunker C; other residual fuel oils; and other fuels when used as substitutes for one of these fuel oils. Heating oil is typically used in the operation of heating equipment, boilers, or furnaces.

"Installation" means the placing of a new tank or equipment in a new location that is not part of the original facility or contiguous property.

"Local building official" means the person authorized by the Commonwealth to enforce the provisions of the Virginia Uniform Statewide Building Code (USBC).

"Local director or coordinator of emergency services" means any person appointed pursuant to §44-146.19 of the Code of Virginia.

"Major repair" means alterations that refer to operations that require cutting, additions, removal or replacement of the annular plate ring, the shell-to-bottom weld or a sizable portion of the AST shell.

"Oil" means oil of any kind and in any form, including, but not limited to, petroleum and petroleum by-products, fuel oil, lubricating oils, sludge, oil refuse, oil mixed with other wastes, crude oils and all other liquid hydrocarbons regardless of specific gravity.

Effect of the Phrase "all other liquid hydrocarbons regardless of specific gravity": The referenced phrase has been included in the definition of oil since the inception of the Federal Water Pollution Control Act (1972), later amended to the Clean Water Act (1977). As it applies to State Water Control Law, the phrase "all other liquid hydrocarbons regardless of specific gravity" includes products that are "oil-like" rather than other hazardous materials or toxic compounds. Animal and vegetable oils as well as compounds that are listed or designated in CERCLA are excluded from the Regulation (see § 62.1-44.34:17 and 9VAC25-91-30). For regulatory purposes, the phrase "all other liquid hydrocarbons regardless of specific gravity" means petroleum hydrocarbons such as gasoline, kerosene, fuel oils, lubricating oils, crude oils, waste oil and grease, and synthetic oils

Generally, ASTs storing liquids denatured with a petroleum hydrocarbon regardless of amount are subject to the Regulation. For example, an AST storing 99% biodiesel and 1% conventional diesel is subject to the Regulation.

"Operator" means any person who owns, operates, charters by demise, rents or otherwise exercises control over or responsibility for a facility or a vehicle or a vessel.

"Person" means an individual; trust; firm; joint stock company; corporation, including a government corporation; partnership; association; any state or agency thereof; municipality; county; town; commission; political subdivision of a state; any interstate body; consortium; joint venture; commercial entity; the government of the United States or any unit or agency thereof.

"Pipes" or "piping" means a pressure-tight cylinder used to convey a fluid or to transmit a fluid pressure and is ordinarily designated "pipe" in applicable material specifications. Materials designated "tube" or "tubing" in the specifications are treated as pipe when intended for "pressure service". This term includes piping and associated piping which is utilized in the operation of an AST, or emanating from or feeding ASTs or transfers

oil from or to an AST (e.g., dispensing systems, including airport hydrant fueling systems, supply systems, gauging systems, auxiliary systems, etc.). This term does not include line pipe and breakout tanks of an interstate pipeline regulated under the federal Accountable Pipeline Safety and Partnership Act of 1996 (49 USC §60101 *et seq.*).

Note: Suction piping or tubing not intended for pressure service can be considered exempt from the pipe testing requirements of the Pollution Prevention sections of the Regulation.

"Pipeline" means all new and existing pipe, rights of way and any equipment, facility or building used in the transportation of oil, including, but not limited to, line pipe, valves and other appurtenances connected to line pipe; pumping units; fabricated assemblies associated with pumping units; metering and delivery stations and fabricated assemblies therein; and breakout tanks.

Note: The term "pipeline" does not include transfer lines that are used to move product within a facility.

"Release prevention barrier (RPB)" means a non-earthen barrier that is impermeable; composed of material compatible with oil stored in the AST; meets proper engineering strength and elasticity standards and functions to prevent the discharge of stored oil to state lands, waters and storm drains. It must contain and channel any leaked oil in a manner that provides for early release detection through the required daily and weekly inspections.

"Relocation" means the movement of an AST, piping or equipment from one location to another location at the same facility.

"Replacement" means the installation of a tank, piping or equipment in the same location as the tank, piping or equipment that has been closed.

"Retrofitted" means the AST has been reconstructed or has had the bottom replaced or double bottom installed.

"Secondary Containment" means a structure or system designed to prevent the release of product from an AST entering state lands, waters or storm drains.

"State waters" means all water, on the surface and under the ground, wholly or partially within or bordering the Commonwealth or within its jurisdiction.

"Storage capacity" means the total capacity of an AST or a container, whether filled in whole or in part with oil, a mixture of oil, or mixtures of oil with nonhazardous substances, or empty. An AST that has been permanently closed in accordance with this chapter has no storage capacity.

"Tank" means a device designed to contain an accumulation of oil and constructed of non-earthen materials, such as concrete, steel, or plastic, that provides structural support. This term does not include flow-through process tanks as defined in 40 CFR Part 280.

"Tank vessel" means any vessel used in the transportation of oil as bulk cargo.

Note: For the purpose of the Regulation, this tank vessel definition includes tankers, tank ships, tank barges and combination carriers when carrying oil. It does not include vessels carrying oil in drums, barrels, portable tanks or other packages or vessels carrying oil as fuel or stores for that vessel.

“Upgrade” means an alteration of the performance, design, equipment or appurtenances of an AST or facility to meet a higher, new or current standard.

“Vaulted tank” means any tank situated upon or above the surface of the floor in an underground area (such as an underground room, basement, cellar, mine-working, drift, shaft, tunnel or vault) providing enough space for physical inspection of the exterior of the tank (see note in definition of *“Aboveground Storage Tank”*).

“Vehicle” means any motor vehicle, rolling stock or other artificial contrivance for transport whether self-propelled or otherwise, except vessels.

Note: Typically, DEQ does not consider vehicles licensed by the Virginia Department of Motor Vehicles (DMV) to be ASTs. However, if circumstances suggest the operator is using the vehicle as a tank for fuel storage rather than as a vehicle capable of self propulsion, then DEQ may treat it as an AST. Relevant examples may include a trailer without a cab or a rail car without the locomotive or motor unit combined with vegetation growth, dry rotted tires, long term storage, etc.

“Vessel” includes every description of watercraft or other contrivance used as a means of transporting on water, whether self-propelled or otherwise, and shall include barges and tugs.

3 Applicability

9VAC25-91-20. contains the applicability provisions for Registration, Pollution Prevention, ODCP, and GCS requirements. Requirements of the Regulation are based on the aggregate capacity of oil storage at the Facility. The following discussion sets out the relevant applicability provisions, along with interpretations made to date regarding those provisions.

3.1 Determining Facility Capacity

When calculating the aggregate aboveground storage capacity of a facility, staff should total the capacity of any ASTs with a storage volume greater than 660 gallons. However, any AST, regardless of capacity, that is excluded from this chapter’s requirements pursuant to 9VAC25-91-30 should not be included as part of the calculation in determining the aggregate facility storage capacity. For questions regarding facility capacity, the capacity of aboveground storage tanks is included in the facility’s aggregate storage capacity total until the tanks are permanently closed.

The following discussion highlights some particular circumstances where determining storage capacity may not be clear.

3.1.1 “First valve” rule for distinguishing ASTs from USTs

At facilities in which both ASTs and USTs are present, the aggregate facility storage capacity does not include UST storage capacity. Where product lines connect ASTs and USTs, the storage and/or handling capacity of individual aboveground storage tanks is added to the capacity of the lines up to the first valve inside and closest to the secondary containment wall prior to product flow to an underground storage tank system.

Bunkered tanks and bladders: Some facilities store oil in bunkered tanks and bladders. These bunkered tanks or bladders are partially covered with soil, but are above the contour of the surrounding land. If more than 90% of the volume of any tank or storage container (including piping volume) is above the ground surface, then the bunkered tank or bladder is considered aboveground storage. If more than 10% of the volume is below the ground surface, the bunker tank or bladder is considered an underground storage tank, which is regulated under a different set of regulations.

Vaulted Tanks: This term means any tank situated upon or above the surface of the floor in an underground area (such as an underground room, basement, cellar, mine-working, drift, shaft, tunnel or vault) providing enough space for physical inspection of the exterior of the tank. The capacity of vaulted tanks is counted in the aggregate facility capacity calculation.

Tanks in basements, cellars, or other underground areas are usually considered aboveground storage tanks. To be considered an AST, the tank must be on or above the surface of the underground area, have ready access (e.g. a manway), and provide enough space for physical inspection of the entire exterior of the tank. If there is no access and/or there is not enough space to inspect the tank, it is considered a UST system and not subject to the AST Requirements.

Rail Tank Cars: The storage capacity of stationary rail tank cars used for oil storage rather than for transportation is included in the facility capacity for determining the applicability of ODCP requirements. Indicators of whether the rail tank car is used for storage rather than transportation include: (1) its location at the facility; (2) whether it is connected to a locomotive; (3) whether the wheels are chocked; and (4) whether the product in the rail tank car has been consigned.

Trucks Used Only for Intra-facility Delivery: Where a tank truck is: (1) used to deliver oil to vehicles or equipment located within the facility; (2) kept loaded with product; and (3) usually located in one place when not in use, the tank truck is used to store oil for the facility and its capacity is added to the facility's storage capacity. Unless used solely for the storage of oil, licensed motor vehicle storage capacity is not included in facility capacity.

Empty Tanks: Empty tanks greater than 660 gallons that are not permanently closed are included in the facility capacity calculation. Further, the requirements of the Regulation apply to these empty tanks until permanently closed.

Exclusions from calculating capacity: The individual storage capacity of tanks excluded in 9VAC25-91-30.A. (Exclusions) is not included in the calculation for aggregate facility storage capacity. For example, large volumes of oil may be contained in electrical transformers that are grouped at substations or located individually throughout the state. However, because transformers are excluded under 9VAC25-91-30.A.17., their storage capacity is not included in the facility oil storage capacity.

Another common example is equipment that routinely stores oil for operation. The oil storage capacities of transformers, hydraulic presses, heat exchangers or similar equipment where oil is contained for operational purposes are not included in the facility capacity. The oil storage capacity of machinery and equipment where oil is contained only for operational purposes is not considered storage because such machinery and equipment is excluded pursuant to 9VAC25-91-30.A.14. **Exception:** Oil reservoirs (e.g., day tanks greater than 660 gallons capacity) which are not part of the equipment and separate tanks used to contain oil for operational purposes are included in the capacity.

3.2 Summary of AST Requirements

Aggregate AST Facility Capacity (gal)	0-≤660	>660 to <25K	≥25K to <1MM	≥1MM
AST REQUIREMENT				
Excluded from Regulation	x			
Registration of Tank(s)		x	x	x
Re-registration every 5 years		x	x	x
Tank reviewed by local building official or VADEQ		x	x	x
Record Keeping		x	x	x
Closure Assessment		x	x	x
Oil Discharge Contingency Plan (22 items)			x	x
Inventory Control Testing			x	x
Secondary Containment			x	x
Safe Fill & Shut Down			x	x
Pressure Testing of Pipes			x	x
Visual Daily/Weekly Inspection of Tanks			x	x
Training of Individuals			x	x
Leak Detection			x	x
Formal Inspection (new tanks)				x
Formal Reinspection				x
Safe Fill & Shut Down and High Level Alarm				x
Cathodic Protection of Pipe				x
Groundwater Characterization Monitoring (GCS)				x

4 Administrative Fees

4.1 Fee Assessment

Fees are only assessed for review of new oil discharge contingency plans (ODCP). An application for review of a new contingency plan will not be accepted unless the required fee has been received by the department.

- Fees shall be paid in United States currency by check, draft, or postal money order made payable to the Treasurer of Virginia. Although not an option at this time, electronic payments will be accepted when these services become available to the department.
- The fee, together with the application and oil discharge contingency plan, shall be sent to the department at the following mailing address:

Department of Environmental Quality
Office of Financial Management
P.O. Box 1104
Richmond, VA 23218

4.2 ODCP Application Fees

ODCP application fees are as follows:

<u>Facility AST Capacity (gallons)</u>	<u>Fee</u>
25,000 - 100,000	\$718
>100,000 - <1,000,000	\$2,155
≥ 1,000,000	\$3,353

The fee for approval of a contingency plan encompassing more than one facility as described in 9VAC25-91-170.D. shall be based on the aggregate aboveground storage capacity of the facilities.

Fees shall only be paid upon initial submittal of an oil discharge contingency plan by an operator. Renewals, additions, deletions or changes to the plan are not subject to the administrative fee.

Application fees are refundable upon receipt of a written request to withdraw the ODCP application. The request to withdraw the ODCP must be made within 30 days of application fee payment, ODCP submittal and prior to the department's review of the contingency plan. Requests should be made to the regional office handling the ODCP application. Regional staff should then contact the Office of Financial Management (OFM).

Overpayments of application fees are refundable upon written request. Requests should be made to the Office of Financial Management.

Note: For a pipeline, the ODCP application fee must be based on the average daily throughput of oil. Once that volume is determined, the ODCP application fee will be calculated as described above.

5 Facility Compliance Inspections

5.1 Inspection Planning

Each Regional Office (RO) should plan inspections for its AST facilities during each state fiscal year. Inspection planning should include consideration of DEQ's inspection goal which is to inspect each facility with a total storage capacity equal to or greater than 25,000 gallons every five years. These inspections should consist of both pollution prevention and ODCP inspection components and should be conducted around the time that the ODCP renewal is due.

- **Facilities Requiring Inspection.** A formal inspection is required for all active AST facilities with an aggregate storage capacity of 25,000 gallons or more. This formal inspection includes any components associated with the pollution prevention requirements of the Regulation in addition to any on-site verification for an ODCP renewal.
- **Inspection Frequency.** Active AST facilities should be formally inspected every five years to assess both compliance with pollution prevention requirements and the accuracy and relevance of the facility's ODCP. This inspection should be performed in conjunction with the ODCP renewal.
- **Resource Sharing.** Petroleum Program Managers (PPMs) and OSRR staff will periodically identify resource needs that may be addressed with resource sharing amongst regional offices (ROs).

5.2 Inspector Training

Before new AST inspectors are permitted to conduct unaccompanied inspections, the RO will provide training that includes the following topics:

- **DEQ Program Guidance.** Applicable sections of this manual (Volumes I, II, IV, and V) and any applicable staff guidance.
- **AST Training.** It would be beneficial for a new inspector to review online information on AST facility operations and to attend DEQ sponsored training when periodically offered. Federal SPCC training and online guidance are excellent resources that will familiarize the new inspector with key terms and oil handling logic.
- **OSHA and safety-related training.** Safety training topics will include those listed in Appendix Y (Regional Training Safety Topics)
- **Field Training.** Field training by a senior staff member (mentor) will demonstrate proper inspection procedures and checklist completion. Training should include:
 - Registration, closure, and compliance records review procedures;
 - Daily & weekly inspection records review;
 - Pipe & tank leak detection inspection;
 - Secondary containment systems and certification review;
 - Safe Fill and Shutdown procedure inspection;
 - Corrosion protection systems; and
 - Groundwater monitoring network inspection (if any GCS).
- **CEDS Facility Tank Module (CEDS) Training.** This training should be conducted in accordance with the CEDS database operations discussed in the guidance document *LPR-SRR-2016-02, CEDS Tanks Compliance and Registration User Manual* on the DEQ website.

5.3 Compliance Evaluation

5.3.1 DEQ Compliance Inspections using DEQ Form 7542-AST

The compliance evaluation includes an inspection of the Pollution Prevention components, verification of pertinent ODCP items, and a condition assessment of the groundwater monitoring wells, as applicable. DEQ inspection staff will use the DEQ Inspection Form 7542-AST to evaluate all regulated AST systems at a single facility.

5.3.2 Pre-Inspection Preparation

In order to maximize efficiency and be prepared in the field, inspectors should perform these tasks in the office prior to the field inspection:

- **Determine Inspection Schedule.** When devising their inspection schedule, inspectors should make a conscientious effort to efficiently use state resources and time. The inspector should draft an

inspection schedule by possible facilities, dates, and times. The inspector should plan the relative time for each inspection and the driving time between inspections. A typical AST inspection at a small facility or bulk plant usually takes about 2 hours to complete. Large or very complex facilities usually take around 4 hours to inspect.

- **Verify tank owner/operator information.** The inspector should determine if the CEDS tank owner address, owner contact name, owner phone number, owner/contact email and mailing address are correct by contacting the tank owner and/or contact using the current CEDS telephone numbers. During this information verification process, the inspector should specify the date and time of the planned inspection. A voice mail message or e-mail may be left if the owner or contact is unavailable.

If the current CEDS owner or contact data is incorrect and the inspector is unable to contact the appropriate party, the inspector should attempt to determine the correct owner information prior to the inspection by using other sources. DEQ Electronic Content Management (ECM) records, on-line local government tax and property records, state corporation records, and internet searches are good resources to obtain contact information.

- **Provide advance notice of the formal inspection.** The inspector should contact the tank owner prior to the inspection to ensure the appropriate paperwork and contacts are available for the inspection. The inspector may call, email, or provide written notice of the inspection.
- **Review facility records.** Each inspector should conduct a thorough records review prior to each inspection to gain an understanding of the facility and its history. The following records may be obtained from CEDS and ECM and should be reviewed (as applicable) prior to the inspection:
 - Registration Form;
 - ODCP;
 - GCS (if applicable);
 - Previous inspections;
 - Testing records;
 - Closure records; and
 - Pollution Complaint files.
- **Review Parts XIX, XX and XXI of DEQ Form 7542-AST.** Complete Part XIX (registration information) of the DEQ Form 7542-AST in anticipation of field verification during the inspection. The inspector should also become familiar with the field components of the Groundwater Monitoring Network (Part XX) and as detailed in Section XXI of the DEQ Form 7542-AST in anticipation of field verification during the inspection.
- **Determine if any active remediation or enforcement cases exist.** The inspector should review the CEDS facility information to determine if any active remediation or enforcement cases exist. If any remediation case is noted or other violations identified in Warning Letters or Notices of Violations, note these for follow-up. If an outstanding remediation or enforcement case exists, the inspector should coordinate the inspection with the case manager.

5.3.3 On-site Inspection Activities

To conduct formal inspections, the inspectors will:

- **Interview the facility site contact.**
- **Perform visual equipment verification.** The AST(s), secondary containment structures, associated piping, and equipment should be visually examined to identify missing or improperly installed equipment, structural integrity issues, labeling and if any leaks are occurring.
- **Complete DEQ Form 7542-AST.** The DEQ Form 7542-AST (AST Inspection Checklist) guides the evaluation of the significant aspects of AST operational compliance (Section 8 of this manual).
 - Part XIX of Form 7542-AST addresses the current registration information (from CEDS) that should be reviewed prior to the inspection.
 - Part XX of Form 7542-AST addresses the condition and location assessment of the monitoring wells (if used).
 - Part XXI of Form 7542-AST addresses the necessary field verification of ODCP elements, as discussed in Section 10.4 of this manual.

Completion of all items is necessary unless the requirements are not applicable to the facility.

- **Discuss with the owner and/or operator possible compliance options** (if applicable).
- **Document any apparent non-compliant issues on the Inspection Forms** (if applicable).
- **Notify the owner/operator of the potential for enforcement action.** (See Volume IV of the Petroleum Storage Tank Manual).
- **Access to equipment and demonstrations.** Inspectors must ensure that the actions they undertake at a facility do not create a hazardous situation or result in damage to the facility. Therefore, the inspection verification methods are limited to interview and visual examination techniques. A basic principle of acceptable inspection technique is that any verification requiring demonstrations (e.g., use of the equipment) must be performed by the facility operator.

Once the inspection begins, the tank owner/operator should not:

- limit the scope of the inspection,
- require DEQ staff to sign waivers limiting liability or confidentiality agreements,
- deny photography (except at secure federal sites) of items that reasonably relate to the inspection or are evidence of non-compliance,
- refuse or limit the staff's ability to view documents necessary to conduct the inspection, or
- take other actions as discussed in Enforcement Guidance Memorandum No. 1-2011 "Access to Private Property for Inspections and Investigations, Denial of Access, and Obtaining Administrative Warrants when Conducting Inspections."

If the tank owner or operator objects to or impedes the inspection in any way, the inspector should immediately leave and notify their manager.

- **Discrepancies between CEDS Information and Inspection Observations.** The inspector should contact the facility contact for an explanation of any discrepancies between the CEDS data and the interview data or field observations. If the inspector conducts the CEDS review after the inspection, the inspector must obtain an explanation of any discrepancy as part of the inspection follow up.

If comparison of registration data on file with the agency (whether or not CEDS entry has been completed) with the information discovered during the inspection or ODCP suggests that Form 7540-AST (Registration for Facility and Aboveground Storage Tank) is inaccurate, the inspector should note the need for a registration amendment.

5.3.4 Post Inspection

Following the inspection the inspector should:

- **Determine if follow up is necessary and perform such follow up.** After the inspection, the inspector should review the inspection checklist to determine if any follow up with the facility owner is necessary. Examples in which follow up may be necessary occur where the operator lacked required records at the time of the inspection and requested the opportunity to provide them after the inspection, or where the owner or site contact offered to address a potential noncompliance issue immediately.
- **Begin any enforcement activity required.** Where the inspector documented apparent violations, enforcement activities, as described in the DEQ's Enforcement Manual should be initiated.
- **Compare data against CEDS to identify and resolve discrepancies.** The inspector should compare the observations the inspector made at the site to the information reported from the Form 7540 in the CEDS database. If discrepancies exist, the inspector will follow up with the owner to ensure the owner files amended AST Registration Form 7540 reflecting current information.
- **Perform data entry into CEDS.** The inspector will perform data entry of the inspection results in the Tank Facilities module of CEDS.

6 Registration, Notification, and Closure

6.1 Registration

An operator of an individual AST located within the Commonwealth with a storage capacity of more than 660 gallons of oil and an operator of a facility with an aggregate storage capacity of at least 1,320 gallons is required to register the facility or tanks with DEQ. The information provided in this section addresses how registration compliance should be verified during an AST inspection. Volume 2 (Registration and Closure) of the Storage Tank Program Compliance Manual provides more detailed guidance to DEQ staff on the registration requirements applicable to regulated ASTs.

The regulation contains registration and notification requirements applicable to ASTs over 660 gallons. Virginia DEQ Form 7540-AST (Volume 2 Registration and Closure) was developed to serve as both a registration and a notification document to DEQ. This Form is to be used whenever notification is required for initial registration/renewal, information correction, change of ownership, or substantial modification of an AST. DEQ uses this information to maintain an inventory of ASTs in Virginia and to track compliance with the Regulation.

- For all tanks, Form 7540-AST details information about the facility operator, contact personnel and facility location. Form 7540-AST also requires tank specific information regarding the content, capacity, construction and type of piping. If the notification is being provided as part of a tank closure, closure specific information is necessary. Although the Regulation differentiates between registrations and notifications, for purposes of registration review and processing, the two activities are the same.
- Registration is required for unlicensed motor vehicles and unlicensed rolling stock (train cars) within a single facility used solely for the storage of oil since these tanks are regulated.
- For facilities with a storage capacity of 25,000 gallons or more, additional information is required on the Form 7540-AST about pipe and secondary containment evaluations, type of secondary containment, type of release prevention barrier and release detection methodology.
- For facilities with storage capacity of 1 million gallons or more, specific information about the most recent internal and external inspection is necessary to complete Form 7540-AST.
- Although the Regulation defines an “operator” to include many different entities, DEQ will first pursue the owner of the facility to obtain compliance with registration and notification requirements.
- The owner (or a duly authorized representative) is required to register a facility or AST with DEQ within 30 days of any of the following events:
 - New facility;
 - New tank installation at existing facility;
 - Conversion of tank (non-oil to oil product);
 - AST brought back into use after permanent closure; and
 - Change of ownership of facility or AST.
- Similarly, the owner (or authorized representative) must notify DEQ by submitting a Form 7540-AST within 30 days after any AST:
 - Upgrade;
 - Major repair;
 - Alteration;
 - Retrofit;
 - Replacement (i.e., relocating or repositioning of an existing AST); or
 - Change in service (i.e., change in operation, conditions of the stored product, specific gravity, corrosivity, temperature or pressure that has occurred from the original that may affect the tank's suitability for service).
- The owner must renew the registration of an AST or AST Facility every five years by submitting a complete registration Form 7540-AST to DEQ. The five year renewal period is calculated based on the original registration date. If a new tank is registered at an existing facility, the new tank assumes the pre-existing renewal schedule of the original facility registration.

6.2 Temporary Tanks

ASTs that are on a facility property for less than 120 days and meet one of the following conditions are excluded from the AST regulatory requirements: (1) the AST is used for containment and cleanup of oil; (2) the AST is used by a government entity for emergency response; or (3) the AST is used temporarily on site to replace permanent storage capacity. However, small ASTs may appear temporarily on a site, which do not meet one of the three conditions above. For example, a small AST may be located on a property for six weeks to store fuel for short-term construction activities. Generally, only registration and closure requirements apply to these tanks due to the storage capacity of the facility. Tanks that are moved from location to location at the same site would not be considered temporary tanks for purposes of this section.

6.3 Compliance Review

Prior to or during an AST inspection, the inspector should conduct a review of the facility registration information in CEDS and ECM to determine if:

- The current registration data below is valid,
 - ownership information
 - facility location
 - tank/piping construction information on Form 7540 consistent with field conditions
 - ODCP approval, secondary containment certification, release prevention and leak detection information current and accurate
 - internal & external inspection dates (for 1 million+ gallon facilities)
 - closure information (if applicable)
- The registration renewal is up to date, and
- All ASTs greater than 660 gallons are accounted for on the registration form.

The inspector should complete Section XIX of the AST inspection checklist and discuss the registration information during the inspection. If any registration information is incorrect, the inspector should attempt to obtain a signed and revised Form 7540-AST during the facility inspection. If the inspector is unable to obtain a new Form 7540-AST during the inspection, they should indicate on the inspection form that a noncompliance issue exists for “Registration” and identify any reasons for noncompliance.

Volume II of the Storage Tank Program Compliance Manual provides detailed registration processing requirements. Staff should enter new AST registration information into CEDS within 15-30 days after inspection.

7 AST Closure

Operators of ASTs with an aboveground storage capacity of more than 660 gallons of oil are subject to regulatory closure requirements. Tanks with 660 gallons or less of oil capacity are excluded from the Regulation and are not subject to DEQ regulatory closure requirements, but owners should ask local code officials about any building and fire code requirements. Properly closing inactive or outdated storage tank systems is an important measure in preventing ongoing and/or future releases from tank systems.

