Explanation of proposed changes to the Leak and Release reporting and Corrective Action requirements in the Delaware *Regulations Governing Aboveground Storage Tanks*

(3/2016)

The Delaware Department of Natural Resources and Environmental Control (DNREC), Tank Management Section (TMS) is in the process of drafting changes to the *Regulations Governing Aboveground Storage Tanks* (The Regulations).

To improve the clarity of the leak and release reporting and corrective action requirements of The Regulations several changes have been made:

A. To make the process of leak and release reporting and ensuing corrective action requirements easier to understand all leak and release reporting and corrective action requirements will consolidated in Part E of The Regulations. Currently leak and release reporting requirements are found in Part A, Section 8 and corrective action requirements are found in Part E.

B. The current Part E of The Regulations will be stricken in its entirety and updated to be consistent with the Delaware *Regulations Governing Underground Storage Tank Systems*.

The following document is provided for ease of understanding the proposed changes to the Delaware *Regulations Governing Aboveground Storage Tanks.*

Comments on the proposed Part E should be sent to Jill Williams Hall via email: jill.hall@state.de.us

This document is for use in ease of comparison with the draft Delaware *Regulations Governing Aboveground Storage Tanks*: Leak and Release Reporting and Corrective Action Requirements for ASTs

- A. Current Part A: Section 8 will be entirely deleted. (see below)
- B. Current Part E: Part E will be entirely deleted and rewritten.. (see below)
- C. DRAFT Part E: Leak and Release Reporting and Corrective Action Requirements
- D. DRAFT Part A. Section 2: Definitions

A.

Part A. Section 8 Release and Leak Documentation, Response and Confirmation (DELETE)

8.1. Release Documentation, Response and Confirmation

8.1.1 No Person shall knowingly allow any Release of a Regulated Substance from an AST to continue. Owners and Operators shall take immediate action to contain any Release so as to minimize the environmental impact of the Release and to immediately identify and mitigate fire, explosion and vapor hazards.

8.1.2 A Release of a Regulated Substance from an AST in excess of the reportable quantities specified in the regulations promulgated pursuant to Title 7 Del. C., Chapter 60, §6028, the *Delaware Regulations Governing the Reporting of a Discharge of a Pollutant or an Air Contaminant*, as amended, shall be reported to the Department in accordance with the requirements of Title 7 Del. C., Chapter 60 and the Regulations promulgated thereunder as amended.

8.1.3 Documentation on the routine in-service inspection report shall be made at the time of discovery of any Release or a suspected Release of a Regulated Substance from an AST in an amount less than the reportable quantities specified in the regulations promulgated pursuant to Title 7 Del. C., Chapter 60, §6028, the *Delaware Regulations Governing the Reporting of a Discharge of a Pollutant or an Air Contaminant*, as amended, that impacts soil, groundwater, or surface water outside a Secondary Containment area. If the commencement of cleanup activities cannot begin within 24 hours of discovery and cannot be completed

within 7 days, the routine in-service inspection report shall be sent to the Tank Management Branch via fax or electronic mail.

8.1.4 When documenting a Release or a suspected Release from an AST the Owner and Operator shall describe:

8.1.4.1 The chemical name or identity of any substance involved in the Release or suspected Release and the approximate quantity released;

8.1.4.2 The Facility location and the Release or suspected Release location at the Facility;

8.1.4.3 The medium or media into which the Release or suspected Release occurred (i.e., soil, groundwater, surface water);

8.1.4.4 Possible impacted area receptors (i.e., surface water, wells, utilities, basements);

8.1.4.5 All corrective actions undertaken.

8.1.5 A suspected Release includes but is not limited to the following:

8.1.5.1 The discovery of released Regulated Substance in the area surrounding an AST, such as the presence of stained soils, vapors in soils, basements or utility lines, free product or dissolved product discovered in Monitor wells or water-supply wells, or sheens observed on surface water bodies; or

8.1.5.2 The occurrence of unusual operating conditions observed by the Owner and Operator, such as the sudden loss of Regulated Substance, erratic behavior of a Regulated Substance Dispensing System, unless the AST is found to be defective but not leaking and is immediately repaired or replaced; or

8.1.5.3 AST monitoring results from a Leak Detection method or Release detection equipment unless either:

8.1.5.3.1. an equipment failure can be demonstrated and the faulty equipment is immediately repaired or replaced and additional monitoring does not confirm the initial result; or

8.1.5.3.2. in the case of inventory control, a second month of data does not confirm the initial result.

8.1.5.4 The presence of a Regulated Substance, or a signal from a Leak Detection device, or a laboratory report that shows the sample removed from an observation tube or Monitor well, or soil/water samples removed from an AST excavation contains a Regulated

Substance, shall be evidence of a Release unless the responsible party affirmatively proves that no Release has occurred.

8.1.6 Upon an indication of a suspected Release of a Regulated Substance from an AST, the Owner and Operator shall immediately investigate and within seven (7) days confirm whether or not a Release has occurred. Actions may include but are not limited to:

8.1.6.1 Performing a visual inspection of all exposed portions of the AST including but not limited to: the storage tank, piping, loading rack, Dispensing System and ancillary equipment, and surrounding containment areas and ground surfaces;

8.1.6.2 Checking inventory records for discrepancies;

8.1.6.3 Checking Release detection monitoring devices;

8.1.6.4 Checking Monitor Wells;

8.1.6.5 Testing system components, including but not limited to: storage tank bottoms, and Underground Piping and equipment, for tightness or integrity; Owners and Operators shall repair, replace or Upgrade the AST, and begin corrective action in accordance with Part E of these Regulations if the test results of the AST indicate that a Leak exists. Owners and Operators shall conduct a site check if the test results for the AST do not indicate that a Leak exists but environmental contamination is the basis for suspecting a Release;

8.1.6.6 Owners and Operators shall measure for the presence of a Release where contamination is most likely to be present at the AST site. In selecting sample types, sample locations, and measurement methods, Owners and Operators shall consider the nature of the stored substance, the type of initial alarm or cause for suspicion, type of backfill, the depth of ground water, and other factors appropriate for identifying the presence and source of the Release. Site check for the presence of a Release may be conducted by the use of: Monitor Wells, analysis of soil samples, vapor monitoring (soil gas survey) methods or other methods; and

8.1.6.7 Complete other actions as necessary to confirm the Release.

8.1.7 Within 24 hours of confirming a suspected Release of a Regulated Substance from an AST, Owners and Operators shall take immediate action according to this Section.

