# COMMONWEALTH OF VIRGINIA

**Department of Environmental Quality**

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**Subject:** Division of Land Protection and Revitalization Guidance Memo LPR-SRR-2018-2A
**RISK BASED INSPECTION STRATEGY (RBIS) FOR UNDERGROUND STORAGE TANKS (USTS)**

**To:** Regional Petroleum Program Managers

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**Copies:** Regional Directors, Deputy Regional Directors, Betty Lamp, Russ Ellison, Alicia Meadows

**Summary:**
This guidance explains the Risk Based Inspection Strategy (RBIS) for Underground Storage Tanks (USTs). This strategy is intended to evaluate alternative targeting methods for establishing annual inspection schedules.

**Electronic Copy:**
Once effective, an electronic copy of this guidance is 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/PetroleumProgram/GuidanceRegulations.aspx

**Contact Information:**
Please email Renee Hooper at renee.hooper@deq.virginia.gov or (804) 698-4018 with any questions regarding the application of this guidance.

**Certification:**
As required by Subsection B of § 2.2-4002.1 of the 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.*

# Risk Based Inspection Strategy (RBIS) for the Underground Storage Tank Program

## Purpose and Background

Congress passed the Energy Policy Act of 2005, which requires that all regulated underground storage tank (UST) facilities be inspected every three years. Since that time, DEQ has inspected UST facilities on a three-year cycle, using a risk-based inspection targeting approach when scarce resources impeded DEQ's ability to inspect every facility within the three years. The success of this approach is reflected in rising significant operational compliance[1] (SOC) rates over the years since the three-year inspection cycle was implemented. However, compliance rates have leveled out in the past several years. In the interest of continuing to improve UST facility compliance, DEQ is revising its risk-based inspection strategy to increase the inspection frequency for high risk facilities while maintaining, as possible, current inspection rates for medium and low risk facilities. This revised strategy recognizes that low risk facilities may be inspected at a lower frequency if resources are insufficient to maintain the three-year cycle.

## Elements of the RBIS – General

In general, there are several risk-based factors to be considered when classifying a facility's risk to the environment and human health. The Compliance History (CH) criterion encompasses a review of a facility's recent (previous two inspection cycles) compliance record. Tank characteristics (TC) looks at the age and condition of the tanks at the facility. Environmental Sensitivity (ES) involves all potential environmental impacts the UST facility poses; Agency Exposure/Sectors (AES) relates to varying different environmental / ownership / media (air, water, land) issues; and, Environmental Excellence (EE) considers the UST facility status attained under the DEQ Environmental Excellence Program (if applicable.)

### Compliance History (CH)

Compliance history is the cornerstone of the RBIS. DEQ evaluates a facility's compliance record over the last two inspection cycles to judge the risk posed by the facility. Facilities that have been out of compliance for high priority requirements such as release detection, corrosion protection and release reporting and investigation requirements are generally considered high risk facilities due to the risk posed to the environment by these noncompliant tanks.

### Tank and Piping Characteristics (TPC)

The Tank and Piping condition criterion assesses the risk posed by the tank and the connected piping. Older tanks, as well as certain piping types, are more vulnerable to leaks. Tanks and/or piping with corroded or damaged components may also be more likely to leak.

### Environmental Sensitivity (ES)

Environmental sensitivity can include a wide range of considerations, some of which, change over

1 See EPA's memorandum titled Significant Operational Compliance (SOC) Performance Measures for the Underground Storage Tank (UST) Program and attachments dated September 30, 2003,

time. Potential examples of ES for USTs are: shallow and deep drinking water wells located nearby, i.e., groundwater use areas; risk receptors (e. g. basements or underground parking garages); wellhead protection areas; karst, fractured rock, or West Toe aquifer area (VRO, SWRO, BRRO); air non-attainment areas for VOCs; environmental justice (EJ); population density; proximity to national/state parks; flood plains; proximity to surface waters; endangered/threatened species; etc.