The information provided below is general and primarily addresses compliance issues that should be considered during an inspection. Volume II of the DEQ Storage Tank Compliance Manual addresses specific requirements and procedures for formally closing regulated ASTs. The information below is a summary of that process and is provided to ensure completeness.

7.1 Closure Process

An AST operator must perform the following six tasks in order to close an AST:

1. Obtain a permit from the local building official
2. Remove the product and secure the tank
3. Assess the site
4. Obtain a closure inspection from the local official
5. Submit a closure report to DEQ (see Section 3.3.1.5 of Vol. II for content of report)
6. Maintain closure records for 5 years.

NOTE: Analytical results for samples collected during AST closure that equal or exceed 100 mg/kg TPH (soil) or 1 mg/L TPH (groundwater) must be reported to the DEQ Regional Office immediately upon learning of the results. Analytical results for other petroleum constituents that exceed the detection limit of that constituent must be reported to DEQ upon receipt of the analytical results. Compliance staff should refer results that indicate contamination exceeding the relevant thresholds to remediation staff for handling.

NOTE: Once a facility is closed and all the ASTs are closed, and all remediation is complete, groundwater wells being used for GCS / leak detection serve no purpose and should be properly abandoned.

7.2 ASTs Closed Prior to 1998

ASTs closed prior to June 24, 1998 where (1) DEQ staff have observed the tanks and/or reviewed closure documentation and believe that the closure activities performed at the site may have been inadequate to prevent ongoing and/or future discharges from the AST and/or (2) a discharge from the AST is suspected, DEQ may require the operator to assess the site and close the AST in accordance with Section 120 of the Regulation. In these cases, staff should consult with Central Office before proceeding.

7.3 AST Closure – Capacity Less than or Equal to 660 Gallons

The Regulation does not specify closure procedures for ASTs with a capacity of 660 gallons or less since they are not regulated. DEQ does not require a tank operator to collect water or soil samples as part of closure, nor is the owner or operator required to submit any type of closure notification to DEQ. If a discharge of oil is discovered during closure or at any other time, however, the tank operator must report the discharge to DEQ immediately upon learning of the results.

Although the Regulation does not impose closure requirements on these types of tanks, the Virginia Uniform Statewide Building Code contains applicable closure requirements. These requirements may be enforced by local building officials. If compliance staff should receive a closure report for an unregulated tank, staff should review to determine if a discharge has occurred and pass the closure on to remediation staff, if necessary. If

the report indicates a clean closure, the inspector should notify the tank owner/operator that the report will be discarded.

7.4 Closure Compliance Evaluation

Regional inspectors generally review regulated AST closure documentation for compliance with the Regulation. An AST Closure Checklist found in Appendix X is available for staff to use when reviewing AST closure documentation to ensure that the necessary information has been provided. If the documentation is incomplete or indicates that closure was not performed correctly, staff should send a letter or other informal compliance mechanism to the owner or operator outlining the deficiencies. If staff cannot perform a complete closure review upon receipt, staff should review the report initially for evidence of a petroleum discharge. If the closure report contains evidence of a possible discharge, remediation staff should be notified of the potential petroleum discharge.

It usually isn't necessary for DEQ staff to inspect AST closures because the local code officials are typically tasked with that responsibility by regulation. However, DEQ may need to perform a closure inspection at an AST facility if the local official is unable or does not conduct the inspection. When DEQ staff performs the closure inspection, a file memo should be placed in to DEQ's Electronic Content Management (ECM) system documenting the visit.

If there are no deficient items found during the closure review (or the deficiencies are corrected) and no evidence of a petroleum discharge is indicated in the documentation, staff should send a letter to the tank operator accepting the tank closure. The tank closure status (dismantled, closed in place, or permanently out of use) should be updated in CEDS. Typically tank closure will be categorized as either "dismantled" or "closed in place". The "permanently out of use" category has been used in the past to address a wide range of tank closure conditions. Going forward, the "permanently out of use" category, should be reserved for unique circumstances, such as abandoned tanks and tanks closed without a closure report.

8 Pollution Prevention

8.1 Formal AST Requirements for facilities with AST \geq 25,000 gallons

8.1.1 Inventory Control

8.1.1.1 Description

AST Inventory Control (IC) is not considered a leak detection method but it may establish a loss trend of product in between the required approved monthly leak detection evaluations. Inventory control (IC) involves measurements of tank contents, recording fuel deliveries, metering of fuel pumped and mathematical calculations that compare the measured inventory to the book inventory (volume that the meters and delivery receipts indicate that should be there). If the difference between the measured inventory and the book inventory is significant, it could be an indication that the tank may be leaking.

8.1.1.2 Methodology

Inventory control involves the following items:

Gauging of tank contents. Various gauging methods are appropriate such as tape reel gauges, tape gauges, electronic gauges, or meters. Sight glass gauges usually do not have enough accuracy or precision to use for daily fuel measurements. Gauging must occur every day of normal business operation for manned locations and no less frequently than once every 14 days for remote unmanned locations.

Records of incoming and outgoing volumes of oil. There are many different ways that product is received and/or dispensed depending on the type of tank. Many large facilities receive oil from pipeline. The pipelines have their own requirements on metering and inventory management that are very accurate, and DEQ accepts those records. Truck and barge deliveries can be more cumbersome than movements via pipeline and require more operator attention. For a refinery, the operator must calculate the input and output of oil at the refinery on a daily basis. Daily inventory records and monthly reconciliation records of the inventory measurements must be maintained for 5 years.

Reconciliation of inventory records to 1.0%. The inventory records can be reconciled by totaling the measured tank contents plus any fuel received into the tank and subtracting the amount of fuel that was removed from each tank. This value is then compared monthly to the sum of the daily over/under total. If the difference is over 1% of storage capacity, for two consecutive months, then an investigation should be initiated to determine the cause of the variation.

8.1.1.3 Inventory Control Variances by Regulation/Exemptions

Many regulated aboveground storage tanks are excluded from the Inventory Control requirements because of incorporated variances as described below. There are eleven variances by regulation identified in Section 160.D of the Regulation, mostly pertaining to inventory control. The concept for these variances is that they have sufficient engineering or design safeguards in place to ensure that if there was a leak from the AST or associated piping, the leak will be visible and/or the risk to the environment is minimal due to fuel type and system design.

The following aboveground storage tanks are not subject to inventory control and testing for significant variations:

1. ASTs that are totally off ground AND:
 - a. All associated piping is off ground;
 - b. All associated buried piping is double walled; or
 - c. All associated piping meets the requirements using a combination of 1a and 1b of this subsection.
2. ASTs with a capacity of 5,000 gallons or less and located within a building or structure designed to fully contain a discharge of oil.
3. ASTs containing No. 5 or No. 6 fuel oil for consumption on the premises where stored.
4. ASTs with release prevention barriers (RPBs), an established corrosion rate and cathodic protection that protects the entire area of the tank bottom, AND:
 - a. All associated piping is off ground;
 - b. All associated buried piping is double walled; or
 - c. All associated piping meets the requirements using a combination of 4a and 4b of this subsection.

5. ASTs with release prevention barriers (RPBs), and secondary containment that is capable of containing oil for 72 hours, AND:
 - a. All associated piping is off ground;
 - b. All associated buried piping is double walled; or
 - c. All associated piping meets the requirements using a combination of 5a and 5b of this subsection.
6. ASTs that meet the construction and installation standards of STI-F911, F921, or F941, or equivalent standards approved by the department.
7. For refineries with a continuous leak detection monitoring system and cathodic protection of the AST and piping, a significant variation of inventory shall be considered a loss in excess of 3.0% by weight of the difference between the refinery's input and output.
8. Vaulted tanks that meet UL 2245 or an equivalent standard approved by the board. The inspections for these tanks required in 9VAC25-91-130.B.5. need to be conducted no more frequently than once every 31 days. The criteria for the visual daily inspection and weekly inspection checklist shall be incorporated into a monthly checklist.
9. An AST used in the production/manufacturing process with full containment that is capable of containing oil for 72 hours.
10. An AST of 12,000 gallons or less with full containment that is capable of containing oil for 72 hours, inside a building and used for the storage of heating oil consumed on the premises.
11. A double-walled AST. The inspections required in 9VAC25-91-130.B.5. need be conducted no more frequently than once every 31 days. The criteria for the visual daily inspection and weekly inspection checklist shall be incorporated into a monthly checklist.

8.1.1.4 Compliance Review (Section III of AST Inspection Checklist – Appendix W)

Because inventory control is not a leak detection test, only a general review of inventory records is necessary. In order to evaluate compliance with inventory control requirements, the inspector should perform the following actions during the inspection:

- Verify Inventory Control (IC) has been conducted by reviewing several months of IC records for each AST. Scan through the last twelve months of inventory records to verify inventory has been conducted and choose three consecutive months of inventory records to be reviewed in more detail.
- Ensure each tank is measured or gauged at least every operating day and no less than every 14 days for remote facilities or when not storing oil.
- Ensure the inventory data for each tank is reconciled monthly to at least 1.0% of the storage capacity. If there was a significant variation of more than 2 consecutive months, was an investigation conducted? Did the owner notify DEQ after the inventory variation investigation?
- Determine if the inventory control records are kept for five years. The inspector should enter the beginning and ending dates for the five-year record review period observed. The inspector may request to see the five years of records if they feel it is necessary.

8.1.2 Secondary Containment (SC)

The purpose of secondary containment is to provide temporary containment of released petroleum liquids from aboveground storage tanks and piping systems. Secondary containment structures should prevent any released product from entering the groundwater, surface waters, and navigable waters before cleanup occurs. Secondary containment usually consists of some combination of dikes, berms, liners, ponds, surface or remote impoundments, curbs, outer tank walls or other equipment capable of containing the stored liquids. Secondary containment should have a low permeability bottom to reduce the potential for releases to groundwater.

The secondary containment system needs to be evaluated every ten years by a Professional Engineer (PE) licensed in Virginia or via reciprocity with equivalent status to a PE licensed in Virginia. The operator needs to have each secondary containment or approved method evaluated and certified to be in compliance with the applicable requirements of 40 CFR Part 112 (EPA's Spill Prevention control and Countermeasures SPCC Requirements), the Uniform Statewide Building Code (USBC) and its referenced model codes and standards, and 29 CFR 1910.106(OSHA) .

When the containment is not being maintained, even though it has an engineer certification, AST inspectors should require repair or replacement and not approve a renewal of an ODCP until appropriate repairs are made. If the secondary containment structure cannot be repaired to meet the requirements, then it must be replaced.

8.1.2.1 Certification Requirements

The professional engineer or other person approved by DEQ needs to certify that the secondary containment meets all of the applicable requirements of not only EPA's SPCC Requirements, but also the USBC and OSHA.

9VAC25-91-130.B.2.e. stipulates this minimum wording for the Professional Engineer's certification...

Based on my evaluation, I hereby certify that each secondary containment structure for (insert the facility name and tank identification information) is in compliance with the applicable requirements of 40 CFR Part 112, the Uniform Statewide Building Code and its referenced model codes and standards, and 29 CFR 1910.106.

Note that the certification wording is specific and contains no qualifications about any site condition that would impact the performance of the secondary containment. The certification must be signed and sealed by the professional engineer or other person approved by DEQ. If the PE or other person approved by DEQ certifies the secondary containment with qualifications, such qualifications will be subject to review and approval by DEQ. If the certification contains qualifications that may impact the ability of the secondary containment to contain a discharge of oil, the deficiencies must be corrected and the secondary containment must be re-evaluated and recertified by a professional engineer.

PE certifications that certify federal SPCC plans are not typically accepted as a secondary containment certification. Federal SPCC requirements require evaluation of the secondary containment system as part of the overall facility plan, but do not typically evaluate structural integrity. Federal SPCC regulations require that the facility ownership or management attest to their commitment to provide the resources needed to implement the plan. The certifying engineer (PE) or other person approved by DEQ attests to the adequacy of the plan and its conformance with SPCC regulations. Although SPCC certifications do partially evaluate the secondary containment as part of the overall plan, the certification is not a substitute for the secondary containment certification required by the Virginia regulations. The required SPCC certification does not

specifically certify compliance with the Uniform Statewide Building Code or OSHA which is the core of the required certification under the Regulation.

Operators of an existing AST with a current engineering certification statement on November 1, 2015 (date of revised regulations), may maintain their existing engineering certification statement until their next required certification, or ten years, whichever is sooner. At such time, the certification statements must state compliance with the requirements of 40 CFR Part 112, the Uniform Statewide Building Code and its referenced model codes and standards, and 29 CFR 1910.106.

A Steel Tank Institute (STI) certified SP001 inspector may potentially qualify as an “other person approved by the Board” for secondary containment certification only if they are certifying the outer wall of a double-walled steel tank and the outer wall of the tank is providing the secondary containment. In order to fulfill the certification requirements, the certification must consider applicable SPCC, USBC and its referenced model codes and standards, and OSHA requirements.

8.1.2.2 Double Walled Tanks

Shop-built (Underwriters’ Laboratories tested and designated), double-walled tanks having inner and outer tank walls meet the definition of secondary containment under the DEQ regulation as well as the definition under 40 CFR Part 112 (1997), NFPA 30, USBC and OSHA 1910.106. EPA has provided for this interpretation in SPCC guidance since 1992 and subsequently revised the capacity upward to any size shop-built, double-walled tank as long as other concerns for overflow and transfer are properly addressed. The use of certain shop-built, double-walled ASTs serves as an “equivalent” preventive system for purposes of the general secondary containment requirements when they include the following elements:

- Containers/tanks are shop fabricated;
- The inner and outer tank walls are an Underwriters’ Laboratories (UL)-listed steel tank;
- The outer tank is constructed in accordance with nationally accepted industry standards (e.g., API, STI or the American Concrete Institute); and
- Equipped with an overflow alarm and an automatic flow restrictor or flow shut-off.

DEQ, like EPA, also accepts the shop-built, double-wall design as meeting the secondary containment requirements. Accordingly, VA DEQ will not require periodic evaluation and certification of the secondary containment structure every 10 years.

8.1.2.3 Compliance Review (Section VII of AST checklist – Appendix W)

Secondary containment certification statements for each tank need to be reviewed to ensure the certification statement is consistent with 9VAC25-91-130.B.2.e. In order to evaluate compliance with secondary containment requirements, the inspector should request to see the secondary containment certification for the facility. Upon presentation, the inspector should verify the following: (1) the certification is in accordance with 40 CFR112, Uniform Statewide Building Code, and 29 CFR1910.106, (2) the certification has been signed and sealed by a Professional Engineer or other person approved by DEQ and (3) the certification was made within the past ten years.

Existing certification statements prior to November 1, 2015 are acceptable until the next required certification, or ten years. At such time the PE Certification wording must be consistent with 9VAC25-91-130.B.2.e. If the certification cannot be produced by the facility, that item (d) should be identified as non-compliant.

8.1.3 Safe Fill and Shutdown Procedures

Overfilling is a common cause of oil spills from ASTs and is usually associated with human error. The purpose of requiring a tank gauge is to inform deliverers, persons monitoring deliveries, and emergency responders with an estimate of the amount of fuel in the tank. A high-level alarm is required to prevent tank overfills by providing an alarm when the tank is almost full.

The operator of an AST must have a defined written procedure in place for the filling, shutdown, and transfer to ensure that spills resulting from tank overfill and other product transfer operations do not occur.

All receipts of oil should be authorized by the operator or facility trained personnel who ensures the volume available in the tank is greater than the volume of oil to be transferred to the tank before the transfer operation commences. The intent of the requirement is to ensure that the facility is aware of a pending transfer.

The operator should ensure that the transfer operation is continually monitored, either by manual or automatic means, until complete. There are many variations of transfer operation, from manual operation of a hose nozzle from a truck to automated transfer controls for filling from a pipeline. The operator needs to ensure that all tank fill valves not in use are secured and that only the tank designated is receiving oil.

Although transfer procedures are unique to a facility, there are general procedures that should be addressed.

- Checking the fuel level of the receiving tank to determine how much product it can receive;
- Inspection of the pipe or hose line to check for visible leaks, cracks or damage in the line;
- Checking the valve position at the manifold and at the tank making sure valves that should be closed are closed and valves that should be open are open;
- Making sure an operator is monitoring the entire transfer; and
- Checking the tank levels at regular intervals.

All oil transfer areas where filling connections are made need to be equipped with a vehicle spill containment system such as a drain to an UST, oil/water separator or collection system that is capable of containing any spills or overfills. The containment system shall be designed to hold at least 110% of capacity of the largest anticipated receiving vehicle.

If installed, an automatic shutdown system utilized during transfer of oil should include the capability to direct the flow of oil to another tank capable of receiving the transferred oil or the capability to shut down the pumping or transfer system. This automatic shutdown system shall be tested prior to each receipt of oil and records of testing shall be maintained at the facility.

8.1.3.1 Gauges

All ASTs need to be equipped with a readily visible gauge that is calibrated annually. The intent of the requirement is to have a gauge at the tank to prevent overfilling or indicate a catastrophic release that may go unseen. The gauge also provides volumetric information to emergency responders. The gauge should be positioned so that the person conducting the daily walk-through inspection can easily see it. The gauge does not have to indicate exactly how many gallons are in the tank but must be able to let the observer see if there is a different level in the tank. If nothing is removed from the tank, the level should relatively be the same.

At a minimum, the facility shall measure the tank contents and compare that measurement to the gauge reading at least once per year to verify that the liquid level actually contained in the tank is equal to what the

gauge indicates is in the tank. The gauge calibration requirement ensures that the tank gauge is working and is not stuck. There are many different types of liquid level gauges used including site glasses, float type gauges, electronic gauges, and remotely mounted gauges. This verification is commonly done using a dip stick or tape and comparing the wetted surface to gauge markings. However, DEQ should remain flexible with what is needed to meet the annual gauge calibration requirement.

At a minimum, the gauge needs to be calibrated per the manufacturer's recommendation. If the manufacturer cannot be determined, the facility must develop a procedure that ensures accuracy of the gauge. Calibration need not be specifically done by a professional unless called for per the manufacturer recommendation; the gauge just needs to reflect the level of product or volume in the tank.

Liquid level gauges mounted remotely from the tank may be used to meet the tank gauge requirements as long as the gauge is "readily visible" by someone during product delivery. A gauge mounted inside a locked building where no one is present during afterhours deliveries would not be acceptable.

A gauge calibration record should be maintained for five years and include, at minimum, the calibration date, name of the person performing the calibration, what was done to calibrate the gauge and the result of the calibration.

The storage capacity, product stored and tank identification number should be clearly marked on the tank near the location of the gauge.

8.1.3.2 Compliance Review (Section XII of AST inspection Checklist – Appendix W)

The inspector should review the operating procedure to ensure that it provides procedures for safe fill, shutdown, and transfer. The inspector should verify that:

- A written safe fill/shut down procedure is established;
- The oil transfer procedure is monitored by either manual or automatic means;
- Transfer procedures are posted at loading rack.
- Oil receipts are being properly authorized by operator;
- Fill valves not in use are being properly secured;
- Spill containment system for areas where connections are made with vehicles is present;
- Spill containment system for vehicles is capable of holding 110% of largest anticipated vehicle;
- Automatic shutdown, if present, is capable of directing the flow of product to another tank;
- Automatic shutdown is capable of shutting down the pumping or transfer system;
- Gauges are present, readily visible, and operational on all tanks;
- Gauges are annually calibrated; and
- Tank markings are proximal to the gauge and are legible, and indicate:
 - tank ID;
 - product stored; and,
 - total capacity of the tank.

8.1.4 Pipe Testing

The pipe testing requirements are to determine the pipe condition as a preemptive practice to thwart pipe failure. All piping, valves and appurtenances at non-production facilities must be regularly inspected. Pipe is a

defined term in the Regulation. Materials designated "tube" or "tubing" in the specifications should be treated as pipe when intended for pressure service. At production facilities, all piping should be tested to the point (typically a valve) where the piping becomes part of the production process or production process equipment or to the point it joins another very small diameter piping that can't be pressurized to the same Maximum Allowable Working Pressure (MAWP). For instance, piping may come from the AST located outside of the building into a manufacturing facility. That piping may then tee off to different manufacturing equipment. The piping should be tested to the valve closest to the tee. At typical terminals and bulk plants, piping from the first valve to ending valve at the loading rack will require testing.

8.1.4.1 Pressure testing

This is an out-of-service test where a section of pipe is isolated using valves or other blocking devices and pressurized using either a hydrostatic test (typically water) at 150% maximum allowable working pressure (MAWP) or an inert gas test at 110% MAWP. For the purposes of this section, **MAWP is the anticipated operating pressure, not the theoretical burst pressure.** The theory on this type of test is to stress the piping beyond its normal operating pressures to see if the pipe becomes compromised. If the condition of the pipe maintains under the exaggerated load, then it passes the test and should not need testing for 5 years. There is no specific hydrostatic or pneumatic pipe test method requirement, but API RP 1110 (Recommended Practice for the Pressure Testing of Steel Pipelines for the Transportation of Gas, Petroleum Gas, Hazardous Liquids, Highly Volatile Liquids or Carbon Dioxide) is industry guidance that can be used as a standard for contractors that opt to use the hydrostatic method. It should be recognized that certain piping cannot be pressure tested due to the type of piping (i.e. copper) or design (pipe on smaller tanks), accessibility, etc., therefore alternate methods of assessment, such as API 570, would need to be employed.

8.1.4.2 API 570

An acceptable alternate method of pipe integrity testing is a test conducted by an American Petroleum Institute (API) certified piping inspector in conformity with the API 570 Piping Inspection Code. API 570 is an in-service condition-monitoring inspection to determine the integrity of piping. The inspection provides an assessment of any changes in the condition of piping that could possibly compromise continued safe operation. API 570 does not typically involve out of service pressure testing, but instead relies upon ultrasonic testing and other types of in-service inspection methods. API 570 inspections are conducted by certified inspectors. API 570 also stipulates that owners respond to any inspection results that require corrective actions to assure the continued safe operation of piping.

API 570 does allow risk-based inspection which results in the interval between inspections being tied to evaluating potential damage mechanisms, current equipment condition and the effectiveness of past inspections. Virginia's Regulation requires piping to be tested every 5 years regardless of the interval determined by the API 570 inspector. Records for an API 570 inspection must indicate the inspection method(s) used, classification of piping based on the consequence of failure as defined in API 570, identification of the individual piping systems inspected, recommendations for corrective measures and the piping must be certified by a certified API 570 inspector.

8.1.4.3 Other methods

DEQ may also consider on a case-by-case basis requests for approval of other equivalent methods or measures which conform to industry recommended practices, standards and codes. Prior to commencement of the test, the facility should provide a written request with documentation of its preferred test to the department for consideration. The request should detail the equivalency with the methods prescribed in the Regulation. The operator should also be made aware that the Federal SPCC and local building codes and international fire codes have pipe testing requirements as well.

8.1.4.4 Recordkeeping

All records related to required piping tests must be kept for a minimum of five years.

8.1.4.5 Compliance Review (Section IV of AST Inspection Checklist – Appendix W)

Most AST facilities being inspected have already determined which sections of pipe require testing through previous testing and communication with DEQ. It must be recognized that there are many variations of piping configurations. There may be many connected aboveground pipes that are short runs of aboveground pipe (<10 feet) and aboveground pipe connections and valves to ASTs that cannot be readily tested because an attempt to test the line may destroy the integrity of the line.

Determining compliance with these requirements consists primarily of reviewing records for test dates and recommendations to determine if pipe testing/assessment have occurred in the past five years. The date and type of test pressure (hydrostatic or inert gas), API 570 or “Other” should be noted on the inspection checklist. The credentials of the API inspector, such as a registration number, should also be noted on the inspection checklist. If piping repair or replacement recommendations were made in the inspection report, resolution of the recommendations should be evaluated.

If the documentation is incomplete or indicates that the piping inspection was not performed correctly, staff should send a letter or other informal compliance mechanism to the owner or operator outlining the deficiencies.

8.1.5 Visual Daily and Weekly Inspections

ASTs and associated equipment and structures must routinely be visually inspected for signs of deterioration, leakage, or accumulations of oil inside containment areas. This type of routine inspection can be performed by facility personnel that have been trained to perform the inspection. The Regulation stipulates both a daily and weekly inspection must be conducted. The facility must have written records of the inspection and keep them on file for at least five years. The VA AST Program requires that a daily inspection be conducted for each day the facility is operating, but no less frequently than every 14 days regardless of operational status (e.g. an unmanned electric transformer station). Facilities that are not staffed daily may conduct the daily and weekly inspections no less than every 14 days.

8.1.5.1 Daily Visual Inspection

The **daily visual** inspection is intended to be a routine walk-around to identify any obvious signs of leakage or potential hazards. The daily inspection needs to be documented in the facility records. Although not specifically required, documentation is best accomplished via a signed facility inspection checklist. The visual inspection needs to include the following components:

- A complete walk-through of the facility property in the areas where the regulated ASTs are present to ensure that no hazardous conditions exist;
- An inspection of ground surface in the vicinity of the AST(s) for signs of leakage, spillage or stained or discolored soils;
- A check of the berm or dike area for excessive accumulation of water and to ensure the dike or berm manual drain valves are secured;
- A visual inspection of the exterior tank shell to look for signs of leakage or damage; and,
- An evaluation of the condition of the aboveground storage tank and appurtenances.

8.1.5.2 Weekly inspection

The **weekly** inspection is intended to be a more prescriptive inspection where equipment and oil related appurtenances are observed. The weekly inspection requires formal documentation in the form of a checklist which is signed and dated by the facility person conducting the inspection. Additionally, the checklist is to be made part of the facility record and made available upon DEQ request. A weekly inspection checklist needs to be developed by the facility operator and initiated within 90 days after the installation of any new ASTs.

The checklist, at a minimum, must address inspection of the following items:

- Containment dike or berm in satisfactory condition (is operating as designed).
- Containment area free of excess standing water or oil.
- Gate valves used for emptying containment areas are secured.
- Containment area/base of tank free of high grass, weeds and debris.
- Tank shell surface, including any peeling areas, welds, rivets/bolts, seams and foundation, visually inspected for areas of rust and other deterioration.
- Ground surface around tanks, containment structures, and transfer areas checked for signs of leakage.
- Leak detection equipment in satisfactory condition.
- Separator or drainage tank in satisfactory condition.
- Tank water bottom draw offs not in use are secured.
- Tank fill valves not in use are secured.
- Valves inspected for signs of leakage or deterioration.
- Inlet and outlet piping and flanges inspected for leakage.
- All tank gauges have been inspected and are operational.