8.1.8 If a Release, other than those that can comply with §8.1.3 of this Part, is confirmed, the requirements of Part E of these Regulations shall be followed, unless the Owner and Operator is directed to do otherwise by the Department.

8.2. Leak Documentation, Response and Confirmation

8.2.1 No Person shall knowingly allow any Leak of a Regulated Substance from an AST to continue.

8.2.2 A Leak of a Regulated Substance in a quantity less than the reportable quantities specified in the regulations promulgated pursuant to Title 7 Del. C., Chapter 60, §6028, the *Delaware Regulations Governing the Reporting of a Discharge of a Pollutant or an Air Contaminant,* as amended, inside the Secondary Containment area or that does not impact soil, groundwater, or surface water, and cannot be cleaned up within (7) seven days shall be reported to the Tank Management Branch as soon as possible but in no instance shall reporting exceed (7) seven days from the time of discovery. Reporting may be made in person or by telephone or by electronic mail.

8.2.3 Documentation of the Leak and the calculations of how the amount leaked was determined shall be maintained by the Owner and Operator at the Facility for the operational life of the AST.

8.2.4 Actions to prevent a reoccurrence of the Leak and actions to mitigate evidence of a Leak shall be initiated within 30 days. These actions shall include but are not limited to:

8.2.4.1 Repairing or replacing defective equipment or;

8.2.4.2 Modifying operating procedures or;

8.2.4.3 Retraining employees.

8.2.5 Evidence from a Leak on Secondary Containment surfaces other than soil, shall be mitigated by mechanical and/or chemical means that do not compromise the impermeability of the Secondary Containment and which permit potential future Leaks to be readily discernible from evidence of previous Leaks.

8.2.6 Evidence from Leaks on the Secondary Containment surfaces comprised of soil shall be eliminated by excavating all impacted soils or a means by which a new stain is easily detectable and which does not compromise the impermeability of the Secondary Containment. Any area that is excavated shall be backfilled with a material of equal or superior impermeability.

B.

Corrective Action Requirements for ASTs (DELETE)

PART E

CORRECTIVE ACTION REQUIREMENTS FOR ASTs

Section 1. Investigation

1.1. After a Release, other than those that can comply with §8.1.3 of Part A, is confirmed, the Owner and Operator shall conduct an investigation as the first step in the corrective action process unless directed to do otherwise by the Department.

1.2. The purposes of an investigation are to determine:

1.2.1 The nature of the Release, including the chemical compounds present, their concentrations, quantity released and their physical and chemical characteristics related to potential human health and environmental impacts and cleanup procedures; and

1.2.2 The extent of the Release, both horizontal and vertical, including whether the contaminant is distributed homogeneously or heterogeneously; and

1.2.3 The physical characteristics of the site, including characteristics affecting the occurrence, distribution, and movement of the released contaminant and characteristics affecting access to the site, both horizontal and vertical, which may influence the feasibility of various investigatory and remediation procedures; and

1.2.4 An evaluation of the potential risks posed by the Release including identification of environmentally sensitive receptors, and estimate of the impacts to human health and the environment that may occur as a result of the Release.

1.3. The Department shall receive the results of the investigation no later than 120 days after the Release was reported and confirmed. Upon receiving the investigation report, the Department shall review the report and either accept the conclusions and recommendations of the report, require additional information to be submitted, or require that the Owner and Operator submit a corrective action work plan as required by §3 of this Part. Additional investigation information or corrective action work plans requested by the Department shall be submitted within ninety (90) days or other Department approved schedule.

1.4. The Owner and Operator may submit investigation reports for a site separately or as part of a proposed long-term corrective action work plan.

1.5. At any point after reviewing the information contained in the investigation report, the Department may require Owner and Operator to submit additional information or to develop and submit a corrective action work plan to address contaminated soils, surface water or groundwater.

Section 2. Administrative Option for Corrective Action

2.1. The Department may waive the requirement of a investigation when the Owner and Operator has taken the appropriate initial response steps to eliminate imminent dangers and to prevent any further Release and the Owner and Operator chooses to submit a corrective action work plan to remediate contaminated soil, ground water and/or surface water.

2.2. If the Department determines that the implementation of corrective actions are not achieving adequate protection of human health and the environment, the Department may require additional responses to be taken.

2.3. The Owner and Operator may, in the interest of minimizing environmental contamination and promoting more effective corrective action, begin remediation of soil and ground water before the corrective action work plan is approved provided that they:

2.3.1 Notify the Department of their intention to begin remediation; and,

2.3.2 Comply with any conditions imposed by the Department, including halting remediation or mitigating adverse consequences from cleanup activities; and

2.3.3 Incorporate these self-initiated remediation measures in the corrective action work plan that is submitted to the Department for approval pursuant to §3 of this Part.

Section 3. Corrective Action

3.1. Corrective Action Work Plan General Requirements

3.1.1 The corrective action work plan shall address the contamination of soils, ground water and surface water as identified in the investigation report. A corrective action work plan shall provide for adequate protection of the human health, safety and the environment and shall be modified to comply with the requirements contained in these Regulations as necessary.

3.1.2 The Department shall not approve any corrective action work plan that does not ensure adequate protection of human health, welfare, safety and the environment.

3.1.3 An Owner and Operator, who submits a work plan that does not provide for adequate protection of human health, safety, and the environment at the Department's discretion shall modify their corrective action work plan and resubmit the corrective action work plan to the Department within a timeframe specified by the Department.