**Agency Exposure/Sectors (AES)**
The Agency Exposure/Sectors factor is intended to provide additional flexibility to the agency and ROs in the risk-based, decision making process. AES helps address unexpected or unique situations when compliance resources are mandated or warranted for a specific situation. For example, DEQ may choose to classify all of the facilities associated with a new owner as "high risk" if inspections at several of the owner's facilities indicate a potential culture of noncompliance or a company-wide lack of understanding of UST compliance requirements.

**Environmental Excellence (EE)**
Another potential factor recognizes UST facilities that participate in the Virginia Environmental Excellence Program (VEEP). Those include facilities that: go beyond regulatory requirements; have good compliance records; and, have active environmental management system (EMS) programs. Those facilities receiving VEEP certification at the E3 or E4 levels should have compliance histories that qualify them as low risk facilities which could potentially lead to a reduced on-site inspection frequency.

## Application of RBIS

Using data provided by DEQ's comprehensive environmental database (CEDS), DEQ will assign a numerical value to each specific criterion selected to evaluate risk. For example, a facility that fails to investigate or report a suspected release during the last two inspection cycles may be assigned 3 points. Based on the total numerical value assigned to each facility, the facility will be classified as either high risk, medium risk or low risk. (See Appendix 1 for the current numerical model) DEQ regional staff will inspect high risk facilities at least once every two years. Medium risk facilities will be inspected at least once every three years. It is DEQ's intention to inspect all facilities within 3 years as resources allow; however, DEQ recognizes that low risk facilities may fall into a 4 or 5-year cycle, depending upon available resources. In no case, should any facility wait more than 5 years for inspection. DEQ staff may also perform random record reviews at low risk facilities, as needed.

Because this analysis will be run each year, facilities may come onto the list or drop off the list each cycle as criteria change. For example, a facility previously classified as "high risk" may have shown an improved compliance status during one or more of the previous inspection cycles or the facility owner may have replaced older tanks with new.

**Note: DEQ recognizes that a neutral numerical system may not fully capture the risk posed by a particular facility. A RBIS approach based on numerical criteria relies heavily on data already available in CEDS. Regional inspectors may have additional knowledge of a facility through inspection experience that could alter a facility's risk category. DEQ inspection staff**

**may reclassify a facility based on such knowledge but should document the file with the appropriate rationale before doing so.**

## Process

The annual RBIS process will work as follows:

- Each July, DEQ-OSRR will generate the list of inspections due.

- By August, DEQ-ROs will identify facilities on the list that are already scheduled for inspection in the current FY and provide OSRR with a list of those facilities (they will be deleted from the new FY list).

- The inspection plan for the upcoming federal fiscal year (October 1 – September 30) will be finalized by OSRR and provided to each regional office, preferably by September 1st.

## Evaluation of RBIS performance

This RBIS strategy is designed to tailor inspection frequencies to facilities depending upon the risk posed by that facility to human health and the environment with the ultimate goal of maximizing benefit to the environment by improving compliance rates. DEQ will evaluate success with this goal by monitoring SOC rates at midyear and end of year. DEQ may also evaluate resolution time for any noncompliance found at a facility to measure progress. DEQ will regularly review these measures to evaluate whether new or additional metrics would be more informative.

# Appendix 1

## Risk Based Inspection Model

**Point Assessment:**

1 = a CP violation (tanks or piping) within last 2 inspection cycles

1 = Groundwater use greater than 50%*

2 = Release Detection violation (tanks or piping) within last 2 inspection cycles

2 = Tank is more than 20 years old

3 = Failed to report/investigate a suspected release w/n last 2 inspection cycles**

*Currently, only 'groundwater use' can be captured to address the "nearby receptor" criteria; however, the program will start capturing additional data that can be rolled into the queries to better refine the criteria.

**This criterion will be captured using file reviews for violations identified before January 2018 and CEDS fields for violations identified post January 2018.

**Risk Categories**

High Risk = 5 or more points

Medium Risk = 2 - 4 points

Low Risk = 0- 1 Point

Depending upon the number of facilities that fall into the high risk category and available inspection resources, a region can drop facilities with a total point count of 2 down to the low risk category if further review indicates that it's appropriate to do so.

**Inspection Frequency**

High Risk = Inspect every 2 years

Medium Risk = Inspect every 3 years

Low Risk = Inspect no later than every 5 years