The operator should promptly remedy any unsatisfactory facility and equipment conditions observed in the daily and weekly inspections. The operator shall make repairs, alterations and retrofits in accordance with American Petroleum Institute (API) Standard 653, Fourth Edition (April 2009) with Addendum 1 (August 2010) and Addendum 2 (January 2012); Steel Tank Institute (STI) standard STI-SP001, Fifth Edition (September 2011); industry standards; or methods approved by DEQ.

8.1.6 Compliance Review (Sections VIII & IX of AST Inspection Checklist – Appendix W)

The VA AST Program does not require DEQ approval of the checklist but requires only that it includes the items set forth under the Daily and Weekly inspection items. The inspector should confirm that the daily and weekly inspections are being performed, are documented in the facility record and addresses the applicable items by:

- Scanning through the last twelve months of inspection records to verify that the daily and weekly inspections have been conducted in accordance with the procedures laid out in the the Regulation;
- Choosing three consecutive months of daily inspection records to be reviewed in more detail;
- Recording each AST in the facility inspection records to the corresponding Tank # noted on the registration form and AST Checklist; and

- Confirming that person(s) conducting the inspections have been appropriately trained.

8.1.7 Training

To ensure proper training of individuals conducting the daily and weekly visual inspections, the operator of a facility needs to properly train the personnel in accordance with a developed training plan as detailed below. Any individual conducting the inspection shall receive the training prior to conducting any inspection. The training plan needs to be maintained and updated to reflect the specific conditions at the facility.

8.1.7.1 Plan Content

The training program should be specific to the facility and at a minimum address:

- Basic information regarding:
 - Occupational safety;
 - Hazard recognition;
 - Personnel protection; and,
 - Facility operations to include response and contaminant training as set forth in ODCP.
- The procedures to be followed in conducting the daily visual and weekly facility inspections, including completion of checklists;
- The procedures to be followed upon recognition of a hazard or the potential for a hazard; and
- The procedure for evaluating the condition of the aboveground storage tank and appurtenances.

8.1.7.2 Personnel Training

All existing facilities are required to have an established training program. The training may be conducted by the operator or by a third party. The operator of a new facility must establish the training program within six months of the AST being brought into use and must train personnel within 12 months of the facility being brought into service. Only personnel who have completed the training program can perform the inspection. At a minimum, a facility's inspection personnel must be retrained every three years or upon any significant changes to the contents of the initial training program. Documentation of receipt of training must be maintained in facility records for at least five years.

8.1.7.3 Compliance Review (Sections X & XI of AST Inspection Checklist – Appendix W)

The documentation of receipt of training needs to be maintained in the facility records. The inspector should evaluate the training plan to confirm that:

- There is a written training plan.
- The plan reflects current conditions at the site (e.g. regulated tanks, contact information and procedures to be followed).
- The training plan provides training on both the daily and weekly inspection criteria.

The inspector should also review the facility record to confirm that:

- Documentation exists that training was provided to new inspectors (as applicable).
- Documentation exists that training was provided for designated personnel within the past three years.
- For new facilities, that an inspection training program was developed within six months and personnel were trained within 12 months of service date.

8.1.8 Leak Detection

The purpose of leak detection at AST facilities is to identify a discharge from a tank and associated transfer piping to soil or groundwater in the shortest feasible time. Operators must be able to demonstrate for the ODCP review that the leak-detection system installed at the facility is capable of detecting a leak from an AST and associated transfer piping in the shortest feasible time for that particular leak-detection system.

8.1.8.1 Leak Detection Options

Leak detection options for ASTs and associated transfer piping are limited to methods that can detect leaks external to the tank. Inventory control is not considered a leak detection method but a separate pollution prevention requirement in addition to leak detection. Detailed discussion of each of the approved options is discussed in detail elsewhere in this manual (Section 10) but are listed below for completeness.

- Groundwater monitoring
- Vapor monitoring
- Interstitial monitoring with Release Prevention Barriers
- Visual
- Statistical Inventory Reconciliation (SIR)

8.1.8.2 Compliance Review (Section V & VI of AST Inspection Checklist – Appendix W)

The leak detection system is typically specified and approved as part of the ODCP in addition to leak detection under pollution prevention. The inspector should confirm that the leak detection monitoring is operational and is being performed, the methodology is appropriate for site characteristics (depth to groundwater, porous soils, elevated tank/piping), and is documented in the facility record.

The procedures for review of leak detection information are as follows:

- Review through the last twelve months of leak detection records to verify that the leak detection has been conducted;
- Choose three consecutive months of leak detection records to be reviewed in more detail;
- Each AST must be recorded in the facility records and correspond to the Tank # noted on the registration form and AST checklist; and
- If discrepancies are noted in the review of these three months of records, a more extensive review may be necessary.

Each AST should have at least one of the approved methods of leak detection monitoring used for early detection of a discharge in the shortest feasible time.

8.1.9 Formal Inspections (one million gallons or greater facilities)

8.1.9.1 Background

When the Regulation was first developed in 1992, it established the baseline standard for the timing of the initial formal internal and external inspections of the ASTs. For facilities with aggregate aboveground storage or handling capacities of **one million gallons or greater** of oil, all existing ASTs should have completed an initial inspection on or before June 30, 1998. Exempted facilities not engaged in the resale of oil should have completed the initial formal inspections on or before June 24, 2003. For these facilities, existing ASTs with less than 12,000 gallon storage capacity were not required to have a formal inspection unless the tank's integrity was questionable.

The Regulation requires that all newly installed ASTs have an initial formal external inspection within five years after the date of installation and internal inspection within ten years. Inspections need to be conducted in accordance with the provisions of American Petroleum Institute (API) Standard 653, Fourth Edition (April 2009), with Addendum 1 (August 2010) and Addendum 2 (January 2012); Steel Tank Institute (STI) standard STI-SP001, Fifth Edition (September 2011); or procedure approved by DEQ. If construction practices allow external access to the tank bottom, a formal external inspection utilizing accepted methods of nondestructive testing or procedure approved by DEQ may be allowed in lieu of the internal inspection.

All formal inspections, testing, and certifications shall be conducted by a person certified to conduct the inspection or testing in accordance with the applicable provisions of API Standard 653, STI-SP001, or a procedure approved by DEQ. Proof of this certification shall be maintained in the facility records. The results of all tests and inspections shall be maintained at the facility or other approved location for the life of the tank, but for no less than five years.

The operator shall promptly remedy unsatisfactory facility and equipment conditions observed in the inspection. The operator shall make repairs, alterations, and retrofits in accordance with the findings of the API Standard 653 inspections, industry standards, and methods approved by DEQ and proof kept for no less than 5 years.

8.1.9.2 Compliance Evaluation (Appendix W)

Any tank installed after June 1998 is required to have the formal external inspection within five years after the date of installation and internal within 10 years). The inspector needs to:

- Evaluate if there are new tanks since the last inspection and determine the date of the required formal inspection;
- Review the API 653 inspection report or other approved method to verify that each of the applicable AST inspections were conducted by a person certified inspector; and
- Note on the checklist if any deficiencies were identified during the external or internal inspection, and if any required follow up actions in response to inspection were made.

8.1.10 Formal AST Reinspection (one million gallon or greater facilities)

Following the initial formal Inspection, each AST at the facility with a storage capacity above 12,000 gallons needs to be periodically re-inspected by a certified inspector.

8.1.10.1 External Inspections

Each AST needs to have an external inspection, in accordance with API 653, STI-SP001, or other approved procedure **every five years** by a certified inspector to assess the condition of the AST and determine its suitability for continued service. The tank can remain in service if found suitable externally because entry into the tank is not required. The external inspection must consist of a visual inspection of the tank's exterior surfaces for evidence of:

- leaks;
- shell distortions;
- signs of settlement;
- corrosion; and
- unacceptable condition of the foundation, paint coatings, insulation systems, and appurtenances.

8.1.10.2 Internal Inspections

An AST with a storage capacity of less than 12,000 gallons does not require a formal internal re-inspection unless the tank integrity is in question.

ASTs with a storage capacity greater than 12,000 gallons, need to undergo an internal re-inspection in accordance with the provisions of API Standard 653, STI-SP001 (or other approved method) **every 10 years** after the initial formal internal inspection. The main purpose of the internal inspection is to:

- Ensure that the bottom is not severely corroded and/or leaking;
- Gather the data necessary for the minimum bottom and shell thickness assessments;
- Establish the corrosion rate and integrity of the tank bottom/side walls; and
- Identify and evaluate bottom settlement.

8.1.10.3 Reports

For both external and internal inspections, the certified inspector should prepare a written report. This report should address:

- The scope of inspection;
- List of components inspected and conditions found;
- Inspection methods and tests used (visual, Magnetic Flux Leakage (MFL), Ultrasonic Testing (UT) , etc.) and results of each inspection method or test;
- Corrosion rates/observations of the bottom and shell;
- Settlement survey measurements and analysis (if performed);
- Certification of suitability for continued service; or
- Inspector recommendations for repairs and monitoring necessary to restore the integrity of the tank and/or maintain integrity until the next inspection.

Tank owners and operators are responsible for reviewing the inspection findings and recommendations, establishing a repair scope if needed, and determining the appropriate timing for repairs, monitoring, and/or maintenance activities. The inspection report must be maintained by the owner/operator for the life of the tank. Local jurisdictions (building/fire officials) may have additional reporting and record keeping requirements for tank inspections.

8.1.10.4 10 year re-inspection interval

Some AST facilities with one million gallons or more storage capacity, have requested extensions or alternatives to the 10 year internal tank inspections. API Standard 653 clearly allows for a calculated re-inspection interval based on a calculated corrosion rate or a Risk Based Inspection (RBI) procedure that takes into account tank design, foundation, operational and inspection history. Although the Regulation specifies the use of API Standard 653, STI SP001, or other procedure accepted by DEQ, the Regulation requires a formal external re-inspection every five years and a formal internal re-inspection **every 10 years** regardless of the inspection frequency recommendation from the industry professional.

Note: Ten (10) year internal inspections are required by the Regulation and must be met on that 10 year mandated schedule for compliance even though recent API 653 editions allow for two, five, and 10+ year (20-

30 year) extensions between internal inspection intervals based on tank enhancements such as RPBs and corrosion protections. Comprehensive tank in-service assessments that meet all the criteria of an internal API 653 formal inspection may be allowed to utilize robotics on a case by case basis instead of an out of service internal inspection. Manned entry API 653 inspections will need to resume for the next internal inspection.

8.1.10.5 Compliance Evaluation (Section XIII of AST inspection Checklist – Appendix W)

Both internal and external inspection reports should be part of the facility record and kept for the life of the tank. The inspector should determine:

- If API 653 or SP001 internal/ external inspections are occurring;
- The date of the last external inspection and whether the 5 year inspection interval is maintained;
- The date of the last internal inspection and whether the 10 year inspection interval is maintained;
- If the certification of the suitability for continued service by the inspector is adequate or if there are recommendations for repairs and monitoring necessary to maintain and/or restore tank integrity;
- If the facility operator implemented the recommendations, if any.

8.1.11 Safe Fill and Shutdown - High level alarm (one million gallon or greater facilities)

If **unattended** during transfer operations (i.e. bottom loading to and from a tank truck), the AST must be equipped with a high level alarm or other appropriate mechanism approved by DEQ that will immediately alert the operator to prevent an overfill event. Pipeline transfers to ASTs typically are attended in the beginning and the end of the transfer but are unattended in between. Procedures vary amongst terminals. Unattended means any type of operation that is not having the operator manually transferring product. Activation of the high level alarm or other appropriate mechanism must initiate an immediate and controlled emergency shutdown of the transfer, either by manual or automatic means.

Each operator must include this emergency shutdown procedure in the facility records and must ensure that all facility personnel involved in the transfer operation are trained in this procedure. The alarm must consist of a visual and audible device capable of alerting the operator, both by sight and hearing, to prevent an overfill situation. If the operator is in a control station, this alarm must activate a warning light and audible signal in that station. In addition, this system must alarm on failure, malfunction, or power loss. This high level alarm shall be tested prior to each receipt of oil. Records of testing must be maintained at the facility.

8.1.12 Compliance Review (Sections XIV & XV of AST Inspection Checklist – Appendix W)

The emergency shutdown procedure must be a developed plan that is integrated into facility records and includes training of facility personnel involved in the transfer operation. The compliance review should verify that the written procedure is available and that the appropriate personnel have received the required training.

If the transfer operation is unattended, a high level alarm is required. The compliance review should determine:

- If the alarm has both an audible and visual indicator;
- If there is a mechanism (manual or automatic) in place to activate an emergency shutdown of the transfer operation; and
- If the high level alarm is tested prior to each receipt of oil with a record of each test maintained at the facility. The compliance review should verify maintenance of these records.

If the transfer is monitored via a control station, the compliance review should determine:

- If the alarm systems (audio, visual) is functional at that location; and
- If the failsafe shutdown mechanism is “on” in case of failure, power loss, or malfunction.

The compliance review of the Emergency Shutdown procedure should include:

- A review of the emergency shutdown procedures; and
- A review of the files to verify the procedures are in place.

8.1.13 Cathodic Protection (CP) of AST Piping

The Regulation requires all buried AST piping located at facilities with an aggregate capacity greater than one million gallons meet the corrosion protection requirements imposed by the Uniform Statewide Building Code. This includes piping that passes through the wall of the containment berm or dike or under road crossings.

There are multiple ways to provide corrosion protection to buried metal piping. Buried metallic piping that passes through a berm or dike may be isolated from the soil by a culvert or chaseway and therefore does not require corrosion protection. Other buried metallic piping is usually cathodically protected. The two general types of cathodic protection that are installed on buried piping to meet corrosion protection requirements are galvanic and impressed current systems. Stated in the simplest terms, both of these types of cathodic protection systems attempt to reverse the flow of electric current away from the metal that is intended to be protected from corrosion. Both types of cathodic protection systems replace the flow of electrons (current) from the protected structure with a DC current. Galvanic systems produce small amounts of current to protect small structures or well coated large structures. Impressed current systems use larger currents to protect several structures or uncoated large structures such as painted steel tanks. Typically large AST facilities will have one impressed current system that protects all tanks and piping at the facility. These systems can be very complex since stray current from neighboring facilities and the pipeline may interfere. Corrosion experts should always install and maintain these systems.

Cathodic protection needs to be installed and maintained in accordance with:

- American Petroleum Institute Standard (API) 1632, Third Edition (reaffirmed 2010);
- Uniform Statewide Building Code and its referenced model codes and standards;
- National Association of Corrosion Engineers (NACE) RP-0285-85 & RP-01-69;
- API RP651; or
- A procedure approved by DEQ.

8.1.14 Compliance Review (Section XVII of AST Checklist – Appendix W)

Typically, the cathodic protection (CP) system is designed by individuals who have obtained NACE Certification(s) and has relevant work experience in the design of CP systems for underground metallic structures. The inspector should verify that a buried piping CP system is operational.

In order to complete section XVII of the inspection checklist, the inspector should:

- Determine if the CP system is operational by reviewing a cathodic protection test report of the buried piping associated with each AST and ensuring all buried piping passed the CP test;
- The report must indicate that all buried piping that is not isolated from the soil has passed cathodic protection criteria; and
- Ensure that any piping that passes through the dike wall or berm is either isolated from the soil or cathodically protected.

9 Performance Standards

The requirements of this portion of the guidance (Section 140 of the Regulation) apply **only to individual ASTs with a storage capacity of 25,000 gallons or greater and to any ASTs >660 gallons at a facility with an aggregate capacity of 25,000 gallons or more.**

9.1 Newly Built AST

All ASTs must be built and strength tested in accordance with the design standards adopted by Underwriters Laboratories (UL), American Petroleum Institute (API), the Steel Tank Institute (STI) or other standard approved by DEQ before placed in service. This includes tanks newly installed or relocated on-site, regardless of the material(s) of construction. The applicable standard(s) is dependent on whether the tank was constructed in the field or was shop built.

New field-erected storage tanks must be tested in accordance with the standard used for their construction. Typically, the American Petroleum Institute (API) Standard 650, “Welded Steel Tanks for Oil Storage” and API 620, “Design and Construction of Large, Welded, Low-Pressure Storage Tanks”, are used. Other UL, API and STI codes or standards may be applicable dependent on construction technique.

Shop-built storage tanks typically undergo testing by the manufacturer at the site of fabrication based on the standard to which the tank was manufactured. The Underwriters Laboratory (UL) Standard 142, “Steel Aboveground Tanks for Flammable and Combustible Liquids” is an often cited standard. Other UL, API and STI codes or standards may be applicable dependent on construction technique.

Any newly installed AST must also be constructed and installed consistent with the applicable standards and requirements of the Uniform Statewide Building Code and its referenced model codes and standards or other standards approved by DEQ. The applicable construction standard(s), approval and permits should be discussed with the local building official(s) before construction begins.

9.2 Corrosion Protection for New Installations

Any ASTs that have the tank bottom in direct contact with the soil or are being brought back into use (after closure pursuant to 9VAC25-91-110) must have a determination made by the corrosion professional as to the type and degree of corrosion protection needed to ensure integrity. If the assessment indicates the need for

corrosion protection for the new installation, such as the addition of cathodic protection or a double bottom, it must be provided.

9.3 Release Prevention Barriers (RPB)

ASTs installed after June 30, 1993 must have an RPB installed either under or in the bottom of the tank that is capable of preventing a release and containing or channeling the oil for leak detection. There are many types of equipment that qualifies as an RPB, however, at a minimum, the RPB must meet the following requirements:

- Is a non-earthen barrier that is impermeable;
- Is composed of material compatible with oil stored in the AST;
- Meets proper engineering strength and elasticity standards;
- Functions to prevent the discharge of stored oil; and
- Contains and channels any discharged oil in a manner that provides for early leak detection via interstitial monitoring.

Examples of RPBs:

- Double-bottom AST in which the tank's second, steel bottom (i.e., the one closest to the foundation or ground surface) acts as the RPB.
- Double-wall AST where the second wall that encapsulates the primary tank bottom acts as the RPB.
- A double-bottom AST with a reinforced flexible membrane liner that meets the criteria listed above for an RPB. The liner is typically placed on top of the existing tank bottom. Then a 4 to 6-in. sand layer is placed on top of the liner. The primary (new) tank bottom is then installed on top of the sand layer.
- An impermeable membrane liner similar to what is used in landfill applications is placed under all tanks and lines the tank pad.
- Coated concrete qualifies as an RPB if the coating meets criteria outlined above for RPBs.

Note: Concrete alone is not considered impervious and must be coated.

9.4 Existing ASTs that are retrofitted/relocated/brought back to use

For existing ASTs that are being retrofitted, relocated, or otherwise brought back to use, the operator must submit a schedule of the work to be performed to the appropriate DEQ regional office at least 6 months in advance of anticipated completion date. The schedule should detail what activities will be performed to bring the AST in compliance with the new-built construction standards. All existing ASTs that are being retrofitted for use must:

- Be built and strength tested in accordance with the design standards adopted by Underwriters Laboratories, American Petroleum Institute or other standard approved by DEQ before placed in service;
- Have a corrosion protection assessment performed, if the tank bottom is in contact with the soil;
- Have a RPB installed either under or in the bottom of the tank; and
- Comply with the pollution prevention requirements (9VAC25-91-130) as applicable.

A tank built to an underground storage tank standard does not meet the AST performance standards and thus, cannot be used as an AST.

9.5 ASTs located in City of Fairfax

These requirements are to ensure that existing ASTs at facilities in the City of Fairfax are brought into compliance with the current design requirements no later than July 1, 2021. The requirements of this section apply only to ASTs at facilities that:

- Are located in the City of Fairfax;
- Are located at AST facilities with storage capacity greater than one million gallons; and
- Were in existence prior to January 29, 1992.

Where not already in place, the Regulation requires that all ASTs at facilities above one million gallons contain an RPB either under or in the bottom of the tank, and be strength tested when the AST is altered to meet the RPB requirements. Any AST altered to come into compliance with these requirements must meet the applicable standards of the Uniform Statewide Building Code or other standard approved by DEQ. Approvals and applicable permits must be obtained from the local building official before altering the ASTs.

Elevated ASTs that are installed in containment dikes meeting the requirements of an RPB or within earthen containment dikes subjected to daily and weekly inspections are considered to be in compliance with the requirements.

9.6 Compliance Review (Section XVIII of the AST Inspection Checklist)

When the inspector encounters a newly installed or retrofitted AST, they should complete section XVIII of the 7542-AST inspection checklist. The inspector should:

- Review records to determine date of installation, retrofit, or brought back into use;
- Determine if a building permit was obtained for upgrades/repairs;
- Determine if AST was built to the applicable standards;
- Determine if AST was strength tested before use;
- Determine if a RPB was installed; and
- Determine if a corrosion evaluation was performed.

9.7 Recordkeeping

Each operator of a facility subject to the Regulation must maintain the following records:

- All records relating to all required measurements and inventory and reconciliation of oil at the facility;
- All records relating to required tank/pipe testing;
- All records relating to spill events and other discharges of oil from the facility;

- All supporting documentation for developed contingency plans;
- All records for implementation and monitoring of leak detection and applicable provisions of 9VAC25-91-170.A.18. of Part IV [9VAC25-91-170, Oil Discharge Contingency Plan (ODCP) Requirements];
- All records relating to training of individuals;
- All records relating to facility and tank inspections; and
- Records required to be kept for at least five years.

9.8 Variances

9.8.1 General process/criteria for granting a variance

The regulation in 9VAC25-91-130 allows the Department to grant a variance on a case-by-case basis and automatically allows them as listed by regulation. The regulation allows for deviations from specific requirements as long as the alternative measures provide equivalent environmental protection. The environmental equivalence provision is the key mechanism. This flexibility enables owners and operators of facilities to achieve environmental protection in a manner that fits the facility's unique circumstances.

The Department cannot grant any petition for a variance related to:

- Definitions,
- Registration,
- Classification of aboveground storage tanks, or
- Oil discharge contingency plans.

The facility operator must submit a written variance request to the Department for the specific variance. The alternative design, practice or method proposed in the variance request must be no less stringent than other applicable Federal or State regulations. For example, the proposed variance may not be in conflict with the Uniform Statewide Building Code or the Federal SPCC requirements.

The applicant must demonstrate that the alternate design or procedure will result in a facility that is equally capable of preventing pollution from new and existing ASTs. If the variance would extend a deadline, the applicant needs to demonstrate that a good faith effort to comply with the deadline was made.

9.8.2 Variances by Regulation

There are eleven variances by regulation identified in Section 160.D. of the Regulation, mostly pertaining to inventory control. The concept for these variances is that there are sufficient engineering or design safeguards in place to ensure that if there was a leak from the AST or associated piping it will be visible and or the risk to the environment is minimal due to fuel type and system design. The eleven variances are detailed in Section 8.1 of this Volume.

9.8.3 Previous Variance Petitions

The AST Compliance Coordinator maintains a spreadsheet and files of all variance decisions made by DEQ. The spreadsheet provides historical information about the specific nature of a requested variance as well as its outcome.

9.8.4 **Administrative Procedures**

All variance petitions by the owner or a duly authorized representative submitted to DEQ must include:

- The owner's or duly authorized representative's name and address;
- A citation of the regulatory requirement for which a variance is requested;
- An explanation of the need or desire for the proposed action, including the reason the existing requirement is not achievable, or is impractical compared to the alternative being proposed;
- An explanation of the impact to applicable local codes and ordinances;
- A description of the proposed action;
- The duration of the variance, if applicable;
- The potential impact of the variance on human health or the environment and a justification of the proposed action's ability to provide equivalent protection of human health and the environment as would compliance with the regulatory requirements;
- Enforcement action against or pending against the petitioner;
- Other information believed by the applicant to be pertinent; and
- The following statements signed by the owner or a duly authorized representative:

"I certify that I have personally examined and am familiar with the information submitted in this petition and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. The petition, if granted, will not be in violation of any local codes or ordinances or pose an unreasonable risk to human health or the environment. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

9.8.5 **Mailing Address**

All variance petitions and correspondence shall be submitted to:

Department of Environmental Quality
Office of Spill Response and Remediation
Attention: AST Compliance Coordinator
P.O. Box 1105
Richmond, VA 23218

9.8.6 **Petition Processing**

After receiving a petition that includes the information required, a Variance Team (Team) will be formed to review the variance request. The Team will consist of three members with the possibility of additional temporary members in certain cases. The members will be the AST Compliance Coordinator, the regional AST compliance staff most familiar with the facility, and one other (another regional office not yet represented) regional compliance staff chosen by the Compliance Coordinator.

Generally, variance requests are made in one of two ways: (1) the request is filed with the regional inspector or (2) the request is filed with the AST Compliance Coordinator. If the request is made to the regional inspector, the inspector should forward the original variance request to the Compliance Coordinator

immediately. Once the Compliance Coordinator receives the variance request (either from the facility or regional staff), he/she will scan the documents, then select and notify the Team members of the variance request. The Compliance Coordinator will schedule a conference call and make the variance document available for review. During the conference call, the Team will discuss the variance request and determine whether:

1. A variance is necessary (if a viable alternative exists in the regulation);
2. Additional information is needed to process the request (completeness check);
3. Environmental equivalence has been demonstrated;
4. The variance should be granted;
5. The variance should be allowed with modifications; or
6. The variance should be denied.

The regional AST inspector acts as the liaison between the Team and the facility operator for all matters other than communicating the final variance approval or denial. For example, if the Team determines that additional information is needed, the Team will notify the regional inspector who will communicate this request to the facility operator and forward the operator's response to the Team. Upon receipt of any additional information requested, the Team will confer via conference call as necessary to make a decision on the variance. In rendering the Decision the Team may:

- Deny the Petition;
- Grant the Petition;
- Grant a modified or partial variance that specifies additional or modified requirements (schedule, periodic reevaluation, unique circumstance or condition of issuance, etc.).

Once the Team has come to a decision, the decision must be communicated to the facility operator. If the Team approves or denies the variance, the Compliance Coordinator will draft a briefing memo explaining the basis for the decision along with a letter for the OSRR Director's signature communicating the decision. At that point, the Team has no further responsibilities with regards to the variance.