3.1.4 All corrective action work plans shall be prepared using guidelines established by the Department.

3.2. Approval Requirements for Corrective Action Work Plans

3.2.1 A corrective action work plan shall propose a corrective action option for the site which shall:

3.2.1.1 Address the removal of Free Product to the maximum extent practicable as determined by the Department; and

3.2.1.2 Reduce the contaminant levels at the site based on site-specific information, including the investigation report, in order to protect human health, safety, and the environment, or

3.2.1.3 Reduce the contaminant levels to achieve the clean-up goals negotiated between the Owner and Operator and the Department, or

3.2.1.4 Reduce the contaminant levels to achieve the clean-up goals established by the Department, and

3.2.1.5 Monitor the site over time to provide technically-based assurance that the site contamination is controlled under natural conditions and that those conditions will not now, or at some future time, adversely impact human health, safety or the environment.

3.2.2 The Department shalll approve the corrective action work plan only when satisfied that implementation of the corrective action work plan provides for

measures considered adequate to protect human health, safety, and the environment. In making this determination, the Department shall consider the following factors as appropriate:

3.2.2.1 The physical and chemical characteristics of the Regulated Substance, including its toxicity, persistence, and potential for migration;

3.2.2.2 The report of the investigation conducted under §1of this Part;

3.2.2.3 The proximity, quality, and current and future uses of nearby surface water and groundwater and soil;

3.2.2.4 An exposure assessment;

3.2.2.5 Any information assembled in compliance with this Part of the Regulations; and

3.2.2.6 The potential effects of residual contamination on nearby surface water and groundwater and soil.

3.2.3 The corrective action work plan shall be organized in report form and all or portions of the report may be required to be signed by a professional geologist or Professional Engineer registered in the State of Delaware as determined by the Department.

3.2.4 The corrective action work plan may propose a phased approach to site remediation.

3.3. Quality Assurance/Quality Control

3.3.1 A site-specific Quality Assurance/Quality Control (QA/QC) plan for the activities to be carried out during implementation of the corrective action work plan shall be formulated and approved by the Department prior to the implementation of any site activities. This QA/QC Plan shall be included in the corrective action work plan and shall cover all actions proposed in the work plan.

3.4. Site Safety

3.4.1 A site-specific health and safety plan shall be included in the corrective action work plan and shall cover all corrective action tasks. The health and safety plan shall address the site worker protection levels, protection of persons living near the site and site access control during remediation.

3.4.2 The Department shall approve a corrective action work plan only after ensuring that the health and safety plan will provide for adequate protection of human health, safety and the environment during and after the implementation of the corrective action work plan.

3.5. Corrective Action Work Plan Implementation and Monitoring Schedule

3.5.1 Upon approval of the corrective action work plan by the Department, the Owner and Operator shall implement the corrective action work plan, including any modifications to the corrective action work plan made by the Department, within thirty (30) days. As a minimum, the Owner and Operator shall monitor, evaluate and report the results of implementing the corrective action work plan quarterly (four times per calendar year), or within the time schedule approved by the Department in the corrective action work plan.

3.5.2 The Owner and Operator shall evaluate the effectiveness of the implemented corrective action work plan after one (1) year and shall submit to the Department for approval either:

3.5.2.1 A request for no further action in accordance with §3.6 of this Part; or

3.5.2.2 A revised corrective action work plan prepared in accordance with the requirements of §3.1 of this Part; or

3.5.2.3 A request to continue implementation of the approved corrective action work plan and monitoring schedule in accordance with §3.5.1 of this Part.

3.5.3 Copies of all manifests and records documenting the off-site transport and disposal of any Free Product, contaminated water and soil, or other waste that is generated at the site as a result of the implementation of the corrective action work plan, shall be submitted to the Department not less than once per quarter.

3.6. Requirements for No Further Action

3.6.1 The Owner and Operator shall achieve the clean up goals established in the approved corrective action work plan.

3.6.2 After all corrective action work plan goals have been achieved, the Owner and Operator shall submit a request for a letter of no further action. The request for no further action shall be submitted in a report form. No further action documentation shall include but may not be limited to the following:

3.6.2.1 A demonstration that the corrective actions implemented assure adequate protection of human health, safety and the environment now and in the future.

3.6.2.2 A demonstration that Free Product has been removed to the extent practicable according to the requirement in §3.2.1.1 of this Part. If Free Product persists at the site, the Owner and Operator shall provide the Department with an acceptable rationale for discontinuing corrective action and monitoring efforts.

3.6.2.3 The Owner and Operator shall submit all documents, not previously submitted, verifying that all wastes have been properly transported and disposed.

3.6.2.4 The Owner and Operator shall submit a summary of major events and accomplishments achieved during the investigation/remediation process.

3.6.3 The final report shall be signed by a professional geologist or Professional Engineer licensed in the State of Delaware, as determined by the Department.

3.6.4 After approving the final report the Department shall issue a letter of no further action, documenting that site clean-up objectives have been met. The approval for no further action does not absolve the Owner and Operator from previously incurred or potential future liability.

C.

DRAFT Part E: Regulations Governing Aboveground Storage Tanks (ADD)

PART E. LEAK AND RELEASE REPORTING AND CORRECTIVE ACTION REQUIREMENTS FOR ASTs

Section 1. General Requirements for Leaks Inside Secondary Containment

1.1. Leaks Inside Secondary Containment

1.1.1 No Person shall knowingly allow any Leak of a Regulated Substance from an AST into Secondary Containment to continue.

1.1.2 A Leak of a Regulated Substance inside Secondary Containment in any quantity that cannot be cleaned up within (7) seven days shall be reported to the Tank Management Section as soon as possible, but in no instance shall reporting exceed (7) seven days from the time of discovery. Reporting may be made in person or by telephone or by electronic mail.

1.1.3 Documentation of the Leak and the calculations of how the Leak amount was determined shall be maintained by the Owner and Operator at the Facility for the operational life of the AST.

1.1.4 Actions to prevent a reoccurrence of the Leak and actions to mitigate evidence of the Leak shall be completed within 30 days. These actions shall include but are not limited to:

1.1.4.1 Repairing or replacing defective equipment or;

1.1.4.2 Modifying operating procedures or;

1.1.4.3 Retraining employees.

1.1.5 Evidence of a Leak on Secondary Containment surfaces other than soil, shall be mitigated by mechanical and/or chemical means that do not compromise the impermeability of the Secondary Containment and which permit potential future Leaks to be readily discernible from evidence of previous Leaks, in accordance with PART E. 1.1.4PART A.1.1.4.

1.1.6 Evidence of a Leak on Secondary Containment surfaces comprised of soil that cannot be eliminated by surficial scraping shall be eliminated by excavating all impacted soils or a means by which a new stain is easily detectable and which does not compromise the impermeability of the Secondary Containment, in accordance with PART E. 1.1.4. Any area that is excavated shall be backfilled with a material of equal or superior impermeability.

1.1.6.1 The Department must be notified in person or by telephone, five (5) days in advance of any excavation activities within Secondary Containment.

1.1.6.2 Staining that extends through the impermeable Secondary Containment surface is considered a Release and a Hydrogeologic Investigation must be completed in accordance with PART E.Section 4.2

Section 2. Reporting Requirements

2.1. Indicated Releases from ASTs

2.1.1 Indicated Releases are signs that an AST, or the Secondary Containment are failing or could potentially fail to contain a Regulated Substance. Indicated Releases are Releases that are not observable and are not directly attributable to another source. Observable Releases must refer to PART E.Section 4.2. Indicated Releases include, but are not limited to, the following:

2.1.1.1 Stained soils or soils that emit characteristic odors of Regulated Substance compounds which are exposed during activities including, but not limited to digging, boring or excavation activities, retrofit of ASTs, Removal of an AST or collection of soil samples around an AST that is Permanently Closed In Place, or results from an Phase I or Phase II environmental Site Assessment; or

2.1.1.2 Water from supply wells, public or private, that exhibits a decrease in water quality, which is shown by subsequent analysis to result from the presence of a Regulated Substance; or

2.1.1.3 The appearance of characteristic odors of a Regulated Substance in basements or other enclosed spaces; or

2.1.1.4 The appearance of a sheen on a surface water body; or

2.1.1.5 The appearance of a sheen or measurable NAPL in a supply well, monitoring well, or observation tube; or

2.1.1.6 Failure of a Tank, Piping or vapor recovery test; or

2.1.1.7 A laboratory report that indicates a sample collected from or near an AST excavation, soil boring, monitor well or observation tube contains a Regulated Substance; or

2.1.1.8 Notification from the State Emergency Prevention and Response Section or another State or Federal agency of the discovery of a Release of uncontained Regulated Substance or compounds; or

2.1.1.9 Documentation on a tank inspection report that the AST integrity may have been compromised including but not limited to:

2.1.1.9.1. Holes in the AST; or

2.1.1.9.2. Thinning of AST structural material below the minimum design standard; or

2.1.1.9.3. Cracks in welds or steel plates.

2.1.1.10 Abnormal operating conditions include but are not limited to the following:

2.1.1.10.1. The sudden loss of product from any portion of the AST;

2.1.1.10.2. Inventory control discrepancies over a consecutive two month period;

2.1.1.10.3. A signal from any release detection device or method that indicates a Release may have occurred;

2.1.1.10.4. The unexplained presence of water in the AST;

2.1.1.10.5. Evidence of a Release of a Regulated Substance noted during a routine inspection.

2.2. Reporting Requirements for Indicated Releases

2.2.1 Any indication of a Release of a Regulated Substance from an AST that was not witnessed, is not immediately quantifiable, and has impacted soil, surface water, or groundwater, and is discovered by any Person, including but not limited to environmental consultants, environmental contractors, utility companies, financial institutions, real estate transfer companies, or AST Owners or Operators shall be reported within 48 hours to:

2.2.1.1 The DNREC Tank Management Section by calling 302-395-2500 during normal business hours, which are 8am to 4pm, Monday through Friday, excluding state holidays or emergency state office closures. Reporting to the Tank Management Section does not release any Person from complying with the requirements of 7 Del. C., Chapter 60 and the Regulations promulgated there under as amended and if an imminent threat to human health, safety or the environment exists.

2.2.1.2 If the phone numbers listed in these Regulations are not valid it is the responsibility of the Owner and Operator to take all reasonable steps to ascertain a valid phone number.

2.2.2 The Department may require that the AST be taken Out of Service and Emptied until the cause of the Indicated Release is determined, if the Department deems such action necessary to protect human health, safety or the environment.

2.2.3 Abnormal operating conditions, mechanical abnormalities, or equipment issues that indicate that a Release of a Regulated Substance has occurred, may be occurring, or has the potential to occur must be investigated in accordance with PART E.Section 3.

2.3. Reporting Requirements for Releases

2.3.1 Owners and Operators shall not knowingly allow any Release of a Regulated Substance from an AST to continue. Owners and Operators shall take immediate

action to contain any Release so as to minimize the environmental impact of the Release and to immediately identify and mitigate fire, explosion and vapor hazards.

2.3.2 Any Release of a Regulated Substance from an AST in excess of the reportable quantities specified in the regulations promulgated pursuant to 7 Del. C., Chapter 60, §6028, the *Delaware Regulations Governing the Reporting of a Discharge of a Pollutant or an Air Contaminant*, as amended, that is discovered by any Person, including but not limited to environmental consultants or contractors, utility companies, financial institutions or real estate transfer companies, shall be reported within 24 hours to:

2.3.2.1 The Department's 24-hour Release Hot Line by calling 800-662-8802, and

2.3.2.2 The DNREC Tank Management Section by calling 302-395-2500, during normal business hours, which are 8am to 4pm, Monday through Friday, excluding state holidays or emergency state office closures.

2.3.2.3 If the phone numbers listed in these Regulations are not valid it is the responsibility of the Owner and Operator to take all reasonable steps to ascertain a valid phone number.

2.3.3 Owners and Operators shall immediately contain the Release and shall complete the Release response, investigation and Remedial Action requirements of PART E.Section 7 as required.

2.3.4 Owners and Operators shall comply with the release notification requirements of any and all other state, federal or municipal agencies.