A Statewide variance request is a request that, if granted, will affect a facility's operations in more than one location across the state. A statewide variance request will proceed in a similar fashion to facility-specific variances. Upon receipt of a variance request for statewide applicability, the Compliance Coordinator will copy the AST inspector for each region in which the facility maintains operations. For statewide variances, the Compliance Coordinator will act as the liaison with the entity requesting the variance. The AST inspectors will also receive a copy of the Variance Team's decision for that variance.

Variance decisions must be copied to the chief administrative officer of the locality where the AST facility is located.

10 Oil Discharge Contingency Plan

State Water Control Law Section §62.1-44.34:15 establish requirements for Oil Discharge Contingency Plans (ODCP). The provisions of Part IV of 9VAC25-91-170 apply to: (i) an individual AST located within the Commonwealth of Virginia with an aboveground storage capacity of 25,000 gallons or greater of oil, and (ii) all

facilities in the Commonwealth of Virginia with an aggregate aboveground storage capacity of 25,000 gallons or greater of oil. Tanks that are excluded by regulation are not included when calculating the aggregate aboveground storage capacity.

Most correspondence to the DEQ related to the requirements of this chapter must be sent to the DEQ Regional Office in which the facility is located. However, correspondence that contains fees must be sent to the Office of Financial Management at DEQ's Central Office, and checks must be payable to the Treasurer of Virginia.

10.1 Applicability

10.1.1 Determining Facility Capacity

The aggregate facility storage capacity does not include ASTs with 660 gallons or less storage capacity. The regulatory exclusion list from 9VAC25-91-30.A. can affect the determination of facility capacity and ODCP applicability because the storage capacity of excluded items from the Regulation is not included when calculating a facility's aggregate storage capacity.

At facilities where both ASTs and USTs are present, the aggregate facility storage capacity does not include UST storage capacity. When USTs are connected to ASTs, the AST capacity only includes the piping associated with the AST between the tank and the first valve inside and closest to the secondary containment wall prior to product flow to a UST system plus the capacity of the AST. The capacities of transformers, hydraulic presses, heat exchangers or other equipment where oil is contained for operational purposes are not included in the facility capacity. The oil capacity of machinery and equipment where oil is contained only for operational purposes is not considered storage, because such machinery and equipment is excluded pursuant to 9VAC25-91-30.A.14. However, oil reservoirs (e.g., day tanks > 660 gallons) which are not part of the equipment and separate tanks used to contain oil for operational purposes are included in the capacity.

Asphalt and asphalt compounds: Asphalt and asphalt compounds that are not liquid at standard conditions of temperature and pressure (60°F at 14.7 pounds per square inch absolute) are excluded from any requirement to install groundwater monitoring wells or groundwater protection devices or to conduct groundwater characterization studies under Part IV (9VAC25-91-170, Oil Discharge Contingency Plan (ODCP) Requirements) and Part V (9VAC25-91-180 et seq., Groundwater Characterization Study (GCS) and GCS Well Monitoring Requirements) of this chapter. All other ODCP requirements apply. Liquid asphalt means any material that has fluidity greater than that of 300 penetration asphalt when tested in accordance with ASTM D 5, "Test for Penetration for Bituminous Materials".

Asphalt cutback contains diesel fuel and therefore tanks containing cutback are regulated if over 660 gallons and should be included in the calculation of the aggregate capacity. Since asphalt slurry contains mostly water and solids (not oil), tanks containing asphalt slurry are not regulated and should not be included in the aggregate capacity calculation for ODCP.

Note: Appendices A through Q relate to ODCP applications, reporting, and compliance.

10.1.2 Compliance Dates (9VAC25-91-40)

Virginia Regulation 9VAC25-91-40 contains the compliance dates for ODCP requirements. Operators of facilities subject to 9VAC25-91-170 that were brought into use after January 29, 1992 need to submit a

complete ODCP application meeting all applicable requirements no later than 90 days prior to commencement of operations.

- The operator must receive approval of the ODCP by DEQ prior to commencement of facility operations.
- Ninety days prior to the expiration of approval of the ODCP, the facility must submit an updated plan or certification of renewal of an existing plan according to 9VAC25-91-170.F.

An operator having obtained approval of the ODCP can operate, maintain, monitor, and keep records pertaining to ODCP Requirements (9VAC25-91-170.A.18.) and Pollution Prevention Requirements (9VAC25-91-130 *et seq.*) Operators need to review, update if necessary, and resubmit the ODCP for approval every 60 months from the date of approval unless significant changes occur sooner.

10.2 ODCP Expiration Date

The effective date of an ODCP establishes the date from which the 60 months ODCP renewal deadline is calculated. The expiration date of the ODCP is noted in the formal approval letter to the operator (Appendix F).

10.3 Administrative Fees

Virginia Regulation 9VAC25-91-60 sets out the fees for ODCP reviews. For a facility with an aggregate aboveground maximum storage or handling capacity from 25,000 gallons up to and including 100,000 gallons of oil the fee is \$718. For a facility with an aggregate aboveground maximum storage or handling capacity greater than 100,000 gallons up to one million gallons of oil the fee is \$2,155. For a facility with an aggregate aboveground maximum storage or handling capacity of one million gallons or greater of oil the fee is \$3,353. For a pipeline, the ODCP application fee is based on the average daily throughput of oil. Once that volume is determined, the ODCP application fee will be calculated per subdivisions a, b and c of this subdivision. The fee for approval of a contingency plan encompassing more than one facility as described in 9VAC25-91-170.D. is based on the aggregate aboveground storage capacity of the facilities.

Fees shall only be paid upon initial submittal of an oil discharge contingency plan by an operator. Renewals, additions, deletions or changes to the plan are not subject to the administrative fee. Application fees are refundable upon receipt of a written request to withdraw the ODCP application provided the request is received no later than 30 days after submittal and prior to the department's review of the contingency plan.

Overpayments: The most common reason for overpayment is the inclusion of commodities and/or storage capacity not subject to the Regulation. Overpayments are refundable upon written request. There is no time limit on a refund request for the overpayment of fees. Appendix E about refunds and overpayments contains additional procedures associated with this section.

Refunds: An operator is eligible for a fee refund within thirty days of the application submittal if the Agency has not already started the approval review. Because a complete ODCP approval application includes the proper fee, a request for a refund is considered a request to withdraw the ODCP approval application. Circumstances in which such a request is acceptable include: (1) closure of ASTs at the facility such that the facility storage capacity is reduced to below 25,000 gallons; or (2) change of facility operator. To obtain a refund in such cases, the operator must submit a written refund request stating that the facility is no longer in

operation, that its storage capacity is reduced below 25,000 gallons, or that the operator has changed. Tank registration forms reflecting the stated change of capacity or operator or facility closure must be completed in accordance with 9VAC25-91-70 and submitted with or prior to the written refund request.

Applications that include fees should be sent to: Department of Environmental Quality
Office of Financial Management
P.O. Box 1104
Richmond, VA 23218

Applications/renewals that do not require a fee should be sent directly to the appropriate regional office.

10.4 Contingency Plan Requirements (9VAC25-91-170)

10.4.1 Best Available Technology Requirement

§ 62.1-44.34:15 prohibits an operator from causing or permitting the operation of a facility unless the operator has submitted an oil discharge contingency plan to DEQ and received Board approval of the plan. This code section also requires that all plans provide for the use of the best available technology. Virginia Regulation 9VAC25-91-170.A. indicates that best available technology is economically feasible, proven effective, reliable, and compatible with the safe operation of the facility at the time the plan is submitted for approval.

10.4.2 Best Available Technology Interpretations

Virginia Regulation 9VAC25-91-170.A.11. requires a contingency plan to include measures to limit the outflow of oil in the assessment of a worst case discharge. The most common means of controlling the discharge of oil from aboveground storage is installation of a secondary means of containment (SPCC), remote impounding, or remote impounding by diking (NFPA 30), all of which meet the best available technology standard because they are economically feasible, effective, reliable and compatible with the safe operation of the facility. 9VAC25-91-130.B.2. requires that secondary containment be evaluated and certified by a licensed professional engineer (PE) and that it meets the requirements of 40 CFR Part 112 (1997), NFPA 30, and 29 CFR Part 1910.106 and uniform statewide building code requirements. The required PE certification of the secondary containment demonstrates that the secondary containment meets the requirements for the best available technology. Related guidance on secondary containment is located in Section 8.1.2 of this manual.

Where an operator presents some other means of controlling the discharge of oil in the facility contingency plan, the Agency will evaluate the other means to determine whether it meets the best available technology standard.

10.4.3 Plan Elements

Appendix B sets out the elements that the operator must include in order for a contingency plan to be approved.

10.4.4 Application Form and Certification

9VAC25-91-170.B. requires that all nonexempt facility operators file with DEQ the application form for approval of the contingency plan. This form shall be submitted with the required contingency plan and shall be completed insofar as it pertains to the facility. The operator shall sign and date the certification statement on the application form. If the operator is a corporation, the form shall be signed by an authorized corporate

official; if the operator is a municipality, state, federal or other public agency, the form shall be signed by an authorized executive officer or ranking elected official; if the operator is a partnership or sole proprietorship, the form shall be signed by a general partner or the sole proprietor. All forms shall be acknowledged before a Notary Public. DEQ will allow scanned copies of originally signed/notarized forms.

Change of Operator or Sale of Facility: When the operator changes or the facility is sold, the new operator must submit an updated application form within 30 days of the change or sale. No additional fee is required solely for the change of operator.

10.4.5 Submittal and Recordkeeping Requirements (9VAC25-91-170.C.)

Contingency plans must be filed with and approved by DEQ. A copy of the original plan with the facility-specific information and the approval letter needs to be retained at the facility and be readily available for inspection. Appendix D discusses the procedure relating to the filing and approval of contingency plans.

10.4.6 Multiple Facility Contingency Plans (9VAC25-91-170.D.)

The operator of multiple facilities may submit a single master contingency plan encompassing more than one facility if the facilities are located within the defined boundaries of the same city or county or if the facilities are similar in design and operation. However, the plan still needs to address the 22 site specific items listed in 9VAC25-91-170.A. for each facility. The site-specific information can be included as appendices to the master plan.

This provision allows the submission of a single plan where an operator's facilities are of similar design and operation or are located within the same city or county. This provision thus eliminates the need for duplicative planning efforts for operators who own or manage multiple facilities. By allowing the submission of a single plan, the provision also reduces the amount of application fees for multiple facility operators. Inspectors review design and operation information about the facilities to determine whether the facilities within a plan are of a similar design and operation. Appendix A contains the procedures for review and approval of contingency plans.

10.4.7 Plan Updates (9VAC25-91-170.E. & F.)

Operators need to review, update if necessary, and resubmit the ODCP for approval every 60 months from the date of approval unless significant changes occur sooner. The existing ODCP approval expires 60 months from the approval date. The operator must possess an approved ODCP as a condition of operation.

Updated plans or certification for renewal of existing plans need to be submitted for review and approval not less than 90 days prior to expiration of approval of the current plan. All notifications of changes, renewals, submissions and updates of plans required should be sent to the respective regional office. If a 'no changes' renewal is submitted, then the inspector should review the Letter of Understanding for containment/cleanup contractors to insure:

- It is current (contractor still in business);
- The contractor still has the ability and willingness to handle the maximum potential spill; and
- The contractor can provide a reasonable response time/distance.

10.4.8 Significant Changes

Operators need to notify DEQ of significant changes and make appropriate amendments to the contingency plan within 30 days of the occurrence. A significant change includes the following:

- A change of operator /owner of the facility;

- An increase or decrease in the maximum storage or handling capacity of the facility that would change the measures to limit the outflow of oil, response strategy or operational plan in the event of the worst case discharge;
- A decrease in the availability of private personnel or equipment necessary to remove to the maximum extent practicable the worst case discharge and to mitigate or prevent a substantial threat of such a discharge, or a change to the method approved to limit and contain the outflow of oil in the assessment of the worst case discharge;
- A change in the type of product stored or handled by any facility covered by the plan for which a Safety Data Sheet or its equivalent (i.e. Hazard Communication Safety Data Sheet) has not been submitted as part of the plan; or
- A change in the method or operation utilized for the early detection of a discharge to groundwater (i.e., change in a method of leak detection).

10.4.9 Updates required for mobile facility relocation

When a mobile facility (e.g. trailers, pods, skid tanks that are part of the facility capacity calculation) changes location, the operator must submit the following updates to the ODCP:

- An updated listing of state and local emergency response telephone numbers for the new locality.
- The measures to limit the flow of oil and response strategies for the new site even though the worst-case oil spill volume will likely be the same wherever the plant is located.
- A listing of surface waters, public water supplies, and other resources at risk from the worst case discharge from the new location including the priorities and strategies for protection of these resources.
- Municipal resources, such as public water supply intakes, storm drains or sanitary sewer manholes or lines that may be affected by the worst case discharge.
- Although most mobile tanks are elevated and visual monitoring is the accepted method of leak detection, the system for the new site must be noted and the records of inspections maintained.
- Any site modifications made to comply with leak detection must be noted in the plan update.

No additional fee or revision of the application is required. The operator must notify both the Regional Office gaining the facility as well as the Regional Office losing the facility.

10.4.10 Exercise of Contingency Plans (9VAC25-91-170.G.)

A critical part of emergency preparedness programs is the exercise of the response plans (i.e., a “spill drill”). A spill drill can range from a large scale equipment deployment exercise to a simple telephone notification call out. As part of the ODCP formal review process, facility operators or DEQ may choose to conduct a notification exercise, the elements of which are set out in Appendix B. If DEQ initiates an exercise beyond the scope of a notification exercise, the protocol for planning, implementation and evaluation of the exercise will incorporate the 2016 National Preparedness for Response Exercise Program (PREP) Guidelines. Where an operator has conducted spill response exercises for other state or federal programs, the exercises can count for ODCP approval provided that the same notifications in the ODCP are covered in the exercise and any deficiencies found during the exercises have been corrected. Moreover, an operator’s actual response to an actual oil spill

can count as an exercise if the operator can document through the Notification Checklist that the appropriate notifications were made according to the ODCP.

DEQ will not initiate unannounced exercises. The Regional Office has the discretion to request an exercise of the response plan. Such an exercise could be incorporated into the AST inspection. If an exercise is requested, a site specific scenario must be provided to the facility.

10.5 Denial or Modification of Plan Approval

DEQ may, after notice and opportunity for a conference pursuant to § 2.2-4019 of the Code of Virginia deny or modify its approval of an oil discharge contingency plan if it determines that:

1. The plan as submitted fails to provide sufficient information for DEQ to process, review and evaluate the plan or fails to ensure the applicant can take such steps as are necessary to protect environmentally sensitive areas, to respond to the threat of a discharge, or to contain and clean up an oil discharge within the shortest feasible time;
2. A significant change has occurred in the operation of the facility covered by the plan;
3. The facility's discharge experience or its inability to implement its plan in an oil spill discharge exercise demonstrates a necessity for modification; or
4. There has been a significant change in the best available technology, including maintenance items with secondary containment, since the plan was approved.

Operators of facilities subject to ODCP requirements must file and obtain approval of plans as a condition of operation. To the extent feasible, the Agency may be able to provide assistance to operators with plan development. However, in cases where the denial or modification of plan approval appears necessary, the operator may contest the denial or modification and request an informal conference. Appendix M contains informal conference procedures.

10.6 ODCP Audits

If an oil discharge occurs from a facility regulated by the ODCP program, an ODCP Audit may be conducted to determine if the operator implemented the plan. The ODCP Audit supplements, but does not replace, investigations conducted by DEQ. Regional Office management determines whether to conduct an ODCP Audit and may base the decision on the size of the discharge and projected environmental damage. ODCP Audits may be conducted where enforcement action may result in revocation of plan approval or extensive resource damage is likely to result in litigation.

10.7 ODCP Revocation

10.7.1 Involuntary

DEQ may revoke approval of an ODCP approval if DEQ, after notice and opportunity for a hearing, in accordance with 9VAC25-91-170.H., determines that:

- Approval was obtained by fraud or misrepresentation;
- The plan cannot be implemented as approved;

- A term or condition of approval has been violated; or
- The facility is no longer in operation.

Regional staff should consult with OSRR if they believe circumstances may warrant ODCP revocation.

10.7.2 Voluntary

A facility operator may request that DEQ revoke approval of an ODCP under certain circumstances, e.g., a facility is no longer in operation or a facility's aggregate storage capacity has been reduced to below 25,000 gallons. For questions regarding facility capacity, the capacity of aboveground storage tanks is included in the facility's aggregate storage capacity total until the tanks are permanently closed.

In the case of an operator-initiated revocation, or when both the owner and operator agree to the revocation, hearing should not be warranted. However, both the owner and operator must waive their rights to a formal hearing in writing. Revocation of plan approval in these circumstances is considered "non-adversarial" and the procedures described in Appendix N ODCP Revocation apply.

If a facility operator requests the ODCP approval revocation because the facility ceased operations or is documented to be no longer subject to the requirements, and the ODCP is under review but not approved, the request becomes a rescission of the ODCP application. The ODCP application rescission procedure is discussed in Appendix P.

10.8 Acceptance of Federal Contingency Plans

Many facility operators subject to the ODCP Regulation are also required to submit response plans for federal programs. The Agency supports the single plan concept and will accept federal plans for review, as long as all of the information in 9VAC25-91-170.A. is included. In order to facilitate plan review, a cross-reference must be submitted to show where the specific ODCP sections can be found. Operators must notify DEQ of any plan amendments.

A Facility Response Plan (FRP) developed pursuant to § 4202 of the Federal Oil Pollution Act of 1990, Pub. L. No. 101-380, 33 USCA § 2716 (1996), or a Spill Prevention, Control, and Countermeasures (SPCC) plan pursuant to 40 CFR Part 112 may be accepted as meeting the requirements of subdivisions A.1. through A.22. of the ODCP. The operator must submit a copy of the FRP/SPCC and a copy of the currently valid FRP/SPCC approval letter for the facility for review and approval by DEQ. The FRP/SPCC shall contain a cross reference in order to index pages for the specific requirements of the 22 items required for the ODCP Regulation. The federal plan, approval letter and cross reference must be resubmitted in accordance with the renewal period established by federal statute or regulation but in no instance shall the renewal period exceed five years. DEQ must be notified of any plan amendments.

10.9 Compliance Evaluation

10.9.1 ODCP review

In order to evaluate compliance with the ODCP requirements, the inspector should verify plan elements upon initial receipt of the ODCP and during subsequent inspections. The inspector should verify that both a signed and notarized ODCP application and appropriate application fee are submitted along with the ODCP. A site visit to assess facility conditions should be considered in order to verify site conditions. Appendix A and its

companion checklist (Appendix C) should be consulted by the facility when developing ODCPs and used by DEQ staff when reviewing ODCP plans for approval. The ODCP guidelines and review checklist should be completed in order to determine if the plan addresses the critical elements. The ODCP review and approval process is outlined in Appendix D. A site visit is strongly recommended prior to the approval of an initial ODCP application. Deficient items should be documented and conveyed in writing to the operator of the facility.

10.9.2 ODCP Site Inspection (Section XX of AST Inspection Checklist - Appendix W)

For on-site ODCP verification inspections, the inspector should determine if the submitted plan reflects what is physically at the facility. For the on-site inspections, the inspector needs to determine:

- Are the facility tanks, pumps, piping, secondary containment, and available response equipment consistent with the facility description? Do they match the registration data on record?
- Are the tank identification numbers stenciled on the tanks in agreement with both tank registration and ODCP numbers?
- Is the facility representative familiar with the contents and purpose of the ODCP, and is the ODCP available at the facility?
- Is the assessment of the worst case discharge (quantity, flow path, etc.) consistent with site observations? Is the response strategy to such a spill logical?
- Is the facility's equipment inventory sufficient to deal with the volume and type of products at the facility in the shortest feasible time?

These onsite inspection items should be noted on the checklist and deficiencies or inconsistencies conveyed in writing to the operator of the facility for rectification.

10.10 Leak Detection (9VAC25-91-170 A.18.)

Facilities with an aggregate aboveground storage capacity of 25,000 gallons or more must establish an early release detection system for an oil discharge. This leak detection system must be installed for any AST that contains more than 660 gallons of storage capacity at these facilities, unless otherwise excluded by regulation.

The purpose of leak detection at AST facilities is to identify a discharge from the tanks and associated transfer piping to soil or groundwater in the shortest feasible time. Identifying leaks early reduces the threat of contamination to the environment and costs associated with soil and groundwater remediation. The following discussion presents leak detection system options that comply with the ODCP Requirements, 9VAC25-91-170.A.18.

Operators must be able to demonstrate for the ODCP review that the leak-detection system installed at the facility is capable of detecting a leak from an AST and associated transfer piping in the shortest feasible time for that particular leak detection system. A preliminary site assessment report must be performed if groundwater or vapor monitoring are used for leak detection. A completed leak detection notification form (Appendix R) indicating leak detection method to be used must be submitted as part of the ODCP.

Note: Leak detection requirements for ASTs located in an oil-impacted area can be accomplished via corrective action monitoring required by the DEQ Regional Office **only** when the tanks and associated transfer piping have been tested for leaks and determined to be in satisfactory condition. This leak-detection option is

acceptable only during the corrective action monitoring period and applies only to tanks and transfer piping located in an impacted area at the facility.

10.10.1 Summary

Leak detection options for ASTs and associated transfer piping are limited to methods that can detect leaks external to the tank/pipe. Conventional inventory-control technologies are **not** options that meet the ODCP leak detection requirements because they cannot detect external leaks to the environment. Statistical Inventory Reconciliation (SIR) is an acceptable method of leak detection and is included as an option.

The most desirable and cost-effective leak detection method for an individual site depends on the tanks and piping, product stored, site conditions, business schedule, spill history, and other factors. Recognized methods of leak detection are:

- Groundwater Monitoring;
- Vapor Monitoring;
- Interstitial Monitoring with Release Prevention Barriers (RPB);
- Visual Interstitial Monitoring;
- Statistical Inventory Reconciliation (SIR); and
- Visual Monitoring.

All leak detection monitoring records must be kept on site for inspections for a period of five years.

10.10.2 Groundwater Monitoring

Groundwater monitoring for leak detection is restricted to use at sites where depth of groundwater is less than 20 ft. Groundwater monitoring works best if the soil around and underneath the AST is sand, gravel, or other coarse materials. Restricting groundwater monitoring to sites with this hydraulic profile minimizes the potential for widespread environmental contamination, resulting in reduced cleanup costs. Facilities with 1,000,000 gallons or greater storage capacity are required to have Groundwater Characterization Study (GCS) wells and potentially can use the same wells required in the GCS for groundwater leak-detection monitoring if depth to groundwater is less than 20 ft. below the ground surface and wells are placed to detect leaks in the shortest feasible time. GCS wells are not always suitable for groundwater monitoring for leak detection. The inspector will need to determine if the number and placement of wells is sufficient for groundwater monitoring

10.10.2.1 How Groundwater Monitoring Works

Groundwater monitoring involves the use of one or more permanent monitoring wells. The two main components of a groundwater monitoring system are the monitoring well and the groundwater monitoring device that must be able to detect at least 1/8-in. oil thickness on/in groundwater. Monitoring wells must be designed and sealed to avoid becoming a conduit for contamination. The slotted portion of the monitoring well casing must be designed to prevent migration of natural soils or filter pack into the well. In addition, the casing design must allow entry of oil in the water table under both high and low groundwater conditions. The wells also should be clearly marked and locked to avoid tampering and unauthorized access.

10.10.2.2 Requirements for Groundwater Monitoring

Before installation, a preliminary site assessment is necessary to:

- Assure a groundwater depth of less than 20 ft. year-round;

- Determine hydraulic conductivity: supplementary monitoring wells may be needed to account for low permeable soil conditions;
- Determine a groundwater flow gradient and the range of groundwater fluctuation; and
- Determine that the wells are placed in a manner that is conducive to detecting a leak within the shortest feasible time.

The assessment report should:

- Contain boring logs that classify the soil type beneath the site, indicate the screening interval of the monitoring well, and depth to groundwater;
- Include a facility map indicating the location of the groundwater monitoring wells and the groundwater flow gradient; and
- Be kept in the leak detection section of the ODCP at the facility.

Groundwater monitoring can only be used if the stored oil does not easily mix with water, floats on top of water, and has a specific gravity of less than one. Well screens must intercept the top of the groundwater table during periods of high and low groundwater fluctuations. Monitoring well placement is important and depends on site-specific conditions. Monitoring wells should be placed in locations to establish all groundwater flow conditions and directions accurately across seasonal variations. The precise number and location of the wells should be agreed upon between the facility operator and the DEQ Regional staff. If any monitoring wells are placed inside or adjacent to the bermed area, care should be taken not to disturb or compromise the integrity of the berm.

Wells that monitor transfer-piping for discharges may have to cover an extremely large area due to long transfer piping runs. Leaks can occur in any portion of the line, especially at piping joints. Therefore, well placement depends on site-specific conditions.

Monitoring wells must be checked at least monthly for an indication of discharged oil from the AST or transfer piping. The records must include monitoring dates, personnel, procedures, and results for each well.

10.10.3 Vapor Monitoring

Vapor monitoring should not be used at sites where soil conditions do not allow diffusion of vapors or where high groundwater, excessive rainfall, or other sources of moisture could interfere with the operation of vapor monitoring for more than 30 consecutive days. Background vapor concentrations can also interfere with this monitoring. Vapor monitoring may be used at sites where depth to groundwater is greater than 20 ft. if conditions are favorable.

10.10.3.1 How Vapor Monitoring Works

Leak-detection vapor monitoring measures “vapors” from oil in the subsurface around the tank/pipe to determine if a discharge from the tank/pipe has occurred. A preliminary site assessment must be performed before installing a vapor monitoring leak detection system to determine that wells are placed in a manner that detects a leak within the shortest feasible time. Vapor monitoring wells may be placed vertically, diagonally or horizontally underneath the tanks. Care must be taken to not disturb the integrity of the tank foundation.

10.10.3.2 Requirements for Vapor Monitoring

The two main components of a vapor monitoring system are a monitoring well and a vapor monitoring device that must be able to detect at least 1 ppm of vapors or an added traceable substance from discharged oil in soil.