2.3.5 Any Release of a Regulated Substance in a quantity less than the reportable quantity specified in the regulations promulgated pursuant to Title 7 Del. C., Chapter 60, §6028, the *Delaware Regulations Governing the Reporting of a Discharge of a Pollutant or an Air Contaminant*, as amended, shall be documented at the time of discovery on the routine in-service inspection report. If the commencement of cleanup activities cannot begin within 24 hours and be completed within seven (7) days the Tank Management Section shall be notified in person or via fax, electronic mail, or by telephone on the eighth day, and the requirements of PART E.Section 4.2 shall apply.

Section 3. Indicated Release Investigation Requirements

3.1. General Requirements for Indicated Release Investigation

3.1.1 If at any point in the Indicated Release Investigation it is determined that a Release of a Regulated Substance from an AST in excess of the reportable quantities specified in the regulations promulgated pursuant to 7 Del. C., Chapter 60, §6028, the *Delaware Regulations Governing the Reporting of a Discharge of a Pollutant or an Air Contaminant*, as amended, has occurred, the Department must be notified immediately and Release Response actions in accordance with PART E.Section 4.2 must begin.

3.1.2 Unless Remedial Action is immediately initiated in accordance with the requirements of PART E.Section 6.1.3, Owners and Operators shall investigate and confirm, within seven (7) days, any indication of a Release of a Regulated Substance including but not limited to those listed in PART E.Section 2.1.1.

3.2. Indicated Release Investigation Procedures

3.2.1 Upon discovery of an indication of a Release Owners and Operators shall:

3.2.1.1 Within twenty-four (24) hours initiate an investigation to determine the cause of any abnormal operating condition; and

3.2.1.2 Within twenty-four (24) hours initiate an investigation, for completion within seven (7) days, to determine the presence or absence of a Release by:

3.2.1.2.1.1. Conducting inspection and testing of the AST and Secondary Containment as necessary to conclusively determine the presence or absence of a Release; or

3.2.1.2.2. Measuring for the presence of a Release where contamination is most likely to be present at the AST site. In selecting sample types, sample locations and measurement methods, the type of initial indication of contamination, type of backfill and soil, the depth of groundwater, and other factors appropriate for identifying the presence and source of the Release shall be considered; or

3.2.1.2.3. Other procedures as directed by the Department.

3.2.1.3 When the abnormal operating condition is the result of an equipment failure or malfunction, Owners and Operators shall repair or replace all faulty equipment in accordance with these Regulations.

3.2.1.4 When the Release investigation determines that a Release has occurred, Owners and Operators shall comply with the hydrogeologic investigation and Remedial Action requirements of PART E.Section 4.2.

3.2.2 If a Release is confirmed or a repair is required, the Department must be notified within thirty (30) days of the completion of any repairs and Indicated Release investigation. Owners and Operators and AST contractors shall submit documentation to the Department including, but not limited to, the following:

3.2.2.1 Repair completion documentation; and

3.2.2.2 Sampling results; and

3.2.2.3 Test results as required by the Department.

3.2.3 If following the indicated Release investigation, it is confirmed that a Release from an AST has not occurred, documentation of the indicated Release Investigation must be maintained for the life of the AST.

3.2.3.1 Results of the Indicated Release Investigation must be submitted to the Department if requested by the Department.

Section 4. Release Response Requirements

4.1. Department Authority to Assume Control of Releases

4.1.1 The Department reserves the right to assume control of any Release or Indicated Release situation when it is determined that the Owner and Operator are not responding promptly or effectively. In such cases all liability, including payment to the Department of response costs, will remain with the Owners and Operators.

4.1.2 To protect human health, safety and the environment, the Department reserves the right for the Department or its contractors to enter and take appropriate actions on affected properties to investigate, abate and remediate contamination.

4.2. Initial Release Response Requirements

4.2.1 In response to a Release from an AST, the Owner and Operator shall promptly take the following steps:

4.2.1.1 If a faulty AST component is determined to be the cause of a Release, the component or, if necessary, the entire AST system, shall be taken Out Of Service and shall not be returned to service until the AST is functioning in compliance with all applicable portions of these Regulations; and

4.2.1.2 At the Department's direction, a hydrogeologic investigation in accordance with PART A.Section 5 shall be conducted to determine an estimate of the amount and type of Regulated Substance Released; and

4.2.1.3 Owners and Operators shall implement the following to contain the Release:

4.2.1.3.1. If NAPL is present, NAPL Corrective Action shall be immediately initiated in accordance with PART E.Section 4.3; and,

4.2.1.3.2. Nearby receptors shall be protected from impacts of Regulated Substances by preventing free and mobile NAPL migration through recovery and containment, and the Department shall be notified of all such activities; and

4.2.1.3.3. All flammable material shall be properly handled and vapors shall be mitigated to prevent fires, explosions and impacts to receptors.

4.3. NAPL Corrective Action Requirements

4.3.1 At sites where there is a Release of NAPL, the Owners and Operators shall remove and remediate the NAPL to the maximum extent practicable following the requirements established in PART E.Section 4 while continuing, as necessary, the Release confirmation steps and the investigation required in PART E.Section 5.

4.3.2 The Owners and Operators shall formulate a NAPL Conceptual Site Model (NCSM) to determine the most efficient and environmentally protective remedial approach for addressing the Release.

4.3.3 The Owners and Operators shall verbally communicate a preliminary NCSM to the Department within forty-eight (48) hours of the discovery of a Release of NAPL. The preliminary NCSM shall address as many of the criteria listed in PART E.Section 4.3.4 as possible.

4.3.4 The NCSM shall at a minimum address the following factors with regard to the NAPL Release:

4.3.4.1 The feasibility and necessity of an immediate response;

4.3.4.2 Direct and potential impacts to human health and the environment;

4.3.4.3 The type and estimated volume of the NAPL released;

4.3.4.4 The evidence, or occurrence, of the NAPL Release (Mobile NAPL, Free NAPL in a well, Residual NAPL discovered during an investigation);

4.3.4.5 The potential recoverability of all NAPL phases;

4.3.4.6 The geometry of the NAPL Body;

4.3.4.7 The estimated age and duration of the NAPL Release;

4.3.4.8 The characteristics of the subsurface soils;

4.3.4.9 The chemical and physical properties of the NAPL;

4.3.4.10 Groundwater classification for the area such as wellhead protection areas, excellent recharge areas, or source water protection areas.

4.3.5 Owners and Operators shall base all short and long term Remedial Action decisions upon the information in the NCSM, which shall be updated, in writing, at a minimum of once every three (3) calendar months, or on a schedule approved by the Department.

4.3.6 NAPL removal shall be conducted in a manner that minimizes the spread of contamination, including dissolved and vapor phases, into previously uncontaminated areas by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site, and that properly treats, discharges or disposes of recovery by-products in accordance with all applicable local, state and federal requirements.

4.3.7 If NAPL recovery is not practicable, and does not support site Remedial Action objectives as determined by the Department, Owners and Operators may submit a

written request for Department approval to discontinue NAPL recovery. The request shall at a minimum include the following:

4.3.7.1 Technical feasibility of other proven groundwater and soil treatment techniques to further reduce NAPL at the site; and

4.3.7.2 Costs, time frames, and resources involved to further reduce NAPL levels employing the current and alternative method(s) proposed; and

4.3.7.3 A demonstration that the remaining NAPL body is not contributing to any unstable daughter plumes such as a dissolved plume and vapor migration; and

4.3.7.4 A demonstration that remaining NAPL does not pose any risk to human health, safety, and the environment; and

4.3.7.5 An assessment of the persistence and fate of the NAPL in the subsurface; and

4.3.7.6 A description of the individual site characteristics, including natural rehabilitative processes; and

4.3.7.7 Statements regarding current versus future land use of the site.

4.3.8 The Department may require Owners and Operators to follow any applicable guidance or industry referenced standards in order to create a sound NCSM, from which optimal Remedial Action decisions can be made.

Section 5. Hydrogeologic Investigation Requirements

5.1. General Requirements for Hydrogeologic Investigation

5.1.1 After a Release is confirmed, the Owner and Operator shall conduct a hydrogeologic investigation as the first step in the Corrective Action process unless directed to do otherwise by the Department.

5.1.2 The investigation shall at a minimum include the following:

5.1.3 Determine the nature of the Release, including the chemical compounds present, their concentrations, quantity released and their physical and chemical characteristics related to potential human health and environmental impacts and cleanup procedures; and

5.1.3.1 Determine the extent of the Release, both horizontal and vertical, including whether the contaminant is distributed homogeneously or heterogeneously; and

5.1.3.2 Determine the physical characteristics of the site, including characteristics affecting the occurrence, distribution, and movement of the released contaminant and characteristics affecting access to the site, both horizontal and vertical, which may influence the feasibility of various investigatory and remediation procedures; and

5.1.3.3 Evaluate, in accordance with the Delaware Risk-Based Corrective Action Program (DERBCAP) or other Department approved procedure, the potential risks posed by the Release including identification of environmentally sensitive receptors, and estimate the impacts to human health and the environment that may occur as a result of the Release.

5.1.4 The results of the hydrogeologic investigation shall be organized in report form and be signed by a professional geologist or professional engineer registered in the State of Delaware as required in 24 Del.C. Chapter 36 and the Delaware Board of Registration of Geologists Regulations and 24 Del.C. Chapter 28.

5.1.5 The Department shall receive the results of the hydrogeologic investigation no later than one hundred and twenty (120) days after the Release was reported and confirmed. Upon receiving the hydrogeologic investigation report, the Department shall review the report and either accept the conclusions and recommendations of the report, require additional information to be submitted, or require that the Owner and Operator submit a remedial action work plan as required by PART E.Section 7.

5.1.6 At any point after reviewing the information contained in the hydrogeologic investigation report, the Department may require the Owner and Operator to submit additional information or to develop and submit a remedial action work plan to address contaminated soils, surface water or groundwater.

5.1.7 Additional investigation information or remedial action work plans requested by the Department shall be submitted within ninety (90) days or other Department approved schedule.

5.1.8 Owners and Operators may submit investigation reports for a site separately or as part of a proposed long term Remedial Action work plan in accordance with the requirements of PART A.Section 7.

5.2. Quality Assurance and Quality Control Requirements

5.2.1 Owners and Operators shall develop and implement a site specific Quality Assurance/Quality Control (QA/QC) plan for the activities to be carried out during the hydrogeologic investigation. The QA/QC plan shall be submitted to the Department upon the request of the Department.

5.3. Site Safety Requirements

5.3.1 Owners and Operators shall develop and implement a site specific health and safety plan that covers all hydrogeologic investigation tasks. The health and safety plan shall address the site worker protection levels, protection of persons living near the site and site access control during the investigation. The health and safety plan shall be submitted to the Department upon the request of the Department.

Section 6. Administrative Option for Remedial Action

6.1. Requirements for Administrative Option for Remedial Action

6.1.1 The Department may waive the requirement of a hydrogeologic investigation when the Owner and Operator has taken the appropriate initial response steps to eliminate imminent dangers and to prevent any further Release, and the Owner and Operator chooses to submit a Remedial Action work plan (RAWP) to remediate contaminated soil, ground water and/or surface water.

6.1.2 If the Department determines that the implementation of Remedial Actions are not achieving adequate protection of human health and the environment, the Department may require additional responses to be taken.

6.1.3 The Owner and Operator may, in the interest of minimizing environmental contamination and promoting more effective corrective action, begin remediation of soil and ground water before the Remedial Action work plan (RAWP) is approved provided that they:

6.1.3.1 Notify the Department of their intention to begin remediation; and,

6.1.3.2 Comply with any conditions imposed by the Department, including halting remediation or mitigating adverse consequences from cleanup activities; and

6.1.3.3 Incorporate these self-initiated remediation measures in the Remedial Action work plan (RAWP) that is submitted to the Department for approval pursuant to PART E.Section 7.

6.1.3.4 Recognize that any actions taken by the Owner and Operator without prior Department approval is at the risk of the Owner and Operator and does not absolve the Owner and Operator of the obligation to comply with the Remedial Action requirements of PART E.Section 7.