Before installation, a preliminary site assessment is recommended to determine the volatility of the stored oil or traceable additive substance, the permeability of the soil surrounding the tanks and underground transfer piping, and the residual background vapors at a site. If the soil contains clay, then more monitoring wells may be required to account for the decreased permeability. The preliminary site assessment should consider soil moisture content, methane concentrations (methane can affect readings), and nearby active/abandoned underground or aboveground storage facilities that could possibly interfere with vapor monitoring. In addition, the report should contain boring logs that classify the soil type beneath the site and indicate the screening interval of the monitoring well(s). A facility map indicating the location of the vapor monitoring wells must be included. This assessment must be kept in the facility copy of the ODCP under the leak detection section.

Ideally, soil surrounding the AST should be sand, gravel, or other permeable material that will allow vapors or added traceable compounds from the stored oil to move easily to the monitor and clean enough that any previous contamination does not interfere with the detection of a current leak. The Storage Tank Technical Manual contains additional guidance on background contamination discernment from new releases. Monitoring wells should be designed and sealed to avoid becoming a conduit for potential contamination. The wells must be clearly marked and locked to avoid unauthorized access and tampering. The contents stored in the AST must vaporize into a quantity that is detectable by the monitoring device.

Vapor monitoring wells must be checked at least monthly for the presence of vapors. These records must include monitoring and personnel procedures, monitoring dates, and results of inspections for each leak detection monitoring well. If a traceable substance is used for detection purposes, the monitoring records must include the quantity of the substance added, the concentration added, and the dates when the substance was added to the oil.

10.10.3.3 Vapor Monitoring Detection Devices

Fully automated vapor monitoring systems have permanently installed equipment to continuously gather and analyze vapor samples. A leak is detected when visual or audible alarms are activated. The automated systems must be checked according to the manufacturer's suggested maintenance schedules and records of maintenance schedules kept with monitoring records.

Manually-operated vapor monitoring systems range from equipment that analyzes a vapor sample on-site such as photo-ionizations (PID) or flame ionization detectors (FID) to devices that gather a sample to be sent to and analyzed in a laboratory.

10.10.4 Interstitial Monitoring With Release Prevention Barrier (RPB)

An interstitial monitoring system for leak detection uses release detection devices to monitor the space between a release prevention barrier (RPB) and the AST tank bottom or associated transfer piping. The monitor can perform a channeling function to a port where visual monitoring for a leak occurs. This leak detection monitoring device is placed in the space between the tank bottom or piping and an RPB, known as the interstitial space. The RPB contains the discharge and channels the leak so the release-detection monitor

in the interstitial space can detect it. Secondary containment, such as an earthen berm or dike, does not constitute an RPB.

If an interstitial monitor indicates a breach or potential breach in the AST or transfer piping, the AST operator must identify: (1) the cause of the breach in the AST or transfer piping; and (2) if there was a discharge of oil to the environment. If the breach in the AST or transfer piping is found and repaired within 24 hours after the interstitial monitor indicated the problem and the breach could not have caused a discharge of oil to the environment, a suspected release does not have to be reported to DEQ (keep notes on facility records of the event). Problems that cannot be found or repaired within 24 hours as well as problems that may have caused a discharge of oil to the environment must be reported to DEQ within 24 hours after the initial discovery of the problem.

Components Necessary for Interstitial Monitoring. Interstitial monitoring for leak detection is a four component system:

1. Tank bottom or transfer piping;
2. Interstitial space - area between an RPB and the tank bottom/transfer piping;
3. Leak detection device that is placed in the interstitial space; and
4. Release prevention barrier.

10.10.4.1 Release Prevention Barriers (RPBs)

An RPB means a non-earthen barrier that is impermeable; composed of material compatible with oil stored in the AST; meets proper engineering strength and elasticity standards; and functions to prevent the discharge of stored oil to state lands, waters and storm drains. It must contain and channel any discharged oil in a manner that provides for early leak detection through the required daily and weekly inspections.

Examples of RPBs:

- Double-bottom AST in which a second steel-bottom of the tank closest to the foundation or ground surface acts as the RPB. During a retrofit, a liner is placed on top of the existing tank bottom. A 4 to 6 inch sand layer is placed on top of the liner. The primary (new) tank bottom is then installed on top of the sand layer.
- Double-wall AST where the second wall that encapsulates the primary tank acts as the RPB.
- Reinforced flexible membrane liner that meets the criteria listed above for an RPB, which is typically placed on top of the existing tank bottom. A 4 to 6 inch sand layer is placed on top of the liner. The primary (new) tank bottom is then installed on top of the sand layer that is installed under an AST.
- Coated concrete qualifies as an RPB if the coating meets criteria outlined above for RPBs. **(Concrete alone is not considered impervious and must be coated.)**
- Double-wall piping systems where the outer piping is considered an RPB.

Release-Detection Devices for RPBs. Release-detection devices monitor the area between the tank and the barrier for leaks and alert the operator if a leak has occurred. They can be as simple as a dipstick or petroleum-finding paste on a stick used at the lowest point of the containment to determine if oil has leaked and pooled. Monitors can also be sophisticated automated systems that continuously check for leaks. The more sensitive the release detection device, the earlier a leak can be detected, providing a more effective early warning system.

Interstitial monitoring systems operate to detect leaks based on electrical conductivity, pressure, or fluid sensing, hydrostatic monitoring, visual monitoring, and vapor monitoring. Some monitors indicate the physical presence of the discharged oil, detecting either liquid or vapor phases. Other monitors check for a change in condition that indicates a hole in the tank, such as a loss of pressure or a change in the level of water/brine between the walls of a double-walled tank.

10.10.4.2 Requirements for Interstitial Monitoring

A release detection device must be installed in the interstitial space between the tank bottom and the RPB. The RPB must be a non-earthen impermeable barrier composed of material that is compatible with the oil stored in the AST. The RPB must meet proper engineering strength and elasticity standards and function to prevent the discharge of oil to state lands, waters, and storm drains. The RPB also must contain and channel any discharge to the release detection device for discovery. When selecting the RPB material, high temperature operations and product composition must be considered.

The AST interstitial monitoring requirements apply to associated transfer piping.

Interstitial release detection monitors must be checked at least monthly for the presence of oil from the AST or underground transfer piping. All leak detection monitoring records must be kept on site for a period of five years to be reviewed in the event of an inspection. These records must include monitoring procedures, personnel conducting the leak detection, monitoring dates, results of inspections for each of the release detection monitoring devices, and must demonstrate compliance with all of the requirements listed in this section.

10.10.5 Visual Monitoring for Elevated AST/Piping

Where construction practices allow external access to the tank bottom, visual external inspections of the tanks can be conducted in accordance with API 653 Recommended Practices. Visual inspection of elevated tanks must be conducted on a weekly basis to determine if any leakage is occurring pursuant to pollution prevention requirements. The person conducting the inspection must look for signs of leakage, spillage, and stained or discolored soils.

Where construction practices allow external access to the AST's associated piping, visual inspections of the piping can be conducted in accordance with API 570 or API 653 Recommended Practices. Visual inspection of elevated piping must be conducted on a weekly basis to determine if any leakage is occurring. The person conducting the inspection must look for signs of leakage, spillage, and stained or discolored soils.

Weekly visual leak detection monitoring records are kept on site for ODCP inspections for a period of five years. These records must include monitoring procedures, personnel, monitoring dates, results of inspections, and must demonstrate compliance with all of the requirements listed in this section.

10.10.6 AST Statistical Inventory Reconciliation (SIR)

Statistical Inventory Reconciliation (SIR) is an acceptable alternative method for early detection of a discharge to groundwater for ASTs and associated piping. A facility's procedure for implementing this alternative method must be documented and reviewed as part of the facility ODCP.

How SIR Works. Statistical Inventory Reconciliation (SIR) analysis departs from conventional inventory control procedures in that the analysis discloses characteristic errors introduced to the product inventory data during the inventory measurement and record keeping process. These characteristic sources of error, which can be separately identified because they have a characteristic "fingerprint" in the inventory data, include:

- Overages or underages of product delivery;
- Meter errors;
- Blending errors;
- Non-standard tank geometry;
- Theft or pilferage;
- Temperature effects upon delivery;
- Unrecorded additions or removals of product; and
- Spurious gauging observations.

By identifying the nature and amount of these sources of error, the SIR analysis discloses their effects on inventory data and narrows the analysis to statistically significant data.

Requirements for SIR. In order for a facility to use SIR, all tanks and piping must be proven liquid tight through pneumatic, hydrostatic, or tracer testing prior to initiating the use of SIR. AST facility operators must demonstrate to the satisfaction of DEQ, that their tanks and piping have tested liquid tight as a requirement of ODCP approval. Each SIR Provider and facility operator must also explain fully how proper temperature correction will be achieved on a consistent basis prior to initiating SIR.

The operator must use a SIR Provider who has obtained independent third-party certification of the SIR Provider's method. Facility operators must demonstrate the third-party approved method to DEQ prior to formal approval of the ODCP. Operators must be aware of and agree to comply with the SIR Provider's criteria for data collection. The SIR Provider and operator must state in writing that the facility and procedures meet the criteria needed to implement SIR. A copy of this statement must be provided to DEQ Regional Office staff prior to formal ODCP approval.

Facility specific procedures for data collection must be in accordance with the SIR Provider's criteria (including accurate meter calibration equipment, accurate temperature correction equipment, and site operator training in SIR). Records of collected data become part of the ODCP and are subject to review by DEQ.

The facility ODCP must list criteria for reporting a discharge or a substantial threat of a discharge and procedures to be followed for verifying a threat of a discharge.

Operators receiving a report from their SIR Provider of an "inconclusive" must follow procedures specified in their ODCP for reporting and verifying a threat of a discharge. Operators receiving a report from their SIR Provider of a "fail" must follow procedures specified in their ODCP for reporting a discharge. The operator is presumed to be causing a discharge of oil to state lands and must report the discharge to DEQ immediately.

All requirements of the “AST Statistical Inventory Reconciliation Checklist” (Appendix S) must be met and included in the ODCP.

Information Provided in an SIR Analysis. Given that a quantitative SIR system reports loss rates, thresholds, and minimum detectable leak (MDL) values, the appropriate criteria for declaring a “pass,” “fail,” or an “inconclusive” can be identified. An SIR procedure typically categorizes results as such – “pass,” “inconclusive,” or “fail.” In addition, a quantitative procedure also provides the following (in gallons/hour):

- A numerical estimate of the leak rate from the AST;
- The threshold leak rate at which an SIR Provider would initiate the report that an AST has failed; and
- The MDL rate which specifies the smallest leak rate the SIR Provider is capable of detecting given a probability of detection of 0.95 or better.

The data must be of adequate quality to achieve the following:

<i>AST System Volume</i>	<i>Minimum Detectable Leak Rate (MDL)</i>
30,000 gallons and less	.20 GPH (Probability of Detection of 0.95 & Probability of False Alarm of 0.05)
30,001-100,000 gallons	.35 GPH (Probability of Detection of 0.95 & Probability of False Alarm of 0.05)
greater than 100,000 gallons	.50 GPH (Probability of Detection of 0.95 & Probability of False Alarm of 0.05)

Action Required Based on Test Results

- A report of a “pass”
If the calculated leak rate is less than or equal to the leak threshold, and the minimum detectable leak rate is less than or equal to the certified performance standard rate (MDL), the test result is “pass.” A “pass” means the AST tested is in compliance within the certified performance standard (the specified MDL rate) for the data set and time period (see table above). No action is required of the operator, other than record keeping.
- A report of an “inconclusive”
If the MDL rate exceeds the SIR Provider’s certified performance standard (0.2GPH; 0.35GPH; 0.50GPH) and the calculated leak rate is less than the leak threshold, the test result is “inconclusive.” If, for any other reason, the test result is not conclusive (i.e., “pass” or “fail”), the result is considered “inconclusive.” A report of an “inconclusive” indicates a higher than acceptable MDL rate which may reflect a lapse in measurement and record keeping practices or that, for that time period, no valid form of leak detection was being performed on the subject tank or piping.

Upon receiving the first "inconclusive" SIR result, the AST operator must immediately consult their SIR vendor to assess the possible causes for the inconclusive test result. The DEQ Storage Tank Program will, as a matter of practice, require AST operators to perform a release investigation to evaluate whether the tank is leaking when:

1. SIR results for two consecutive months are inconclusive; or
2. There are three inconclusive SIR results during any six month period.

This analysis will generate a report of a “pass” (if the criteria specified below are met) or a “fail.” The MDL rate criteria for a 90-day analysis are one half of those required for a rolling 60-day analysis. This reduces the potential for product losses which may have been effectively masked by the excessive variability in the inventory data which caused the initial report of an “inconclusive”. (Many SIR Providers normally use a rolling 60 days of data for their analyses.) Otherwise, a report of a “fail” will be generated and the investigative procedure for a threat of a discharge will be implemented. Immediate reporting to DEQ is required.

AST/SIR Pass Criteria Following an Inconclusive Report (Gals/Hr.)

<i>Tank Capacity</i>	<i>Loss Rate</i>	<i>Minimum Detectable Leak</i>
30,000 gallons and less	0.00	.10
30,001-100,000 gallons	0.00	.17
greater than 100,000 gallons	0.00	.25

- A report of a “fail”
If the calculated leak rate is greater than the leak threshold, the test result is a “fail.” A “fail” equates to a substantial threat of a discharge and must be reported to DEQ immediately.

If SIR results for one month indicate that the tank may be leaking (i.e. a failed SIR result), the AST operator must: (1) report a failed leak detection test to DEQ; (2) investigate whether a discharge of oil has occurred; and (3) submit a release investigation report to DEQ. DEQ Regional Office staff will provide investigation/cleanup guidance.

Site Suitability. The SIR Provider will analyze the facility; recommend any necessary upgrades in meters, calibration, and temperature correction equipment; and, based on the established performance criteria set by DEQ, determine whether SIR will work for the facility. Operator training in SIR is always prudent. The SIR Provider protocol may include, but is not limited to: a visual check of exposed components of the AST system, meter calibration checks, a validation of temperature probe functionality, and record keeping practices.

The operator must retain a copy of the SIR Provider’s protocol checklist. Although there are no site specific criteria (i.e., soil types, depth to groundwater, etc.), tanks and piping must be demonstrated to be tight before acceptance of SIR as the release detection method.

Standard Report Format. The standard format for reporting SIR results must include: location ID, tank ID, tank capacity, MDL standard for the tank, product stored, loss trend with minimum detectable leak, does it meet monthly standard (Y/N), and remarks. A table containing this data is required.

11 Groundwater Characterization Study

11.1 Introduction

Virginia Regulation 9VAC25-91-170.A.13.a. requires operators of facilities with aggregate aboveground storage or handling capacities of **one million gallons or greater** of oil to conduct a groundwater characterization study

(GCS) as part of the ODCP. Part V of the Regulation contains further GCS and GCS well monitoring requirements. The purpose of the GCS is to determine baseline conditions and flow of groundwater within the geographic boundaries of the facility and to assess the potential threat to public health and the environment caused by an oil discharge to groundwater. The GCS provides information necessary to initiate containment, cleanup, and mitigation of an oil discharge to groundwater within the shortest feasible time based on risk to public health and the environment. The GCS must adequately characterize geology, hydrogeology, water quality, and identify all potential migration pathways and potential receptors of groundwater contamination. Data from the GCS is the basis for any further site characterization that DEQ may require if a discharge occurs.

Facilities with 1,000,000 gallons or greater storage capacity may use the same wells required in the GCS for groundwater leak detection monitoring if depth to groundwater is less than 20 feet below the ground surface and wells are placed to detect leaks in the shortest feasible time.

Virginia Regulation 9VAC25-91-200 also requires that a Groundwater Characterization Study (GCS) Annual report summarizing the facility groundwater monitoring program be prepared and submitted to DEQ. The purpose of the GCS Annual Report is to document the recent groundwater conditions and compares those conditions to baseline conditions established during the initial Groundwater Characterization Study for any evidence of a release.

The following discussion provides a detailed explanation of the requirements necessary to complete a GCS and monitoring of the GCS wells. Operators are to use these guidelines to prepare the GCS and submit subsequent annual GCS monitoring reports.

Note: Section 210 of the Regulation stipulates that should any such observations or data indicate the presence of petroleum hydrocarbons in ground water, the results must be reported immediately to DEQ and to the local director or coordinator of emergency services.

11.2 Deviations from GCS Requirements

If an operator believes site specific conditions warrant deviation from these procedures, the operator may request approval for the proposed changes by filing a written request with the appropriate Regional Office.

11.3 GCS Requirements

11.3.1 GCS Report Format

The required format for GCS reports is set out in Appendix U. A written report previously filed with another agency or DEQ may be submitted as the GCS if it contains the required information outlined in this guidance. The Table of Contents page must precede a report not submitted in the required format and must cross reference the page number(s) in the report with each topic heading listed in Appendix U. Additionally, the report must include the name and address of the facility, operator and consultant, if any, who prepared the report, and the date the report was submitted. Laboratory certificates of analysis must be included.

In order to facilitate review, changes, storage, and Freedom of Information (FOIA) requests, the GCS and GCS Annual Monitoring Reports should be submitted in an electronic pdf format. In addition, paper versions may be submitted with Regional Office approval.

11.3.2 Surface/Subsurface Site Characterization

The purpose of this part of the GCS report is to establish the relationship between facility activities and areas of potential groundwater contamination.

11.3.2.1 Facility Maps

Ideally, all maps submitted in this report should be the same scale: 1 inch equal to not more than 200 ft. Alternate scale plot plans are acceptable if the information required of each map is adequately portrayed. Each map must indicate north, scale and date of production.

As described in the Regulation 9VAC25-91-170.A., the maps should identify and locate all potential sources of contamination including tanks, truck loading areas, transfer stations and pipelines. Piping is defined as all above and below ground piping. Both in-use and abandoned piping must be included. Additionally, the facility map should identify and locate all potential surface/subsurface conduits (natural or manmade) such as springs, streams, rivers, underground utility lines, storm sewer lines and buried electrical conduits.

11.3.2.2 Public and Private Water Well Map

As described in the Regulation 9VAC25-91-170.A.13., the identification and location of natural resources at risk (including, but not limited to, surface waters as indicated on the applicable USGS quadrangle maps, groundwater, public water supplies, public and private water wells and springs, state or federal wildlife management areas, wildlife refuges, management areas, sanctuaries, property listed on the National Register of Historic Places and property listed on the National Register of Natural Landmarks), is to be included. If necessary, a separate, smaller scale map should identify public and private water wells within a 1,000 foot radius of facility property boundaries. However, if site conditions (i.e., complex geology) indicate that additional downgradient wells are at risk, these should also be identified.

11.3.2.3 Site Topography Map

This map should delineate surface topography by showing contours on a facility base-map overlay. The contour interval should be sufficient to clearly show the pattern of surface water flow in the vicinity of the facility. Topographic maps that are 7.5-min scale should not be used as the scale is too large.

11.3.2.4 Monitoring Well Location Map

Monitoring well locations must be delineated on the site base map. Each map should indicate north, scale and date of generation.

11.3.3 Groundwater Characteristics

Determining groundwater characteristics assists in calculating maximum potential migration rate, the contaminant dispersion potential, and helps delineate quantities and rates of flow.

11.3.4 Regional Geology Summary

This section describes regional stratigraphic and structural features, and major aquifers including depth, thickness, flow regimes, recharge and discharge zones.

11.3.5 Site Geology Summary

This section should summarize site specific geologic conditions that can influence fluid storage and migration. These include soil type, regolith type, rock type and petrology. If the site overlies weathered bedrock (saprolite), overall weathering, residual fractures, weathered quartz veins, and hardpan should be described. Intact weathered bedrock features, such as fracture orientation, aperture, spacing and effective porosity should also be indicated. In sedimentary beds, stratigraphic changes should be noted and described. In karstic regimes, known or suspected subsurface features such as sinkholes, spires, columns and ledges should be noted.

11.3.6 Boring Logs

Boring logs should be consistent with appropriate industry standards, such as those described in ASTM D2488, D5434 and D5370.

11.3.7 Cross Sections

If appropriate for the site, cross sections can be a useful way of summarizing geologic and hydrogeologic information. Types and thickness of strata from ground surface to the depth of the deepest monitoring well must be depicted in a correlated cross-section oriented parallel to groundwater flow direction. Additionally, groundwater elevations must be identified.

11.3.8 Monitoring Well Construction Summary

Monitoring well construction procedures must be summarized and depicted on boring logs.

11.3.9 Perched Water Zones

Perched water may be a significant barrier to downward migration of oil, and may represent the most likely horizontal pathway, and storage area for discharged oil. Perched water should be adequately characterized and dedicated monitoring wells for perched water may be appropriate.

11.3.10 Facilities in Mature Karst Regions

Groundwater characterization in Karst is a specialized subject requiring a carefully designed, site specific work plan that should be discussed with DEQ before being completed.

11.3.11 Well Installation Procedures

Monitoring wells should be constructed, developed, maintained, identified and abandoned in accordance with best industry standards and practices. In general, well screens should intercept groundwater and be constructed to prevent vertical migration of contaminants to and between groundwater bearing units. Screened lengths should be no more than 10 feet. However, in certain areas of Virginia, particularly in areas of fractured bedrock, seasonal variations can be significant. It may be necessary to have several wells with different screen depths to adequately monitor seasonal variations. Overly long screens or open boreholes permit the vertical migration of contaminants and are likely to produce misleading groundwater elevation and quality data due to groundwater mixing from different flow zones.

11.3.12 Abandonment of Boring Locations Summary

All borings not converted into groundwater monitoring wells must be abandoned in accordance with best industry standards and practice and in accordance with the requirements of the private drinking water wells regulations.

11.3.13 Monitoring Well Development

Monitoring wells are to be developed in accordance with best industry standards and practices. All development water must be managed in accordance with Local, State, and Federal laws and regulations and in a manner that will not cause pollution.

11.3.14 Aquifer Characteristics

The GCS should provide hydraulic characteristics of the underlying geology including hydraulic conductivity, transmissivity, groundwater velocity, and specific yield as appropriate. All test data must be included in the GCS report. Information should be included on aquifer, aquicludes, aquitards, and perched water bearing units as appropriate to understand the storage and transmission of fluid across the facility.

11.3.15 Soil and Groundwater Quality Evaluation

All field data collection should be in accordance with best industry standards and practices. Appendix V of the Storage Tank Program Manual provides general guidelines for collecting soil and groundwater samples that are expected to meet the data quality objectives needed for the GCS.

DEQ Storage Tank Program also encourages persons to consult the laboratory that they plan to use for any special requirements before developing sampling procedures that they will use at a particular site. All analyses must be performed by laboratories certified by the Virginia Environmental Laboratory Accreditation Program (VELAP) using the appropriate SW846 method. Demonstration of VELAP certification along with the laboratory certificates of analysis must be included in the GCS Report. The sampling procedure should also be outlined in the report.

11.3.16 GCS Well Monitoring Procedures

9VAC25-91-190 stipulates the monitoring parameters and sampling frequency of the GCS wells which are discussed below.

11.3.16.1 Monthly Gauging of GCS Wells

Static water levels must be measured and recorded monthly. All water level measurements, including total well-depth measurements, must be referenced from an established and documented point on the top of the well casing. Measurements must be correlated with mean sea level datum and measured to the nearest 0.01 ft.

11.3.16.2 Quarterly Groundwater and Vapor Monitoring

Vapor measurements and quarterly visual groundwater monitoring results must be tabulated for each well sampled. Note that equipment must be calibrated properly to detect vapors from product stored at the facility and maintained in accordance with best industry standards and practices.

Vapor monitoring of all wells identified in the ODCP GCS must be conducted before collecting quarterly groundwater samples. Quarterly vapor monitoring consists of collecting one monitoring well headspace measurement. Quarterly groundwater sampling consists of (1) measuring free product on top of groundwater, and (2) collecting groundwater samples for visual inspection.

If present, the thickness of the hydrocarbon layer floating on groundwater must be measured. Measuring devices must be able to detect at least .01 feet of free product on top of the groundwater. This can be done using an electronic measuring device, or measuring tape and petroleum-finding paste.

If free product or sheen is encountered in a monitoring well, the release must be reported immediately to the appropriate DEQ Regional Office. Immediate actions to prevent any further release of the oil/petroleum into the environment must be undertaken and fire, explosion and vapor hazards must be identified and mitigated. Additional action with regard to abatement, recovery, assessment and any corrective action will be dependent on site specific information and consultation with the DEQ Regional Office.

11.3.17 Annual Groundwater Monitoring for Laboratory Analysis

All wells identified in the ODCP GCS must be sampled and analyzed for BTEX, TPH and MTBE at least annually using the protocol in Appendix V of the of the Storage Tank Program Manual.

Trip blanks do not need to be analyzed if all other samples are analyzed and the constituents of concern are below the detection limits in all other samples. Field blanks are not required if dedicated sampling equipment is used (i.e. the bailer is permanently left in the well) or disposable sampling equipment is used.

11.3.18 GCS Annual Monitoring Report

Virginia Regulation 9VAC25-91-200 requires that an Annual GCS Monitoring Report summarizing the facility groundwater monitoring program be prepared and submitted to the DEQ regional office. For consistency and convenience, the content of the Annual GCS Evaluation Report should follow the format of the Completeness Checklist as shown in Appendix V. If an item is not checked off as being included in the submission, the report should include a detailed description and justification as to the reason behind the omission.

Note: The Completeness Checklist must be completed by the facility and included as a cover sheet to the Annual GCS Evaluation Report.

11.3.19 Summary of Groundwater Collection Methods

The report needs to summarize the procedures used to perform the monthly gauging of groundwater levels, quarterly vapor collection, and for the annual Groundwater BTEX, TPH and MTBE analysis

11.3.20 Summary of Groundwater Analytical Results and Interpretation

The report needs to provide a table for the monthly gauging of groundwater levels, quarterly vapor collection observations, and for the results from the annual groundwater BTEX, TPH and MTBE analysis or other constituents.

11.3.21 Presentation of Data

The Annual GCS Evaluation Report must contain:

- Table of static water levels recorded from all ODCP GCS monitoring wells.
- Semi-annual potentiometric maps (August & February) prepared from the monthly static water levels. The maps should be of sufficient scale and contour interval to depict groundwater flow direction.
- An identification of the upgradient (or background) monitoring well(s) within the ODCP groundwater monitoring network.
- A BTEX isoconcentration map generated from all wells sampled during annual monitoring event.
- A table of the quarterly vapor measurements from monitoring well headspace.
- Demonstration that vapor detection equipment has been calibrated properly to detect vapors from product stored at the facility and maintained in accordance with best industry standards and practices.
- A table of quarterly groundwater monitoring well visual inspection results from all ODCP wells.
- A summary table of the current groundwater analytical results as well as the results from each well for the previous 4 years.
- A table of analytical methods used.
- A table of analytical results.
- A table of field and trip blank results (if required).