Section 7. Remedial Action Work Plan Requirements

7.1. General Remedial Action Requirements

7.1.1 At any point after reviewing the information contained in the hydrogeologic investigation report, the Department may require the Owner and Operator to submit additional information or to develop and submit a RAWP for responding to contaminated soils, surface water and groundwater.

7.1.2 The RAWP shall address the contamination of soils, groundwater and surface water, including all occurrences of NAPL resulting from a Release, and shall be submitted to the Department in a timeframe specified by the Department. The RAWP shall provide for adequate protection of human health, safety and the environment, and shall establish cleanup goals for the site.

7.1.3 The Owner and Operator shall modify any RAWP that does not provide for adequate protection of human health, safety and the environment, as necessary to meet the requirements of PART E.Section 8.

7.1.4 The RAWP shall include sufficient design information that demonstrates that the remedial technology shall meet the cleanup goals approved by the Department and shall include an estimated time to cleanup completion for the remediation method proposed in the RAWP.

7.1.5 A RAWP shall propose a Remedial Action method for the site that shall:

7.1.5.1 Reduce the contaminant levels at the site to meet the cleanup goals proposed in the Remedial Action work plan and approved by the Department; or

7.1.5.2 Reduce the contaminant levels to achieve the cleanup goals established by the Department; or

7.1.5.3 Monitor the site over time to provide technically based assurance that the site contamination is controlled under natural conditions and that those conditions will not now, or at some future time, adversely impact human health, safety or the environment.

7.1.6 The Department shall approve the RAWP when satisfied that implementation of the RAWP provides for measures considered adequate to protect human health, safety, and the environment.

7.1.7 The RAWP shall be organized in report form and signed by a professional geologist or professional engineer registered in the State of Delaware as required in 24 Del.C. Chapter 36 and the Delaware Board of Registration of Geologists Regulations and 24 Del.C. Chapter 28.

7.1.8 The RAWP shall be of site specific design and shall be based on the results of the hydrogeologic investigation, or contain appropriate investigatory steps if submitted without a prior hydrogeologic investigation having been completed.

7.1.9 The RAWP may propose a phased approach to site remediation. If data can justify site closure, Owner and Operator may request site closure in accordance with the requirements of PART A.Section 8. Remedial Action will be considered complete only upon the Department's evaluation and approval of a satisfactory closure request.

7.1.10 The RAWP shall include a summary of past efforts and a description of any new or continued efforts to effectively remove NAPL as described in PART A.Section 4.

7.2. Quality Assurance and Quality Control Requirements

7.2.1 Owners and Operators shall develop and implement a site specific Quality Assurance/Quality Control (QA/QC) plan for the activities to be carried out during implementation of the RAWP and the QA/QC plan shall be included in the RAWP submitted to the Department.

7.3. Site Safety Requirements

7.3.1 Owners and Operators shall develop a site-specific health and safety plan which shall be included in the RAWP and shall cover all Remedial Action tasks. The health and safety plan shall, at a minimum, address site worker protection levels, protection of persons living near the site, and site access control during the remediation.

7.4. Implementation and Reporting Schedule

7.4.1 Upon approval of the RAWP by the Department, the Owners and Operators shall implement the RAWP, including any modifications to the RAWP made by the Department, within the timeframe approved by the Department.

7.4.2 Owners and Operators shall monitor, evaluate and report to the Department the results of implementing the Remedial Action at a minimum of once every three (3) calendar months, or within the time schedule approved in the RAWP. Copies of all records documenting the transport and disposal of any free product, contaminated water and soil, or other waste that is generated at the site while investigation and Remedial Action work is being performed shall be included in each report.

7.4.3 Owners and Operators shall submit a Remedial Action progress report to the Department once every twelve (12) calendar months that includes an evaluation of the effectiveness of the Remedial Action to determine whether additional measures must be implemented to meet the cleanup goals established in the RAWP. The evaluation shall include an estimate of time to Remedial Action completion.

7.4.4 Owners and Operators shall submit recommendations for optimization and improvement as needed to achieve the cleanup goals established in the RAWP, as part of each Remedial Action progress report.

7.5. Post Remedial Monitoring

7.5.1 Upon completion of Remedial Action activities the Owners and Operators shall perform four (4) consecutive quarters of groundwater sampling or other sampling schedule as approved by the Department to ensure the contaminant plume is stable and shrinking and that rebounding does not occur.

Section 8. No Further Action

8.1. Request for No Further Action Determination

8.1.1 After all RAWP goals have been achieved, the Owner and Operator shall submit a written request to the Department for site closure. Closure documentation shall include but is not limited to the following:

8.1.1.1 A demonstration that the site does not threaten human health, safety and the environment based on current land use of the site and surrounding area; and

8.1.1.2 NAPL does not exist or has been addressed in accordance with PART E.Section 4.3; and

8.1.1.3 Contaminant levels have been reduced to levels at or below the cleanup goals approved by the Department.

8.1.2 Owners and Operators shall submit all documents, permits, certificates, approvals, etc. relating to the transportation of impacted environmental media and materials from the site including ASTs, soils, Regulated Substances, and water that has not been previously submitted to the Department. Documentation shall include tipping fees, waste receipts, bills of lading or any other documentation verifying that all waste has been properly disposed.

8.2. Department Response to a Request for No Further Action Closure

8.2.1 The Department shall issue a letter requiring no further action (NFA) and documenting that site cleanup objectives have been met. The closure approval does not absolve the Owner and Operator from previously incurred or potential future liability.

8.2.2 The NFA letter applies to site conditions at the time that the closure request was made. If the risk posed by the site changes in the future, due to land use changes at the site or surrounding area or due to other reasons, the Owner and Operator shall perform additional Remedial Action as necessary to eliminate the risk to human health, safety and the environment.

8.2.3 Any Person disturbing any residual contamination at the site by digging, boring, excavating, dewatering or other means, shall submit a contaminated material management plan to the Department for approval prior to work commencing.