11.3.22 Discussion of Results

The report must discuss the interpretation and conclusions of the monitoring. At a minimum, the conclusion should address:

- A suitability assessment of the existing groundwater monitoring system to immediately detect releases to the environment from the regulated tank(s). Well locations, well construction details (i.e. screen depth relative to groundwater table) and the groundwater potentiometric maps should be referenced when assessing the suitability. If any monitoring well has become unable to function as designed (e.g. silted in, damaged), a proposal for a replacement well installation must be provided in the GCS Annual Monitoring Report, or if the well has already been replaced, details of its construction should be provided.
- BTEX, TPH & MTBE concentrations in downgradient wells as compared to upgradient or background wells.
- A summary of findings consistent with the content included in the Annual GCS monitoring Report. Trends based on previous 5 years of historical data in the monitoring data should also be discussed. The conclusion should definitively address if there has been a release.
- Follow up actions, if any, resulting from the annual groundwater monitoring. If the data indicates the presence of petroleum (where previously not detected) or increases (where petroleum previously known to exist) the report should include recommendations for further assessment or remedial action.

Note: Section 210 of the Regulation stipulates that should any such observations or data indicate the presence of petroleum hydrocarbons in ground water, the results must be reported immediately to DEQ and to the local director or coordinator of emergency services.

11.3.23 Compliance Evaluation

Annual GCS Evaluation Reports are required to be submitted by July 1 of each year. The inspector should track the submittals for the facilities in their respective regions to ensure that a report for each facility is received. If a report is not received by July 1, the inspector should remind the facility of its obligation to submit a report no later than July 1.

Upon receipt of the Annual GCS Evaluation Report the inspector should first review the Completeness Checklist (Appendix V) to determine all items in the checklist are addressed. The content of the Annual GCS Evaluation Report must follow the format of this Completeness Checklist. This form is to be completed by the facility and included as a cover sheet for the Annual GCS Evaluation Report. If the checklist is not included or is not complete, the inspector should request a completed checklist before continuing with the review.

The inspector should review the Annual GCS Monitoring Report to verify all items in the checklist are adequately addressed or discussed, especially the conclusions portion of the report. It is at the discretion of the AST inspector in evaluating submitted Annual GCS Monitoring Reports whether consultation with the regional office remediation staff is warranted. Any deficient items should be documented in a letter to the facility.

Appendices

Note: Appendices A-T items are related primarily to the ODCP approval and review process. Later Appendices apply to the AST Program in general or as specified.

Appendix A OIL DISCHARGE CONTINGENCY PLAN (ODCP)

The Approval of an Oil Discharge Contingency Plan (ODCP) entails a review process that ensures the operator can protect environmentally sensitive areas and respond to the threat of a discharge within the shortest feasible time. The Formal Approval of the ODCP involves a qualitative review of the plan and a facility inspection to ensure that the operator can:

1. **Protect environmentally sensitive areas.** The plan must contain notification procedures to federal, state, and local agencies in the event of a spill (9VAC25-91-170.A.6.). The plan must identify resources that would be affected by the worst case discharge, establish priorities for protection and identify the means to protect these resources (9VAC25-91-170.A.13.). A system to detect a discharge to groundwater also must be in place at the facility (9VAC25-91-170.A.18.).
2. **Respond to the threat of or the actual discharge of oil.** The plan must describe the location and physical description of the facility (9VAC25-91-170.A.1. and 3.), must identify the operator (9VAC25-91-170.A.2.), and the tank inventory of regulated products stored at the facility (9VAC25-91-170.A.4. and 5.). The plan must identify specific areas at the facility where the worst case discharge could occur and affect off-site natural resources as well as municipal services (9VAC25-91-170.A.11. and 14.). The plan must show that the operator can conduct the appropriate notifications in the event of a discharge (9VAC25-91-170.A.6. and 7.).
3. **Contain, cleanup, and mitigate the effects of a spill within shortest feasible time.** The most commonly used means of control of a catastrophic discharge from an aboveground storage facility is secondary containment or remote impounding as required by the Uniform Statewide Building code, and 40 CFR 112.7, "Spill Prevention Control and Countermeasures (SPCC)". State Water Control Law (CODE § 62.1-44.34:15.B.) requires plans to provide for the use of "best available technology." The ODCP must show how the operator will limit the flow of oil and implement the response strategy and the facility operational plan for the worst-case discharge (9VAC25-91-170.A.11.). The operator must have private resources available for mitigation of the worst-case discharge (9VAC25-91-170.A.10.), and the plan must include a list of containment equipment to be used in discharge event (9VAC25-91-170.A.12.). The containment and recovery equipment listed or contracted must be appropriate to the size of the facility worst case discharge, and the personnel using the equipment must be trained in its use.

The detailed review of the contingency plan and facility inspection make up the review of the operator's ability to meet ODCP regulatory requirements. Upon receipt, the ODCP reviewer should use the ODCP Checklist and Appendices that follow to ensure all ODCP elements are addressed and to document review results. Sample format letters for incomplete application as well as notification of ODCP approval also follow.

Appendix B **GUIDELINES ON PREPARING AN OIL DISCHARGE CONTINGENCY PLAN (ODCP)**

In 1990, the General Assembly amended the State Water Control Law concerning the Discharge of Oil to State Waters. Article 11 of that statute states that all operators of oil storage facilities must have an Oil Discharge Contingency Plan filed and approved by the State Water Control Board before commencing operations. The ODCP Plan must provide assurance that the operator can take steps necessary to respond to an oil discharge and contain, cleanup, and mitigate the effects in the shortest feasible time. The Plan must also provide assurance of environmental protection in the event of a spill.

Note: Facilities having less than 25,000 gallons are exempt from ODCP requirements.

Note: The following list of 22 topics mimics the list in 9VAC25-91-10 *et seq.* and is provided to assist the preparer.

What should a Contingency Plan contain?

1. **The name of the facility, geographic location, and access routes from land and water.** An accurate map or detailed road directions noting the location of the facility is required. In order to facilitate the management of data concerning the location of the sites, an original 7.5-min quadrangle USGS topographic map locating the facility should be submitted with the plan. If a photocopy is sent instead, the operator should ensure that the quad name is noted and the copy is large enough (11" x 17") to include two axes, i.e., a corner of the map. If the facility is accessible by water the appropriate chart locating the facility should be included.
2. **The name of the operator of the facility including address and phone number.**
3. **A physical description of the facility including a plan of the facility showing, if applicable, oil storage areas, transfer location, control stations, above and below ground oil transfer piping within the facility boundary (and including adjacent easements and leased property), monitoring systems, leak detection systems, and location of any safety protection devices.** The expectation is that a site drawing(s) in addition to written description(s) will be submitted. It is important to have a complete description of the facility and a plan drawn appropriate to the size and complexity of the particular facility. Overlays or different plans may be used as needed. The location of dikes or other secondary containment structures surrounding tanks at the facility also should be included.
4. **A copy of the Safety Data Sheet (SDS) or its equivalent for each oil, or groups of oil with similar characteristics, stored, transferred, or handled at the facility. To be equivalent, the submission shall contain the following:**
 - a) **Generic or chemical name of the oil;**
 - b) **Hazards involved in handling the oil; and**
 - c) **A list of fire-fighting procedures and extinguishing agents effective with fires involving each oil or groups of oil demonstrating similar hazardous properties which require the same fire-fighting procedures.**

MSDS are often included in the ODCP. The Hazard Communication Standard (HCS) has been revised to align with the Globally Harmonized System of Classification and Labelling of Chemicals, commonly known

as GHS. As a result, effective June 1, 2016 MSDS have been replaced with Safety Data Sheets (SDS). However, as long as the stipulated information for each oil is part of the plan, any format will be acceptable.

5. **The maximum storage or handling capacity of the facility and the individual tank capacities, or in the case of a pipeline, the average daily throughput of oil.** If the ODCP is a component of part of a combined facility plan (Facility Response Plan, Spill Prevention and Countermeasures Plan, etc.), identification of the specific ODCP volume is necessary as other plans may include non-petroleum storage in the capacity calculation. When listing the tank capacities, the products contained in them also should be noted.
6. **A complete listing, including 24 hour phone numbers, of all federal, state and local agencies required to be notified in the event of a discharge.** Maintaining an inventory of agencies for reporting of releases is a routine procedure at most facilities. Phone numbers, especially for the local Fire Department or Hazardous Materials Response Team, must be current.
7. **The position title of the individual(s) responsible for making the required notifications and a copy of the notification check off list.**
8. **The position title, address, and phone number of the individual(s) authorized to act on behalf of the operator to implement containment and cleanup actions. This individual must be available on a 24 hour basis to ensure the appropriate containment and cleanup actions are initiated.**
9. **The position title of the individual(s) designated by the operator to ensure compliance with applicable federal, state and local requirements for disposal of both solid and liquid wastes during containment and cleanup of a discharge.**
10. **Identification and assurance by contract or other means acceptable to the Board, of the availability of private personnel and equipment necessary to remove to the maximum extent practicable the worst case discharge and to mitigate or prevent a substantial threat of such a discharge. This contract or agreement shall ensure a certain response within the shortest feasible time. The Board will accept a letter of understanding between the operator and the response contractor(s) which attests to this capability being readily available. Membership in a cleanup cooperative or other response organization is also acceptable. A listing of contractor or cooperative capabilities, including an inventory of the equipment and specification of the other information required by 9VAC25-91-170.A.12. must be included unless these capabilities are already on file with the Board.** The requirement to have equipment and personnel available to contain and cleanup an oil discharge is not unique to the Virginia AST Regulations. Waterfront facilities must comply with Coast Guard regulations as described in 33 CFR 154 where “each facility must have ready access to enough oil containment material and equipment to contain any oil discharged on the water from operations at that facility.” The EPA SPCC regulations require that facilities without secondary containment have a written commitment of manpower, equipment and materials for spill control and removal. NFPA 30 requires that equipment be available to prevent and minimize the escape of liquids in the event of accidental releases and to provide for the removal and disposal of the spilled material. Furthermore, the federal Oil Pollution Act of 1990 places the burden of planning and commitment of spill containment and cleanup on the discharger rather than the government.

When contracting a spill cleanup company it is important to ensure they are in compliance with OSHA regulations for the training of workers involved with the cleanup of hazardous materials (which may include petroleum). For cooperatives, workers responding to a discharge also will have to have appropriate OSHA certification.

When considering the issue of “shortest feasible time” for spill response, a number of factors will enter into the review process. The volume of product, the proximity of surface waters, and natural resources at risk are some of the factors that will be considered in the review of the plan. The effectiveness of measures taken by the operator to contain the worst case spill affects the response required from a cleanup contractor. Consequently, it may be advantageous to set up a means at the facility to implement a maximum containment effort rather than go to extraordinary measures to have a contractor on site immediately.

If the facility chooses to emphasize initial containment, the plan must ensure that all materials and equipment are readily available and facility personnel involved in the containment operations have the appropriate training.

During the 5 year renewal event of the ODCP, owners/operators that are relying on a contractor for abatement activities should reevaluate the contract and contractor’s ability to provide necessary services and update the contract as necessary.

11. **Assessment of the worst case discharge including measures to limit the outflow of oil, response strategy, and operational plan. For the purpose of this regulation, the worst case discharge is the instantaneous release of the volume of the largest tank on the facility (125% of the volume of the largest tank with multiple tanks within a single containment dike) during adverse weather conditions. Facilities shall take into consideration that due to hydraulic pressure of the release, the secondary containment will not contain this volume in its entirety. The worst case discharge for a pipeline shall be based upon the volume of a discharge calculated using the maximum pressure, velocity, elevation, largest pipe size, and pipeline location. The Board will consider submission of other worst case scenarios on a facility specific basis.** The primary purpose of this part of the plan is to explain the measures that will be taken to control the flow of oil involved in the worst case spill. The basic strategy for spill management is to keep as much of the product as possible from reaching the water, reduce the impact to natural resources, and implement an effective cleanup as soon as possible.

Historical data indicate that in the event of a catastrophic release of oil from an AST the product will escape the secondary containment due to the wave-like action of the product when the tank fails. Just how much product actually spills over the dike depends on the volume of the tank, type of product, and construction of secondary containment, among other things. In documented cases of tank failure, between 17% and 28% of the volume of the tank actually escaped over the dike wall. In order to forgo the need for site specific engineering studies, the Agency will accept a “slosh” volume of 22% of the capacity of the largest tank to be included as part of the worst case discharge scenario. This volume of product is the amount that should be used in planning the response strategy for outside the containment area.

Please note that “125% of the volume” refers only to calculating the baseline volume equivalent to the largest tank at the facility when the largest tank is one of several within a single diked area. The reasoning is that in the worst case scenario when the largest tank fails, the force of the product release has the potential to damage transfer piping and other tanks within the dike. This would therefore increase the size of the spill significantly. So, in determining the worst case spill for a multi-tank containment area, the following should be used:

Volume of the largest tank x 1.25 = worst case discharge

Volume of the largest tank x 0.22 (slosh factor) = amount expected to leave the secondary containment

For onshore facilities, adverse weather conditions means 10-year, 24-hour rain event which translates into approximately six inches of rainfall.

12. **Inventory of facility containment equipment including specification of quantity, type, location, time limits for gaining access to the equipment, and identification of facility personnel trained in its use.** In order to conduct initial containment the facility's equipment inventory must be significant to deal with the volume and type of products at the facility. The equipment and materials must be onsite and readily accessible for deployment to limit the outflow of oil according to the response strategy. The positions of the facility response personnel, rather than the individuals' names, should be listed. The statute requires that the operator respond to a discharge "in the shortest feasible time" and the stated response time for a cleanup contractor will be balanced with the response capabilities of the facility.
13. **Identification and location of natural resources at risk (including, but not limited to, surface waters as indicated on the applicable USGS quadrangle maps, groundwater, public water supplies, public and private water wells and springs, State or Federal wildlife management areas, property listed on the National Register of Historic Places and property listed on the National Register of Natural Landmarks), priorities for protection and means of protecting these resources.** When listing the "natural resources at risk" note that the State Water Control Law considers all waters of the state a natural resource and worthy of protection. The Water Quality Standards adopted by the Virginia Water Control Board state that "All state waters shall be maintained at such quality as will permit all reasonable, beneficial uses and will support the propagation and growth of all aquatic life, including game fish, which might be reasonably expected to inhabit them." Restated, even if there are no trout waters, wildlife refuges or other high profile "eco-areas" near your facility, the waters must nevertheless be protected, and the ODCP will be reviewed according to the official Virginia standards.

Furthermore, if the risk to natural resources is high in the event of a worst case discharge, the response strategy outlined for section/item #11 should be planned to accommodate these risks. The objective of the ODCP is to protect natural resources, and the development of this part of the plan is critical to the final approval of the plan.

- a) **In addition to the abovementioned requirements set forth in this subsection, the operator of a facility with an aggregate aboveground storage or handling capacity of 1,000,000 gallons or greater of oil shall conduct a groundwater characterization study within the geographic boundaries of the facility to be submitted as part of the contingency plan. The operator of such a facility shall utilize upgradient and downgradient monitoring wells to satisfy this requirement. At the time of a discharge, the operator of such a facility shall conduct further characterization of the groundwater as required by the Board.** The objective of the groundwater characterization is to establish an inventory of groundwater characteristics at the facility and baseline water quality data for assessment of possible contamination by oil/petroleum. In the event of a discharge, additional studies and possible groundwater remediation will be required. Sections of the DEQ AST Compliance Manual - Volume V contain detailed GCS guidelines.
- b) **For the purpose of satisfying the requirement to identify and locate natural resources at risk set forth in this subsection, the operator of a pipeline shall identify surface waters as indicated on the applicable USGS quadrangle maps, public water supplies, State or Federal wildlife management areas, wildlife refuges, management areas, sanctuaries, property listed on the National Register of Historic Places, and property listed on the National Register of Natural Landmarks which could reasonably be expected to be impacted by the discharge. At the time of a discharge the operator of a pipeline shall conduct a complete groundwater characterization study as required by the Board and**

identify other natural resources at risk including public and private wells or springs which could reasonably be expected to be impacted by the discharge. Because of the extensive nature of the pipelines, natural resource information should be listed by county in addition to the reference locations on the maps submitted.

- 14. Identification and location of any municipal services (water, sewage) at risk, notification procedures applicable, and means of protection of these services. The identification and location of all municipal services shall include those services for which official records are available. The operator of a pipeline shall determine which sections of the system are located in areas that would require an immediate response by the operator to prevent hazards to the public if a discharge occurred.** The information concerning the location of municipal services is available from the city, town or county where the facility is located. In the event of a catastrophic discharge, oil may flow across pavement or a parking lot and enter sanitary sewer manholes or stormwater drainage systems. The potential for explosion can be very high, especially when the spilled product is gasoline. It is also important to locate any public drinking water intakes downstream of the facility that could be impacted by an oil/petroleum discharge. Water wells used for a public water supply in the vicinity of the facility also should be located. A major oil/petroleum release to a wastewater treatment plant or to a water supply system can cause enormous damage and be extremely disruptive to a community. Virginia law holds the discharger of oil liable for damages to public and private property that occurs as a result of the spill.
- 15. If applicable, this plan shall include the facility's responsibility for responding to a discharge from a vessel moored at the facility and shall identify the sizes, types, and number of vessels that the facility can transfer oil to or from simultaneously.** It is important to delineate the level of responsibility when the plan is submitted and incorporate the response strategy in the event of a discharge.
- 16. A description of training, equipment testing, and periodic unannounced oil discharge drills conducted by the operator to mitigate or prevent the discharge, or the substantial threat of a discharge.** Spill prevention training, shutdown measures, testing schedules for facility equipment, and plans for spill drills should be outlined in the plan. Although regular safety meetings disseminate valuable information to company personnel, unannounced drills maintain a state of readiness for emergency response.
- 17. The facility's oil inventory control procedures. Facilities shall ensure that this control procedure is capable of providing for the detection of a discharge of oil within the shortest feasible time in accordance with recognized engineering practices and industry measurement standards.** For smaller facilities, inventory reconciliation such as measurements of incoming and outgoing product records is an appropriate inventory control. At large facilities, a measurement of product level and other means need to be specified in the plan.
- 18. Establishment of a system for early detection of a discharge to groundwater, utilizing upgradient and downgradient monitoring wells, or other groundwater protection measures acceptable to the Board. Operators subject to GCS requirements may utilize such wells to meet this requirement.** The purpose of this requirement is to ensure that any release, especially one that may not be readily observable, will be detected before there is major damage to groundwater. The installation of groundwater monitoring wells may be the most cost-effective means of accomplishing this, although some technologies currently being used in leak detection of UST systems may be effective for ASTs in some circumstances.
- 19. The procedures to be followed, upon detection of a discharge of oil, for testing and inspection of all tanks, piping and all oil transfer associated equipment that could reasonably be expected to be a point source for the discharge. These procedures shall be conducted within the shortest feasible time and in accordance with recognized engineering practices.** Specific testing procedures that are in accordance with recognized industry standards, such as those from API, will be acceptable for the ODCP Plan. If hydro-

testing is used, the facility plan must account for the disposal of the contaminated water used as the testing medium.

20. **The facility's preventive maintenance procedures applicable to the critical equipment of an oil storage and transfer system as well as the maximum pressure for each oil transfer system. The term "critical equipment" shall mean equipment that affects the safe operation of an oil storage and handling system.** The reason for having these measures required as part of the ODCP is that testing and inspection of equipment and systems may be neglected. The failure to observe good maintenance practices is the cause of many oil spills. VADEQ has placed a strong emphasis on prevention of oil pollution from the storage facility and regulation reflects this philosophy. AST regulations include formal testing for inventory control measures, shutdown and overfill prevention procedures, and integrity testing of tanks and piping.
21. **A description of the security procedures used by facility personnel to avoid intentional or unintentional damage to the facility.** Pipe guards, bumpers, vehicle barriers and curbing are examples of such inherent physical protections to prevent damage.
22. **A post discharge review procedure to assess the discharge response in its entirety.** Much can be learned from a "de-briefing" session following an oil discharge, whether it is a major or minor incident. The review of the response to even minor spills is an excellent way to "de-bug" problems. In the event of a major discharge, the entire ODCP will be extensively reviewed to determine its effectiveness.

Appendix C OIL DISCHARGE CONTINGENCY PLAN (ODCP) FORMAL REVIEW

Facility Completeness Checklist

****The content of the ODCP should follow the format of this Completeness Checklist. It is requested that this form is to be completed by the facility and included as a cover sheet to the ODCP.****

Statement of Purpose

State law requires the review and approval of an Oil Discharge Contingency Plan (ODCP) for regulated facilities as a condition of operation. Regulation 9VAC25-91-10, *et seq*, states that the plan must address concerns for the effect of oil discharges on the environment as well as considerations of public health and safety. The ODCP will ensure that the operator of the facility can take such steps as are necessary to protect environmentally sensitive areas; to respond to the threat of an oil discharge; and to contain, cleanup, and mitigate an oil discharge within the shortest feasible time.

- Key: N/A Not Applicable
 [X] Item addressed in the ODCP
 [] Item not addressed in the ODCP
 Italicized - recommended, but not required by regulation

Facility Name: _____ Facility Representative _____

Facility ID #: _____ Review Date: _____

Facility Plan Contents

- [] 1. Facility Location
 [] Name
 [] Location Address
 [] Directions by land
 [] Directions by water
 [] *Topographic map* [] original [] copy
 Notes: _____

- [] 2. Operator Information
 [] Name (may be corporation)
 [] *Name of facility contact*
 [] Mailing address
 [] Operator phone number
 [] Facility phone number (if different than above)
 Notes: _____

- 3. Facility description
 - Site plan includes:
 - Oil storage areas
 - Transfer locations
 - Control stations
 - Above and below ground piping
 - Monitoring systems
 - Leak detection systems
 - Safety protection devices
 - Secondary containment structures*
 - Written physical description

Notes: _____

- 4. SDS, or equivalent, for each oil or group of oil

Product	SDS: Yes	No
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>

Notes: _____

- 5. Storage information
 - Maximum storage capacity
 - Individual tank capacity
 - If facility is a pipeline, average daily throughput
 - Product stored in each tank*

Notes: _____

- 6. 24-hour notification phone numbers
 - Federal - National Response Center
 - State
 - DEQ Regional Office
 - VDEM
 - Local
 - Fire and Building Official
 - Police
 - Rescue Squad
 - Municipal or other services

Notes: _____

7. Notification Procedures
 Position or title of individual(s) responsible
 Checklist
Notes: _____

8. Containment and cleanup notification (24-hour)
 Title of individual responsible
 Address
 Phone Number
Notes: _____

9. Compliance responsibility
 Title of individual responsible
Notes: _____

10. Private personnel and equipment available
 Contract, agreement or cooperative with: _____

 Shortest feasible time assessment
Response time: _____
Distance to facility: _____

 Capabilities/equipment inventory
Containment: Quantity
 Type
 Location
 Personnel trained to use

Removal: Quantity
 Type
 Location
 Personnel trained to use

Notes: _____

11. Worst case discharge

Assessment

Plan

No secondary containment

Slosh: _____gallons

Other worst case

Measures to limit outflow

Interim containment measures

For a pipeline, worst case discharge

Response strategy: Natural Resources

Operational Plan

Notes: _____

12. Facility Containment/Recovery Equipment

Capabilities/equipment inventory

Containment: Quantity

Type

Location

Personnel trained to use

Removal: Quantity

Type

Location

Personnel trained to use

Notes: _____

13. Natural resources at risk

	Plan			Priority/Mean of Protection
	Yes	No	N/A	
Surface waters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Groundwater	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Public water supply	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Public water well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Private water well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Springs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Wildlife Management Areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Natural Landmarks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Historic Places	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

a. Groundwater Characterization Study (only for 1MM+ gallon facilities)

Date Submitted: _____

Date Reviewed: _____

Under remediation Yes No

Notes/Issues: _____

b. Interstate or intrastate pipeline (risk to be developed upon discharge event)

14. Municipal or other services at risk

	Plan Identified			Means of Protection
	Yes	No	N/A	
Sanitary sewer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Storm drainage system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Water supply system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Other	_____			_____

15. Vessel mooring

Product received from vessel Yes No

Product delivered to vessel Yes No

Type of vessel(s) mooring _____

Capacity of vessel(s) _____

Number of vessel transfers at one time _____

16. Facility training and testing

Description of training:

Operation Maintenance

Spill prevention OSHA

Other _____

Facility response equipment testing schedule

Discharge drills/exercises

Announced Unannounced

Notes: _____

17. Inventory control

Monthly reconciliation

Inventory records

Notes: _____

18. Leak Detection System
Notes: _____

19. Locating a leak (all tanks, piping, and transfer equipment)
 Visual inspection procedures
 Testing procedures by industry standards
 Water disposal for hydro test (if used)
 Other
Notes: _____

20. Preventive maintenance
 Critical equipment (storage and transfer)
 Tanks Piping
 Pumps Valves
 Loading rack other (specify)
 Maximum pressure for transfer system
Notes: _____

21. Facility security
 Fencing
 Valves locked
 Pump(s) starter(s) secured
 Site accessible to authorized personnel only
 Transfer connections blanked/capped when not in use
 Facility lighting
Notes: _____

22. In-house post-discharge review plans
Notes: _____

Notes and other comments:

Appendix D ODCP SUBMITTAL & REVIEW PROCESS

9VAC25-91-170.B. & C. requires operators to submit a complete ODCP application form (Appendix D) meeting all regulatory requirements no later than 90 days prior to commencement of operations. **The operator must receive ODCP approval before commencing operations.** Each approved plan will require a renewal approval 60 months from the initial approval date.

New Applications that include fees should be sent to: Department of Environmental Quality
Office of Financial Management
P.O. Box 1104
Richmond, VA 23218

Note: ODCP renewal applications should be sent directly to the appropriate Regional Office.

All fees are processed by the Office of Financial Management. All original documentation (application & plan) excluding the application fee will be forwarded to the appropriate DEQ Regional Office for administrative and technical review. As part of the review process, a site visit may be warranted.

Applications that do not include fees (e.g. ODCP renewals and updated plans) should be sent directly to the appropriate DEQ Regional Office for uploading into ECM as well as the administrative and technical review.

The following form letters in these appendices may be used for incomplete submittals:

- No Application
- No Fee
- Insufficient Fee
- No Fee and No Application
- No Application and Insufficient Fee
- No Plan

If the application form and plan are administratively complete, a technical review will be performed. If deficiencies are noted or if clarification is needed, the reviewer should articulate any outstanding issues to the owner/operator. Approval of the ODCP should be communicated using the form letter provided in Appendix F.

If facilities subject to the ODCP requirements subsequently close tanks which bring oil/petroleum storage capacity below 25,000 gallons, the procedures for ODCP Revocation/Rescission in Appendix N apply.

Appendix E **REFUND AND OVERPAYMENT OF ODCP APPLICATION FEES**

An operator may obtain a refund of application fees within 30 days of receipt of the plan if the plan has not yet been approved. The operator must request a refund in writing.

Refunds for overpayments of fees may be made if the operator has tallied the facility storage capacity incorrectly, included tanks or products not regulated by the program, or submitted duplicate fees. Refunds for overpayments are not dependent on the date of submittal. The operator must request a refund for overpayment in writing.

A regional staff memorandum confirming the circumstances of the refund or overpayment and the operator's written request are sent to DEQ-OSRR. OSRR will forward a memorandum to the Office of Financial Management containing:

1. The reason for the refund, the amount and appropriate citations from 9VAC25-91-10 *et seq.* justifying the circumstance for a refund;
2. The ODCP program cost code; and
3. The facility name, mailing address, telephone number and contact person to whom the refund is to be sent.

A copy of the operator's written request for the refund should be attached to the memorandum.

Appendix F ODCP APPROVAL LETTER

(Date)

(Operator Contact Name/Company)

(Operator Address)

RE: OIL DISCHARGE CONTINGENCY PLAN APPROVAL

Dear M _____:

This letter serves as approval of the Oil Discharge Contingency Plan submitted and reviewed according to 9VAC25-91-170 *et seq.* for the following facility:

_____ .

The approval is effective until expiration of the current plan on (60 months from issuance date). You are required to submit an updated plan to the DEQ for review and approval not less than 90 days prior to this expiration date. All notifications of changes, submissions and updates of the plan required by the above mentioned regulation shall be directed to the Virginia Department of Environmental Quality, _____ Regional Office, _____, VA _____.

Be advised that in the event of an oil discharge, the facility operator must immediately implement all applicable provisions of the plan as well as all relevant requirements of Article 11 of the State Water Control Law (VA CODE 62.1-44.34:14-23).

If you have any questions regarding the contingency plan, contact (*AST inspector*) at _____.

Sincerely,

Petroleum Program Manager

Appendix G NO ODCP APPLICATION LETTER

(Date)

(Operator Contact Name)

(Company)

(Operator Address)

RE: Incomplete Oil Discharge Contingency Plan Submittal

Dear M_____:

We have received the Oil Discharge Contingency Plan for the facility located in_____. However, no application was enclosed with the plan. In order for the plan to be reviewed in its entirety, it will be necessary for you to submit a completed and notarized application form according to Virginia Regulation 9 VAC 25-91-170 B.

Please submit the completed form by_____to:

Virginia Department of Environmental Quality

(Insert appropriate Regional Office address and contact)

A copy of the application form is enclosed. If you have any questions, contact _____ at_____.

Sincerely,

DEQ ODCP Reviewer

Appendix H NO ODCP FEE LETTER

(Date)

(Operator Contact Name)

(Company)

(Operator Address)

RE: Oil Discharge Contingency Plan Fee Submittal

Dear M_____:

We have received the Oil Discharge Contingency Plan for the_____ facility located in_____. However, our records show that no fee was enclosed with the plan. In order for review of the plan to proceed, it will be necessary for you to submit the correct fee amount as required by Virginia Regulation 9 VAC 25-91-60.

Based on the volume of _____ gallons of oil/petroleum storage reported on the application form, the fee due for this size facility is \$_____. The check, draft or postal money order should be made payable to Treasurer, Commonwealth of Virginia sent to the following by (date) :

Virginia Department of Environmental Quality
Office of Financial Management
P.O. Box 1104
Richmond, VA 23218

In order for your fee to be processed promptly we request that you attach to the check a photocopy of this letter or a cover letter in reference to the "Oil Discharge Contingency Plan Program" and the facility identification number_____.

If you have any questions please contact _____ at_____.

Sincerely,

DEQ ODCP Reviewer

Appendix I **INSUFFICIENT ODCP FEE**

(Date)

(Operator Contact Name)

(Company)

(Operator Address)

RE: Oil Discharge Contingency Plan Fee Submittal

Dear M _____:

We have received the Oil Discharge Contingency Plan for the _____ facility located in _____. However, our records show that the fee amount of \$ _____ which was submitted with the plan is insufficient as required by Virginia Regulation 9VAC25-91-60.

Based on the volume of gallons of oil/petroleum storage reported on the application form, the fee due for this size facility is \$ _____. In order for the DEQ to continue processing your application, a check, draft or postal money order for the difference (\$____) should be made payable to Treasurer, Commonwealth of Virginia and sent to the following by (date) _____:

Department of Environmental Quality
Office of Financial Management
P.O. Box 1104
Richmond, VA 23218

In order for your fee to be processed promptly we request that you attach to the check a photocopy of this letter or a cover letter in reference to the "Oil Discharge Contingency Plan Program" and the facility identification number _____.

If you have any questions please contact _____ at _____.

Sincerely,

DEQ ODCP Reviewer

Appendix J NO ODCP FEE AND NO APPLICATION

(Date)

(Operator Contact Name)

(Company)

(Operator Address)

RE: Incomplete Oil Discharge Contingency Plan Submittal

Dear M _____:

We have received the Oil Discharge Contingency Plan for the _____ facility located in _____. However, no application was enclosed with the plan. In order for the plan to be reviewed in its entirety, it will be necessary for you to submit a completed and notarized application form according to Regulation 9VAC25-170.B. A copy of the application form is enclosed.

In addition, our records show that no fee was enclosed with the plan. Based on the volume of _____ gallons of oil/petroleum storage reported in the plan, the fee due for this size facility is \$_____ as required by Virginia Regulation 9VAC25-91-60. The check, draft or postal money order should be made payable to Treasurer, Commonwealth of Virginia.

In order for the plan review to proceed, the application and the fee should be sent to the following by (date) _____:

Department of Environmental Quality
Office of Financial Management
P.O. Box 1104
Richmond, VA 23218

In order for your fee to be processed promptly we request that you attach to the check a photocopy of this letter or a cover letter in reference to the "Oil Discharge Contingency Plan Program" and the facility identification number _____.

If you have any questions, please contact _____ at _____.

Sincerely,

DEQ ODCP Reviewer

Appendix K NO ODCP APPLICATION AND INSUFFICIENT FEE

(Date)

(Operator Contact Name)

(Company)

(Operator Address)

RE: Incomplete Oil Discharge Contingency Plan Submittal

Dear M _____:

We have received the Oil Discharge Contingency Plan for the _____ facility located in _____. However, no application was enclosed with the plan. In order for the plan to be reviewed in its entirety, it will be necessary for you to submit a completed and notarized application form according to Regulation 9VAC25-90-50.C. A copy of the application form is enclosed.

In addition, our records show that the fee amount of \$_____ which was submitted with the plan is insufficient as required by Virginia Regulation 9VAC25-91-60. Based on the volume of _____ gallons of oil/petroleum storage reported in the plan, the fee due for this size facility is \$_____ as required by Virginia Regulation 9VAC25-91-60. The check, draft or postal money order for the difference (\$_____) should be made payable to Treasurer, Commonwealth of Virginia.

In order for the plan review to proceed, the application and the fee amount listed above should be sent to the following by _____ (date) _____:

Department of Environmental Quality
Office of Financial Management
P.O. Box 1104
Richmond, VA 23218

We also request that for the fee to be processed promptly that you attach to the check a photocopy of this letter or a cover letter in reference to the "Oil Discharge Contingency Plan Program" and the facility identification number _____.

If you have any questions, please contact _____ at _____.

Sincerely,

DEQ ODCP Reviewer

Appendix L NO ODCP PLAN

(Date)

(Operator Contact Name)

(Company)

(Operator Address)

RE: Incomplete Oil Discharge Contingency Plan Submittal

Dear M_____:

We have received an application and fee amount of \$ _____ for the Oil Discharge Contingency Plan program for the facility located in _____. However, our records show that no plan was received with the application and fee.

In order for the review process to proceed, the plan must be sent to the following by _____ (date) _____:

Virginia Department of Environmental Quality
(insert appropriate Regional Office address and contact)

Be advised that until an Oil Discharge Contingency Plan is actually received by the Department, as operator of the above mentioned facility, you cannot be considered in compliance with Virginia Regulation 9 VAC 25-90-10 et seq., Oil Discharge Contingency Plans and Administrative Fees for approval for your reference enclosed are copies of the regulation and Guidelines for the Preparation of the Oil Discharge Contingency Plan.

We also request that you include with the plan a photocopy of this letter or a cover letter in reference to the "Oil Discharge Contingency Plan Program" and the facility identification number _____.

If you have any questions, please contact _____ at _____.

Sincerely,

DEQ ODCP Reviewer

Appendix M ODCP INFORMAL FACT FINDING CONFERENCES

General Information. ODCP applicants will be given one opportunity to contest denial or modification decisions. Pursuant to the requirements of Virginia Code 2.2-4019, the Department of Environmental Quality ("DEQ" or the "Agency") will:

- Provide applicants the opportunity for an in-person consultation-conference (herein after referred to as the "meeting") with Agency staff for the consideration of ODCP denial or modification decisions;
- Provide applicants reasonable notice of the meeting procedures and the time, date and place where the meeting will be held;
- Permit applicants to have (a) representative(s) attend the meeting and allow applicants and/or their representative(s) to present facts, data, arguments and any other proof in connection with the ODCP application;
- Inform applicants of any information in the Agency's possession that may be used to make an adverse decision;
- Provide the applicant with a prompt, written decision specifying the reasons the approval will be modified or denied.

Initiation of Meeting. Applicants will be notified in writing that they may contest an ODCP modification or denial decision. The written notice the Agency sends to the applicant will (1) inform applicants that they may meet with Agency staff; (2) inform applicants that they will be permitted to have (a) representative(s) attend the meeting; (3) inform applicants that they and/or their representative(s) may present facts, data, arguments and any other proof in connection with their application; (4) inform applicants that any meeting may be tape-recorded; (5) inform applicants that they may obtain a copy of their ODCP file; (6) require that applicants notify the agency in writing of their intention to contest the modification or denial decision; (7) require that applicants provide a written summary of the issues they intend to contest; and (8) inform applicants of filing deadlines.

Meeting. All persons attending the meeting will note their presence by signing an attendance form. An Agency employee to whom the Director has delegated the authority to approve ODCPs will preside over the meeting. Agency staff or their designees will briefly present the basis for the proposed modification or denial. The applicant and/or the applicant's representative(s) then will present any information or argument. Agency staff or their designees, the applicant and/or the applicant's representative(s), and the presiding officer will then present any follow-up questions. All documents presented during the meeting will be marked and numbered.

The applicant may submit follow up information after the reconsideration meeting if permitted by the presiding officer, in his or her sole discretion. If no follow up information is to be submitted, the presiding officer will proceed to render a written decision. If additional information is to be submitted, the decision will follow review of that information. If information is not submitted timely, the presiding officer will not consider the information in rendering its decision. In the written decision, the presiding officer will inform the applicant of the reason for denial or modification of ODCP approval and provide the notice required by Supreme Court Rule 2A:2. The presiding officer's decision will be sent to the applicant by certified mail.

Deadlines. Where an applicant has elected to attend a meeting, the Agency may establish reasonable deadlines by which the applicant must schedule the meeting. The presiding officer will seek to render the decision within 90 days of the date of the meeting or alternatively, the date he or she receives additional information submitted by the applicant after the meeting.

Appendix N ODCP REVOCATION

According to 9VAC25-91-170.I, an ODCP approval may be revoked if, after notice and opportunity for a hearing, it is determined that:

1. Approval was obtained by fraud or misrepresentation;
2. The plan cannot be implemented as approved;
3. A term or condition of approval of this chapter has been violated; or
4. The facility is no longer in operation.

Revocation in any of the circumstances listed in items 1 through 3 above would occur through an enforcement action. However, if a facility is no longer in operation (item 4), i.e., ceases to store or handle oil, a non-adversarial revocation may be undertaken. For the purposes of program implementation, a facility is considered no longer in "operation" if it is no longer subject to this regulation due to a reduction of aboveground aggregate oil storage or handling capacity below 25,000 gallons.

In the instance of a non-adversarial revocation, the facility operator initiates a written request for revocation of the ODCP. Although it is generally presumed that it would be in the operator's interest to have ODCP approval revoked if the facility ceases operations or is no longer subject to the requirements, the request is made at the operator's discretion. For example, an operator may choose to close all or some of the facility tanks while retaining the approved ODCP for future oil storage or handling operations.

ODCP approval revocation involves procedures that verify cessation of oil storage operations or reduction of aboveground aggregate capacity, and documents facility conditions to ensure that the ODCP has been implemented in the event of an oil discharge. The facility operator subsequently receives a letter from the regional staff (see appendices that follow) stating the ODCP approval has been revoked and listing the circumstances that would subject the facility again to ODCP requirements. Investigations of discharge cleanup, site remediation or possible violations of terms or conditions of the ODCP or Article 11 are conducted independently of the ODCP approval revocation process.

Tank Closure. A facility's aboveground aggregate oil storage capacity is reduced for the purposes of ODCP approval revocation when tanks are permanently closed and documented according to AST registration requirements. This documentation also includes tanks no longer used to store oil, but still in service at the facility for storage of other commodities. Tanks brought back into service for oil storage after having been permanently closed must comply with performance standards of 9VAC25-91-10 *et seq.*

If tanks used to store non-oil commodities are brought back into service for oil storage, they would subsequently be counted toward facility aboveground aggregate capacity and the facility may again (25,000 gallons or greater aggregate) be subject to ODCP requirements.

ODCP Application Rescission. If a facility operator requests the ODCP approval revocation because the facility ceased operations or is documented to be no longer subject to the requirements and the ODCP is under review but not approved, the request becomes one for rescission. Although the plan has not been approved, the facility is nonetheless subject to the ODCP requirements. The procedures for documentation of facility conditions and verification of aboveground aggregate storage capacity (i.e., ODCP Facility Revocation

Inspection Form) are carried out for application rescission. It is not necessary for the operator to sign an ODCP Revocation Hearing Waiver for an ODCP application rescission.

Revocation Inspection. Once the operator has made a request for ODCP approval revocation or application rescission, DEQ Central Office reviews all documentation of tank closure and advises the regional staff of the AST registration status. If it is necessary for a site visit by DEQ staff, the regional staff visits the facility to:

- Verify the facility aboveground aggregate capacity reduction;
- Determine if the ODCP has been implemented for actual discharges and provide documentation of facility conditions;
- Provide assistance to the operator and answer questions regarding oil spill response and remediation; and,
- Obtain the operator's signature for ODCP Revocation Hearing Waiver, if applicable.

The regional staff to document facility conditions and aboveground aggregate storage capacity at the time of the ODCP approval revocation completes the ODCP Revocation Inspection Form (attached). If the facility has been inspected as part of ODCP review and approval within a year prior to the initiation of the revocation process, the facility visit and inspection may be waived at the discretion of the regional management. If a facility visit and inspection is not conducted as part of the revocation process, then a memorandum summarizing facility conditions as determined by previous inspections should be attached to the completed ODCP Revocation Inspection Form.

Revocation Hearing Waiver. If approval of an ODCP is to be revoked, the facility operator has the right to a hearing in accordance with the State Water Control Law, 62.1-44.34:15.(D), Code of Virginia and 9VAC25-91-170.I. However, in the case of an operator-initiated revocation due to facility or tank closure, a formal hearing is not warranted and the operator should sign the ODCP Revocation Hearing Waiver Appendix Q). The regional staff should prepare a copy of the waiver form and have it available for signature at the facility visit and inspection. If an inspection is not conducted, the form is sent to the operator with an explanation and a request for its return. If the operator has requested rescission of the ODCP application because the plan has not been approved, ODCP Revocation Hearing Waiver form is not applicable.

Compliance and Enforcement. Until an ODCP approval has been revoked, or the application rescinded, the operator is subject to the requirements for plan implementation in the event of an actual or threatened oil discharge. If, during the revocation inspection, it is determined a discharge has not been reported or cleaned up, the operator must take action to mitigate the discharge and proceed with cleanup. The regional office conducts cleanup direction and oversight, including site characterization and corrective action. Any compliance or enforcement action undertaken as a result of investigations for reporting or cleanup violations, failure to implement an ODCP, or operating without an ODCP is done independent of the ODCP revocation process.

Aboveground aggregate storage capacity reduction may occur at a facility that is required to submit a plan but that has not complied with ODCP requirements. A facility inspection is conducted in this circumstance and the ODCP Revocation Inspection Form completed. Regardless of facility conditions or status of potential cleanup, a facility operating without an ODCP is referred to the Office of Enforcement for possible action. The referral should include a copy of the ODCP Revocation Inspection Form and a memorandum summarizing any previous notification of regulatory requirements and the operator's response.

File Documentation. Files for facilities that have had ODCP approval revoked or application rescinded are maintained and the ID numbers remain in the database. The inspection form, documentation letter to operator and the Hearing Waiver Form (if applicable) should be maintained in the appropriate Regional Office file.

The following forms and letters in these appendices are used during the ODCP revocation process:

- ODCP having received Formal Approval
- ODCP under review
- ODCP Facility Revocation Inspection Form
- ODCP Revocation Hearing Waiver Form

Appendix O **REVOCAION OF FORMALLY APPROVED ODCP**

(Date)

(Operator Contact Name)

(Company)

(Operator Address)

(Facility Name)

(Facility Address)

RE: OIL DISCHARGE CONTINGENCY PLAN (ODCP) REVOCATION

Facility ID _____

Dear M _____:

This letter serves as revocation of the approval of the Oil Discharge Contingency Plan for the following facility:

(Company/Facility Name, Facility Location)

This revocation is in response to registration documentation for aboveground tanks located at the above-referenced facility. If the total aggregate aboveground storage capacity at this facility increases to 25,000 gallons of oil or more, the submittal of a new ODCP, application, and respective fee is required as a condition of operation.

If you have any questions concerning the ODCP program, please contact *(regional ODCP/AST planner)* at *(regional telephone number)*.

Sincerely,

DEQ Regional Director

cc: OSRR

Appendix P **RESCISSION OF ODCP APPLICATION**

(Date)

(Operator Contact Name)

(Company)

(Operator Address)

(Facility Name)

(Facility Address)

RE: OIL DISCHARGE CONTINGENCY PLAN (ODCP) APPLICATION RESCISSION

Facility ID No. _____

Dear M _____ :

This letter serves as rescission of the application for approval of the Oil Discharge Contingency Plan for the following facility:

(Company/Facility Name, Facility Location)

This rescission is in response to registration documentation for aboveground tanks located at the above-referenced facility. If the total aggregate aboveground storage capacity at this facility increases to 25,000 gallons of oil or more, the submittal of a new ODCP, application, and respective fee is required as a condition of operation.

If you have any questions concerning the ODCP program, please contact (regional ODCP/AST planner) at (regional telephone number).

Sincerely,

DEQ Regional Program Manager

cc: OSRR

Appendix Q ODCP REVOCATION FORM – HEARING WAIVER

OWNER/OPERATOR: (Name) _____

(Company Name) _____

(Address) _____

I hereby agree to the revocation of the Oil Discharge Contingency Plan, Facility No. _____ and waive my right to a hearing in accordance with Section 62.1-44.34:15(D) of the Code of Virginia and in accordance with 9VAC25-91-170. This revocation is made because the facility (has been closed/no longer has sufficient aboveground storage capacity to require an ODCP). I sign this agreement with the understanding that should the total aggregate capacity at this facility increase to 25,000 gallons or more of oil, the submittal of a new ODCP, application, and respective fee is required as a condition of operation.

SIGNED: _____

TITLE: _____

DATE: _____

Appendix R LEAK DETECTION NOTIFICATION FORM

Facility ID No. _____

Page ____ of ____

	Tank #		Tank #		Tank #		Tank #		Tank #	
Release Detection Method:	Tank	Pipe	Tank	Pipe	Tank	Pipe	Tank	Pipe	Tank	Pipe
Groundwater Monitoring										
Vapor Monitoring										
Interstitial monitoring (briefly describe system type including RPB type)										
Visual Monitoring for Elevated ASTs										
SIR										

"I certify the information concerning the leak detection method that is provided above is true to the best of my belief and knowledge."

Installer Name _____ Signature _____

Date _____

Installer Position _____

Company _____

Operator Name _____

Appendix S **AST STATISTICAL INVENTORY RECONCILIATION (SIR) CHECKLIST**

SIR can provide an alternative method for leak detection of AST tanks and piping. Key components of a qualifying SIR program include: 1) an SIR Provider certified by a qualified independent third party; 2) a facility-specific SIR protocol developed by the SIR Provider to meet Virginia's regulatory standards; 3) DEQ's approval of a facility ODCP that includes evidence of all of the above; and 4) a facility operator and staff who understand and follow the facility-specific SIR protocol faithfully.

SIR PROTOCOLS AND CERTIFICATIONS ARE INCLUDED AS PART OF THE FACILITY ODCP REVIEW AND MUST BE APPROVED BY DEQ.

- The facility operator must use an SIR Provider who has obtained independent third-party certification of its statistical analytical methods. Virginia has adopted EPA's "Results of U.S. EPA Standard Evaluation" for leak detection of USTs as the standard format for documenting such third-party certification.
- As part of the facility ODCP to be approved by DEQ, the facility operator must submit: 1) a copy of the third-party certification of the SIR Provider's analytical method; 2) a copy of the SIR implementation protocol developed by the SIR Provider for that particular facility; and 3) a copy of the SIR Provider's performance certification that the facility-specific implementation protocol and the statistical analytical method combine to meet Virginia's regulatory requirements for leak detection.
- Changing SIR providers or protocols, or changing to another method of leak detection requires resubmittal of the facility ODCP indicating this change to DEQ.

INVENTORY DATA COLLECTION IS PERFORMED AND RECORDED DAILY BY THE FACILITY OPERATOR ACCORDING TO SIR PROVIDER SPECIFICATIONS.

- Inventory data gathering and record keeping must be performed daily by the facility operator, exactly in accordance with the SIR Provider's facility-specific implementation protocol. This requirement applies to all provisions of the protocol including accurate meter calibration, accurate temperature correction, site operator training in SIR, etc.

STATISTICAL ANALYSIS IS PERFORMED AND REPORTED MONTHLY BY THE SIR PROVIDER.

- The SIR Provider must use the exact SIR methodology that was certified by the independent third party and must perform a review of inventory records through statistical analysis every month.
- SIR monthly analytical reports from the SIR Provider must meet DEQ guidelines for content and format which include for each AST: location ID, tank ID, tank capacity, MDL standard for the tank, product stored, loss trend with minimum detectable leak, meets monthly standard (Pass or Fail, if neither, it is Inconclusive), and remarks.

RECORDS ARE MAINTAINED BY THE FACILITY OPERATOR AND READILY AVAILABLE FOR INSPECTION.

- Copies of the third-party certification for the SIR Provider's analytical method and the facility-specific SIR implementation protocol must be kept on file at the facility until DEQ is notified either that the facility has been closed or that the SIR protocol or provider has changed.
- The SIR Provider's performance certification must be kept on file at the facility until DEQ is notified either that the facility has been closed or that the SIR protocol or provider has changed.
- All inventory records and statistical analysis reports must be kept either on file at the facility, readily available for inspection for five years, or provided to DEQ along with the notification of facility closure.

ANY SIR RESULT OF "FAIL," OR ANY TWO CONSECUTIVE SIR RESULTS OF "INCONCLUSIVE," CONSTITUTES A THREAT OF A DISCHARGE. THE FACILITY OPERATOR MUST REPORT ANY THREAT OF A DISCHARGE, AS WELL AS ANY ACTUAL DISCHARGE OF OIL IMMEDIATELY TO DEQ.

Appendix T APPROVAL APPLICATION FOR FACILITY OIL DISCHARGE CONTINGENCY PLAN

Please type or print in ink all items and sign the certification section. This form must be completed and notarized for all aboveground oil storage facilities subject to the provisions of 9VAC25-91-170.B. This application will not be accepted unless the Department of Environmental Quality (DEQ) has received the plan and required fee.

Fees are as follows for facilities with an aggregate aboveground maximum oil storage or handling capacity of:

- (a) 25,000 gallons up to and including 100,000 gallons = \$718;
- (b) 100,001 gallons up to 1,000,000 gallons = \$2,155; and
- (c) 1,000,000 gallons or greater = \$3,353.

The check, draft or postal money order shall be made payable to the Treasurer of Virginia and, with the plan and this completed application, shall be sent to:

Department of Environmental Quality
Office of Financial Management
P.O. Box 1104, Richmond, VA 23218
(Location address: 1111 East Main St., Suite 1400, Richmond, VA 23219.)

There is no additional fee assessed to change the operator of a facility oil discharge contingency plan. If a facility operator changes subsequent to the filing or approval of the contingency plan, this application must be completed by the new facility operator and sent to the respective DEQ regional office. A list of DEQ regional offices and their addresses may be obtained from Department of Environmental Quality, Office of Spill Response and Remediation, P.O. Box 1105, Richmond, VA 23218 or on the web at: www.deq.virginia.gov.

This facility has a maximum aboveground storage or handling capacity of _____ gallons.

Please check one:

- (1) Is this an initial application for approval of a contingency plan? ___ (yes) or ___ (no)
- (2) Is this a certification of change of facility operator of a previously submitted or approved plan? ___ (yes) or ___ (no), with an identification number of: FC-_____ - _____. ***Please refer to instructions above.***

This facility is located in _____ County (or) _____ City

Name and mailing address of operator	Name and location address of facility
_____	_____
_____	_____
_____	_____

Telephone number of operator _____ Telephone number of facility _____
Fax number of operator _____ Fax number of facility _____

Reviewed by: _____ Date Reviewed: _____

Appendix U **GROUNDWATER CHARACTERIZATION STUDY (GCS) REPORT FORMAT**

I. Surface/Subsurface Site Characterization

1. Facility Base Map(s)
2. Public and Private Water Well Map (including references)
3. Site Topography Map
4. Monitoring Well Location Map

II. Groundwater Characteristics

1. Regional Geology Summary
2. Site Geology Summary
 - 2.1 Boring Logs
 - 2.2 Cross Section
3. Monitoring Well Construction Summary
4. Abandonment of Boring Locations Summary (if any)
5. Monitoring Well Development Summary
6. Aquifer Characteristics Summary

III. Soil and Groundwater Quality Evaluation

1. Soil Sample Collection Summary
 - 1.1 Soil Gas Survey Summary and Table
2. Soil Analytical Sample Results Summary
 - 2.1 Table of Methods Used
 - 2.2 Table of Analytical Results
 - 2.3 Isoconcentration Map
3. Groundwater Level Measurements Table
4. Groundwater Analytical Sample Results Summary
 - 4.1 Table of Methods Used
 - 4.2 Table of Analytical Results
 - 4.3 Isoconcentration Map

Appendix A. Soil Analytical Data including Chain-of-Custody

Appendix B. Groundwater Analytical Data including Chain-of-Custody

Appendix C. Quality Assurance Project Plan

Appendix V GROUNDWATER ANNUAL GCS MONITORING REPORT FORMAT

DEQ Technical Review Checklist

Report Date _____

DEQ FAC ID _____

Facility Name _____

Facility Representative _____

Facility Address _____

*The content of the Annual GCS Monitoring Report must follow the format of this Completeness Checklist. This form is to be completed by the facility and included as a cover sheet for the Annual Report. *

I. **Annual Report Summary**

Summary of the following technical findings:

_____ Status of groundwater monitoring program during the prior calendar year

_____ Suitability of ODCP monitoring wells to immediately detect releases from the AST

_____ Interpretation of data specifically addressing if a release has occurred

_____ Required (and/or anticipated) actions for the upcoming sampling year

II. **Monthly gauging of GCS monitoring wells**

_____ Summary of measurement procedures

_____ Table of static water levels recorded from monitoring wells

III. **Quarterly Groundwater and Vapor Monitoring**

_____ Summary of groundwater and vapor collection procedures

_____ Table of vapor measurements from monitoring-well headspace

_____ Table of groundwater monitoring well visual inspection results

IV. **Annual Groundwater Quality Evaluation**

_____ Summary of groundwater collection methods

_____ Summary of groundwater results and interpretation (must address each item)

- GCS well network analysis (including any change recommendation
- A BTEX and a TPH isoconcentration map
- Data discussion to assess if a release has occurred/is occurring.

_____ Groundwater potentiometric map (February & August)

_____ Table of analytical methods used

_____ Table of analytical results

_____ Table of field and trip blank results

Appendix A – Groundwater Laboratory Data including Chain-of-Custody forms

Appendix B – Laboratory Quality Assurance Review

Appendix C – Laboratory Quality Assurance Review & VLAP certification documentation

Appendix W **AST INSPECTION CHECKLIST**

See next page.



**DEQ Form 7542-AST
ABOVEGROUND STORAGE TANK
INSPECTION CHECKLIST**

Facility ID #: _____	Inspection Date: _____ / _____ / _____ <small>MM DD YYYY</small>
Inspector: _____ <small>(printed name)</small>	_____ <small>(signature)</small>
Facility Representative: _____ <small>(printed name)</small>	

<u>I. FACILITY INFORMATION</u>		Facility has variances: <input type="checkbox"/> Yes <input type="checkbox"/> No
		Facility is registered: <input type="checkbox"/> Yes <input type="checkbox"/> No
Facility consumes heating oil (>660 - ≤ 5K), asphalt, breakout tank(s): <input type="checkbox"/> Yes <input type="checkbox"/> No		Facility is engaged in the resale of oil: <input type="checkbox"/> Yes <input type="checkbox"/> No
Facility Name: _____		
Facility Address: _____		
City: _____	County: _____	Zip Code: _____
Contact Person: _____		Phone#: () _____
Owner Name: _____		
Owner Address: _____		
City: _____	County: _____	Zip Code: _____
Operator Name: _____		
Operator Address: _____		
City: _____	County: _____	Zip Code: _____
Contact Person: _____		Phone#: () _____
ODCP#: FC- _____	# of ASTs: _____	Pollution Prevention: <input type="radio"/> N/A
Total AST capacity: _____ Gallons	Registration _____ Gallons	ODCP _____ Gallons P/P _____ Gallons
Comments: _____		

<u>II. APPARENT COMPLIANCE STATUS WITH 9 VAC 25-91-10 et seq.</u>		
Facility appears to be in compliance: <input type="checkbox"/> Yes <input type="checkbox"/> No (If NO, indicate issue(s) of apparent non-compliance below.)		
<u>Apparent non-compliance issues:</u>		
◇ Registration (<input type="checkbox"/> incorrect data <input type="checkbox"/> expired <input type="checkbox"/> closure <input type="checkbox"/> notification)	◇ ODCP	◇ Inventory Control
◇ Piping (<input type="checkbox"/> cathodic protection <input type="checkbox"/> pressure test)	◇ Leak Detection (<input type="checkbox"/> piping <input type="checkbox"/> tank)	◇ Secondary Containment
◇ Daily Inspections	◇ Weekly Inspections	◇ Training Program
◇ Safe Fill & Shutdown	◇ Gauges	◇ Markings
◇ API 653 (<input type="checkbox"/> internal <input type="checkbox"/> external <input type="checkbox"/> re-inspection)	◇ Alarm	◇ Emergency Shutdown
◇ Performance Standards (<input type="checkbox"/> newly installed <input type="checkbox"/> retrofitted <input type="checkbox"/> brought into use <input type="checkbox"/> RPB <input type="checkbox"/> corrosion evaluation)		◇ GCS
Reporting Discharge		
Comments: _____		

Facility ID# - Enter the six numbers assigned by DEQ Central Office in the electronic filing system.

Inspection Date – Print the date the inspection starts in the following format: two characters printed for the month, i.e., 01 etc., two characters for the day, i.e., 30 etc.; and for characters for the year, i.e., 2000.

Inspector – Print the name of the inspector, senior inspector if more than one, (first, middle initial, and last name), followed by the signature.

Facility Representative – Print the name of the person representing the facility present during the inspection/site contact.

I. FACILITY INFORMATION

I. Facility Information block (top right) has a list of the following categories: variances; facility registered; facility not in the resale of oil; and facility with heating oil > 660 ≤ 5K gallons consumed on the premises, asphalt, and breakout tanks. Mark the \diamond characters with a check to indicate yes or no as appropriate for each category. These categories are to remind the inspector of the applicability of requirements and that these categories have a definite impact on how the inspection is conducted.

Facility, owner, and operator – Print the information in the appropriate space. If the facility information is not consistent with the DEQ 7540 – AST form, indicate discrepancies in the comments section. The registration information is the official information. If the registration is incorrect, then implement standard procedure to have the form amended and signed by the owner or authorized representative. The end result achieves consistency and accurate information.

of ASTs – Count ASTs subject to registration requirements only.

Pollution Prevention – Mark the \circ N/A with a check to indicate that the pollution prevention requirements do not apply to the facility, i.e., < 25K capacity.

ODCP# - Enter the designated 6 digit number; if facility capacity is less than 25K, enter NA in first two spaces after FC-.

Total AST capacity – Enter the total aggregate capacity that corresponds to the registered capacity (noted on the registration form). Enter the capacity as defined in the ODCP if applicable or enter N/A. The capacity total may be different for pollution prevention because of exclusions, i.e., do not count heating oil <5K, asphalt, and breakout tanks. Enter the capacity calculated for P/P and if different, indicate the AST(s), capacity and exclusion in the comments, i.e., #3 AST – 700 gallons heating oil excluded. If the inspection denotes inaccuracy in registered capacity the owner must amend the registration form.

II. APPARENT COMPLIANCE STATUS WITH 9 VAC 25- 91-10 et seq.

Check the appropriate \diamond for any discrepancies noted during the inspection.

Facility appears to be in compliance – Mark the \diamond characters with a check to indicate yes or no as appropriate. “Yes” indicates that all of the items addressed are apparently in compliance, to the inspector, with the regulation. “No” indicates that there is apparently a discrepancy with one of the regulatory requirements and the appropriate item(s) in section Apparent non-compliant issues: must be marked.

Apparent non-compliant issues – Mark the \diamond characters with a check to indicate the issue of non-compliance. Each issue is a specific section or item within the checklist. Note in the comment section any explanation or elaboration of the apparent non-compliance issue when needed.

NOTE: The Tank# must be consistent in the columns throughout the form. Generally, check circles or boxes to indicate compliance for a “yes” reply to the question posed by the line item. Because a blank box can signify either “no,” “partial compliance,” “attempted but failed,” or “not applicable,” ensure that details regarding noncompliance, partial compliance or attempted compliance which failed are noted in the Comments section. Details regarding incomplete records should be noted in the Comments section. Indicate whether the records for the period reviewed were complete, incomplete, or altogether missing (no records); and note the month(s) and year(s) of records reviewed.

Comments: _____

DEQ Form 7542-AST

Facility ID #: _____

Inspection Date: ____ / ____ / ____

Informal

Formal

III. INVENTORY CONTROL (IC)

NA

Records reviewed indicate: Tank Tank Tank Tank Tank Tank Tank All Tanks
 # _____ # _____ # _____ # _____ # _____ # _____ # _____ # _____ - # _____

Tank capacity: _____

Inventory control required:

IC records kept for each AST:

Inventory reconciled monthly:

IC records kept for 5 years:

____ / ____ / ____ to ____ / ____ / ____
MM DD YYYY MM DD YYYY

Reconciliation exceeds standard:

Comments: _____

IV. PIPING

NA

Records reviewed indicate: Tank Tank Tank Tank Tank Tank Tank All Tanks
 # _____ # _____ # _____ # _____ # _____ # _____ # _____ # _____ - # _____

Pressure Test:

Date of test: ____ / ____ ____ / ____ ____ / ____ ____ / ____ ____ / ____ ____ / ____ ____ / ____ ____ / ____

Method:

Hydrostatic tested 150%:

Inert gas 110%:

API 570:

Method Identified:

Class identified:

System identified:

Inspector certified:

Inspector API#: # _____ # _____ # _____ # _____ # _____ # _____ # _____ # _____

Other Method

Approved:

(describe in comments)

Comments: _____

III. INVENTORY CONTROL (IC)

Mark the character with a check if this section does not apply to the facility. Note the reason in the comments section, i.e., variance applies, AST and piping off ground, and proceed to section IV.

Records reviewed indicate: Enter the number/character referenced on the registration form in the Tank# _____. If the records at the facility are not consistent with what is indicated on the registration form either of the records must be amended for consistency and accuracy. Ensure tank number references are consistent throughout the checklist and that each tank can be identified on site. Note the tanks that are on the checklist that need to be registered and initiate procedures to amend the registration form. If all of the tanks at the facility are being inspected and applicable for inventory control, the "All Tanks" may be marked with the numbers of the tanks, i.e., #1-#12 or a-d etc.

Tank Capacity: Enter tank capacity as noted on the registration form. The capacity is verified in the records review and markings on the AST. Discrepancies should be noted in the comments section. Inconsistency in records and registration are to be resolved by amending the registration form or facility records. Ensure tank capacity references are consistent throughout the checklist.

Inventory Control required: Mark the character with a check if inventory control is required for the individual tank.

IC records kept for each AST: Mark the character with a check if the records reviewed indicate that inventory control records are kept for each tank.

Inventory reconciled monthly: Mark the character with a check if the records reviewed indicate that inventory control records are reconciled monthly for each tank.

IC records kept for 5 years: Mark the character with a check if the records reviewed indicate that inventory control records are kept for 5 years for each tank. Enter the date of the records reviewed, i.e., 06/30/1993-06/30/1998.

Reconciliation exceeds standard: Mark the character with a check if the records reviewed indicate a significant variation of inventory in excess of 1% of the storage capacity of each individual AST.

IV. PIPING

Records reviewed indicate: Enter the number/character referenced on the registration form in the Tank# _____. If records at the facility are not consistent with what is indicated on the registration form either of the records must be amended for consistency and accuracy. Ensure tank number references are consistent throughout the checklist and that the piping for each tank can be identified on site. Note the tanks/piping that are on the checklist that need to be registered and initiate procedures to amend the registration form. If all of the piping at the facility are being inspected and applicable for inventory control, the "All Tanks" may be marked with the numbers of the tanks, i.e., #1-#12 or a-d etc.

Pressure test: Mark the character with a check if the records reviewed indicate that a pressure test was conducted. Enter the date the test was conducted.

Method: Mark the applicable character with a check if the records reviewed indicate a pressure test was conducted, i.e., hydrostatic test 150%, inert gas test 110%. Records for API 570 test method must indicate the method, class and identify the individual piping system. The API 570 test method must be certified by a certified API 570 inspector. Enter the inspector's number in the appropriate tank column.

Comments: _____

DEQ Form 7542-AST

Facility ID #: _____

Inspection Date: ____ / ____ / ____

Informal

Formal

V. LEAK DETECTION (LD) - TANK

NA

Records and field review indicate:	Tank # _____	Tank # _____	Tank # _____	Tank # _____	Tank # _____	Tank # _____	Tank # _____	All Tanks # _____ - # _____
Method:								
Visual:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GW LD well:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interstitial:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vapor:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: (approved method)	_____	_____	_____	_____	_____	_____	_____	_____
Alternative method (SIR):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monitored:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Daily:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weekly:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monthly:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recorded:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Operational:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Maintained:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:	_____							

VI. LEAK DETECTION (LD) - PIPING

NA

Records and field review indicate:	Tank # _____	Tank # _____	Tank # _____	Tank # _____	Tank # _____	Tank # _____	Tank # _____	All Tanks # _____ - # _____
Method:								
Visual:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GW LD well:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interstitial:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vapor:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (approved method):	_____	_____	_____	_____	_____	_____	_____	_____
Alternative method (SIR):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monitored:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Daily:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weekly:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monthly:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recorded:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Operational:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Maintained:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:	_____							

DEQ Form 7542-AST

Facility ID #: _____

Inspection Date: ____/____/____

Informal

Formal

VII. SECONDARY CONTAINMENT (SC)

NA

Records reviewed indicate:	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #	All Tanks # - #
PE certified SC:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Date certified:	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___
PE recertification:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Date certified (≤ 10 year):	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___
Comments:	_____							

VIII. DAILY INSPECTIONS (DI) NA

Records reviewed indicate:	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #	All Tanks # - #
DI documented in facility record:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge observed:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discharge reported:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:	_____							

IX. WEEKLY INSPECTIONS (WI) NA

Records reviewed indicate:	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #	All Tanks # - #
Operator / Authorized representative conducts inspection:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Checklist:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contains 1-13 items in reg.:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Maintained at facility:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Signed and dated: (by facility inspector)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Developed ≤ 90 days:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:	_____							

DEQ Form 7542-AST

Facility ID #: _____

Inspection Date: ____/____/____

Informal

Formal

X. TRAINING PROGRAM (TP)

NA

TP conducted by operator Yes No

TP conducted by 3rd party Yes No

Records reviewed indicate:

New facility: Yes No
(TP within 6 mos. of operation):
____/____/____

Not in Resale facility: Yes No
(TP within 6 mos. of 6/24/98):
____/____/____

Existing facility: Yes No
(TP ≥ 6 mos. of 6/30/93):
____/____/____

Training program for daily inspection: Yes No

Training program for weekly inspection: Yes No

Facility record contains basic information: Yes No

Hazard recognition: Yes No

TP reflects current conditions: Yes No

Safety recognition: Yes No

Inspectors trained prior to insp.: Yes No

Daily inspection procedures: Yes No

Weekly inspection procedures: Yes No

Hazardous reaction procedures: Yes No

AST evaluation procedures: Yes No

Comments: _____

XI. PERSONNEL TRAINING (PT)

NA

PT conducted: Yes No

Records reviewed indicate:

New facility: Yes No
(PT within 6 mos. of operation):
____/____/____

Not in Resale facility: Yes No
(PT within 6 mos. of 6/24/98):
____/____/____

Existing facility: Yes No
(PT ≥ 6 mos. of 6/30/93):
____/____/____

PT conducted at least every 3 years: Yes No ____/____/____

PT documented in facility record: Yes No ____/____/____

Comments:

DEQ Form 7542-AST

Facility ID #: _____

Inspection Date: ____/____/____

Informal

Formal

XII. SAFE FILL AND SHUTDOWN

NA

Records and field review indicate:	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #	All Tanks # - #
Safe Fill Procedure:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shutdown Procedure:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transfer Procedure:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Receipts Authorized:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fill valves secured:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transfers Monitored:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Continually:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Automatically:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manually:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vehicle Spill Containment system:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adequate capacity: (40 CFR 112)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Automatic Shutdown (if installed):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Re-directs flow:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tested prior to receipt:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Date of records reviewed:	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___
Tank gauge:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Visible:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Indicates level or quantity:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calibrated annually:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Date of calibration:	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___	___/___/___
Tanks Markings								
Clear:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Located at gauge:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Storage capacity:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tank ID:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: _____

DEQ Form 7542-AST

Facility ID #: _____

Inspection Date: _____ / _____ / _____

Informal

Formal

(APPLIES ONLY TO ≥ 1 MILLION GALLON AST/FACILITY)

XIII. API 653 INSPECTIONS

NA

Records and field review indicate:	Tank	Tank	Tank	Tank	Tank	Tank	Tank	All Tanks
	# _____	# _____	# _____	# _____	# _____	# _____	# _____	# _____ - # _____
Extension(s) granted:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Records of 653 inspection:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
API 653 certified w/#:	# _____	# _____	# _____	# _____	# _____	# _____	# _____	# _____
Date certified:	///	///	///	///	///	///	///	///
Initial external conducted:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(5 years date not in resale)	///	///	///	///	///	///	///	///
Initial internal conducted:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3 or 5 yrs date if not in resale)	///	///	///	///	///	///	///	///
Re-inspection conducted:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(external w/in 5 years)	///	///	///	///	///	///	///	///
Re-inspection conducted:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(internal w/in 10 yrs)(<12k excluded)	///	///	///	///	///	///	///	///

XIV. ALARM SYSTEM

NA

Attended during transfer operation:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unattended during transfer ops:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
High level alarm:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Visual:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Audible:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Activates Shutdown:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Automatic:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Test prior to receipt recorded:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Control station:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Audible signal:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Warning light:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Failsafe:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Date of records reviewed:	///	///	///	///	///	///	///	///

XV. EMERGENCY SHUTDOWN

NA

Procedure recorded:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Training of personnel:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

XVI. GCS

NA

Approved: Yes No

Annual report submitted: Yes No

Comments: _____

DEQ Form 7542-AST

Facility ID #: _____

Inspection Date: ____ / ____ / ____

Informal

Formal

(APPLIES ONLY TO ≥ 1 MILLION GALLON AST/FACILITY)

XVII. PIPING

○ NA

Records and field review indicate: Tank Tank Tank Tank Tank Tank Tank All Tanks
 # # # # # # # # ____ -
 # # # # # # # # ____

Buried piping:

Cathodic protection (CP) installed:

 CP operational:

 CP recorded:

Off-ground piping:

Corrosion protection:

Piping through berm:

 Protected: (corrosion and damage)

Comments: _____

(APPLIES ONLY TO NEW, RETROFITTED OR BROUGHT BACK INTO USE)

XVII. PERFORMANCE STANDARDS

○ NA

Records and field review indicate: Tank Tank Tank Tank Tank Tank Tank All Tanks
 # # # # # # # # ____ -
 # # # # # # # # ____

Newly installed:

 Date: / / / / / / / / / / / / / / / /

Retrofitted:

 Date: / / / / / / / / / / / / / / / /

Brought into use:

 Date: / / / / / / / / / / / / / / / /

AST built to applicable standards:

AST strength tested before use:

Bottom in direct contact w/
soil:

RPB installed:

Corrosion protection of AST:

CP survey conducted:

CP needed:

CP installed:

CP operational:

CP recorded:

Building permit obtained:

AST built to applicable standards:

 Date: / / / / / / / / / / / / / / / /

Comments: _____

Facility ID #: _____

Inspection Date: ____ / ____ / ____

Informal

Formal

(APPLIES ONLY TO ≥ 1 MILLION GALLON AST/FACILITY)

XIX. REGISTRATION INFORMATION

The current registration information should be reviewed prior to the inspection. The table should be completed to confirm registration information corresponds with observed site conditions.

	Tank #	Tank #	Tank #	Tank #	Tank #	Tank #
Capacity						
Substance Stored						
Tank Material						
Piping Material						
Foundation						
Roof Type						

Comments: _____

(APPLIES ONLY TO ≥ 1 MILLION GALLON AST/FACILITY)

XX. GROUNDWATER MONITORING NETWORK (as applicable)

Prior to the site visit the Groundwater Characterization Study (GCS) & most recent Groundwater Annual Report should be consulted. During the site visit each monitoring well should be physically evaluated and its location compared with submitted mapping. List in the comments section all monitoring wells that were not physically inspected and why an inspection was not or could not be performed. List in the comments section any deficiencies that were observed.

	Well ID #	Well ID #	Well ID #	Well ID #	Well ID #	Well ID #
Well casings vertical & stable						
Concrete pads in sound condition						
Well protected and secure (caps & locks)						
Wells labeled and correspond to mapping						
Well locations correspond with mapping						

Comments: _____

DEQ Form 7542-AST

Facility ID #: _____

Inspection Date: ____/____/____

Informal

Formal

XXI. OIL DISCHARGE CONTINGENCY PLAN

Prior to the site visit the most recent Oil Discharge Contingency Plan should be consulted. During the site visit the following items should be verified to be in accordance with the ODCP. List any deficiencies observed in the comments.

Section 3. Facility description: Are the facility tanks, pumps, piping, secondary containment, response equipment and storm found to be consistent with the facility description?

Yes

No

Comments: _____

Section 5. Storage information: Are tank identification numbers stenciled on the tanks and in agreement with both tank registration and ODCP numbers?

Yes

No

Comments: _____

Section 7. Notification Procedures: Was the facility representative familiar with the contents and purpose of the ODCP?

Yes

No

Comments: _____

Section 11. Worst case discharge: Is the assessment of the worst case discharge (quantity, flow path) consistent with site observations? Is the response strategy to such a spill logical?

Yes

No

Comments: _____

Section 12. Facility Containment/Recovery Equipment: Is the facility's equipment inventory sufficient to deal with the volume and type of products at the facility in the shortest feasible time?

Yes

No

Comments: _____

Section 13. Natural resources at risk: Are all of the natural resources at risk adequately identified?

Yes

No

Comments: _____

Appendix X AST CLOSURE CHECKLIST

Facility Name: _____
Facility I.D. No.: _____
Facility Location: _____
PC No. (If applicable): _____
Form 7540-AST received date _____
Closure report received date _____
Closure documentation entered into Database date _____

Reviewer's Name: _____

Date: _____

CLOSURE REPORT COMPLETENESS

Check if the following was included in the closure report:

- Documentation of liquid/sludge vapor removal.
- Documentation of pipe disconnection from AST.
- Copies of the laboratory results of sample(s) and test(s) for oil/petroleum hydrocarbons.
- Photographs indicating sampled area(s).
- Site map indicating location of closed AST(s) and associated piping and sample locations.
- Documentation that Tank has been properly vented.
- Documentation that Tank has been labeled as permanently closed.
- Copy of local building/code permit.
- Local Building official inspection (date _____)
- DEQ Inspection, if necessary (date _____)

Notes: _____

ENVIRONMENTAL DATA REVIEW

Check applicable based on the review of closure report/documentation:

- Soil analytical sample data provided for the tank(s), piping, and dispenser(s) being closed.
- Chain of Custody documentation provided.
- Sample locations are adequate to detect the presence of a release from the tank(s), piping, and dispenser(s) being closed.
- The depth of samples are given.

Notes: _____

OPERATORS SEEKING ALTERNATIVE TO THE SOIL SAMPLING REQUIREMENT

- Records of monthly leak detection monitoring for past 12 months.
- Demonstration that the facility or AST has operated a DEQ approved leak detection system.

CONCLUSIONS

Check as applicable:

- Soil TPH values indicate a release.
- Ground water TPH or BTEX values indicate a release.
- No release indicated, closure complete.
- Case referred for PC. Closure was incomplete and additional information is required.

Notes: _____

Appendix Y FACILITY INSPECTION SAFETY

AST Inspector Safety Considerations:

- I. Vehicle Accidents
 - a. Notify State Police for all accidents involving state vehicles.
 - b. Carry vehicle safety equipment (flares, first aid kit, spare tire, etc).
 - c. Report all vehicle accidents in accordance with the inspector's regional reporting standard operating procedures.
- II. Pedestrian accidents on-site or with state vehicles
 - a. Notify State Police for all accidents involving state vehicles.
 - b. Use safety vests for increased visibility.
 - c. Avoid being in the line of traffic.
 - d. Use state vehicle to block tank pad.
- III. Slip, Trip, and Fall
 - a. Beware of slippery surfaces at fueling facilities.
 - b. Open sumps are trip and fall hazards.
- IV. Sun and heat exposure
 - a. Use sunscreen provided by Regional Office.
 - b. Drink adequate amounts of water.
- V. Petroleum vapors and liquids
 - a. Breathing vapors should be avoided.
 - b. Wearing gloves and proper clothing to cover exposed skin.
- VI. Confined Spaces
 - a. DO NOT ENTER confined spaces such as submersible pump manways, open trenches and tank pits.
- VII. Insect bites and stings
 - a. Beware that certain insects may be attracted to aromatic chemicals such as gasoline and perfume.
 - b. Beware that some spiders are attracted to the damp cool sumps at stations.
 - c. Use first aid kit for bites and stings.
- VIII. Hostile Facility Personnel
 - a. Avoid confrontational situations.
 - b. Do not enter a facility when owner or representative refuses you.
 - c. Either use police as an escort or mail the RCA if a hostile situation arises.
- IX. Personnel Protection
 - a. Steel toe footgear
 - b. Cell phone
 - c. Work/disposable gloves
 - d. Reflective safety vest
 - e. Ear Plugs
 - f. Safety Glasses
- X. Report all personal accidents/incidents in accordance with DEQ accident/incident reporting procedure.