D. DEFINITIONS: Please refer to the following **draft Definitions** when reviewing the Draft Part E: Leak Reporting and Corrective Action Requirement for ASTS

DEFINITIONS from DRAFT *Regulations Governing Aboveground Storage Tanks* 3/2016

Part A, Section 2. Definitions

The following words, terms and phrases have the meaning ascribed to them in this Section, except where the context clearly indicates a different meaning:

"Aboveground Storage Tank" or "AST" means a single aboveground containment vessel having a capacity of greater than 250 gallons and currently or previously having contained Regulated Substances on or after January 1, 1992. The term includes all ancillary aboveground pipes and Dispensing Systems up to the first permanently installed point of isolation and all ancillary underground pipes and Dispensing Systems. Within this definition, the word "vessel" includes any container that can be partially visually inspected, from the exterior, in an underground area. The term AST does not include any of the following:

- septic tank;
- pipeline facility (including gathering lines) regulated under:
  (a) the *Natural Gas Pipeline Safety Act of 1968* as amended [49 U.S.C. §1671 et seq.], or
  (b) the *Hazardous Liquid Pipeline Safety Act of 1979* as amended [49 U.S.C. §2001 et seq.]; or
  (c) Pipelines regulated pursuant to 33 U.S.C. and 49 CFR 195 *Transportation of Hazardous Liquids by Pipeline*; or
  (d) Pipelines regulated pursuant to 46 U.S.C. and 33 CFR 154 *Facilities transferring oil or hazardous material in bulk* and 33 CFR 156 *Oil and hazardous material transfer operations*;
- surface impoundment, pit, pond, or lagoon;
- liquid trap or associated gathering lines directly related to oil or gas production or gathering operations;
- Flow Through Process Tank that contains a Regulated Substance or substances and that forms an integral part of a production process through which there is a steady, variable, recurring, or intermittent flow of material during the operation of the process. Flow Through Process Tanks include, but are not limited to, seal tanks, surge tanks, bleed tanks, check and delay tanks, phase separator tanks, or tanks in which physical or chemical change of a material is accomplished. A Flow Through Process Tank does not include: 1) a tank that is used for the storage of material before its introduction into a production process; 2) a tank that is used for storage of products or by-products from the production process; or 3) a tank that is used only to recirculate material; 4) a tank that store fuels for combustion subsequently used to provide heat for a process.
- transformer, regulators and breakers used for the sole purpose of electrical power distribution and transmission;

- containment vessels operated as part of a publicly owned treatment works as defined pursuant to Title 7 Del. C., Chapter 60, *Environmental Controls*, §6002 and regulated pursuant to Title 7 Del. C., Chapter 60, *Environmental Controls*, §6003 or used for the storage and conveyance of wastewater to a treatment plant regulated in accordance with the requirements of the *Clean Water Act*;
- An AST that has met the requirements of Permanent Closure in accordance with these Regulations.

"Accidental Release" as it relates to Financial Responsibility requirements of **Error! Reference source not found.**, means any sudden or nonsudden release of a Regulated Substance from an AST that is deemed at the Department's discretion to represent an unacceptable risk to human health, safety or the environment based on accepted principles of risk assessment.

"Agricultural/Farm AST" means an AST less than 40,000 gallons containing a Regulated Substance, the contents of which are applied to the soil, crops, or livestock or ingested by livestock and used solely to directly facilitate the production of crops, livestock, livestock products or golf course turf. Crops include fish hatcheries, rangeland, cropland and nurseries including turf grass growing operations. Agricultural/Farm ASTs do not include ASTs used to store substances used in a manufacturing process. A manufacturing process does not include Agricultural/Farm ASTs used to store and blend Regulated Substances for retail sales.

"Ancillary Piping" means all piping, including valves, elbows, joints, flanges, and flexible connectors, attached to an AST through which Regulated Substances may flow.

"Annual Aggregate" means the total amount of financial responsibility available to cover all obligations that might occur in one year.

"API" means American Petroleum Institute.

"ASTM" means American Society for Testing and Materials.

"Blanketing" means the technique of maintaining the Ullage volume in a regulated AST below the Limiting Oxidant Concentration (LOC) by the use of an Inert Gas.

"Bodily Injury" shall have the meaning given to this term by State law; however this term shall not include those liabilities which, consistent with standard insurance industry practices, are excluded from coverage in liability insurance policies for Bodily Injury;

"Bulk Storage" as it is used in **Error! Reference source not found.** means an AST which is used to store a Flammable Regulated Substance and has the Flammable Regulated Substance added to or withdrawn from the AST by a vessel, tanker truck, rail car or pipeline.

"Cathodic Protection System" means a method to prevent corrosion to metal objects by forcing protective current from an external source onto the structure to be protected to counter or overcome any corrosion activity on its surface.

"CERCLA" means the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* [42 USC, § 9601(14)] and any amendments thereto.

"Certified API 653 Inspector" means an individual who is certified by the American Petroleum Institute under the terms of the API 653 certification program to perform AST inspections.

"Certified API 570 Inspector" means an individual who is certified by the American Petroleum Institute under the terms of the API 570 certification program to perform piping inspections.

"Certified STI-SP001 Inspector" means an individual who is certified by the Steel Tank Institute (STI) under the terms of the STI certification program to perform Shop-Fabricated AST inspections.

"Change In Service" means any change to a registered AST to include but not be limited to Removal, Permanent Change in Contents, Relocation, Permanent Closure in Place, change in status from either In Service or Out Of Service, conversion to storage of other than Regulated Substances or conversion to a use other than as an AST, or when the AST is Emptied.

"Chief Financial Officer" in the case of Local Government Owners and Operators, means the individual with the overall authority and responsibility for the collection, disbursement, and use of funds by the Local Government.

"Combustible" means capable of undergoing Combustion**.**

"Combustion" means the chemical process of oxidation that occurs at a fast enough rate to produce heat and usually light in the form of either a glow or flame.

"Compatible" means the ability of two or more substances to maintain their respective physical and chemical properties upon contact with one another for the design life of an AST under conditions likely to be encountered at an AST Facility.

"Consumptive Use" with respect to Heating Fuel means consumed on the premises where stored, used solely for the operation of equipment used for the generation of heat and is connected directly or via a day tank to the heat generating equipment,

"Continuous Leak Detection" means the uninterrupted measurement of the contents or other characteristics or parameters of an AST which immediately notifies the Operator of the failure of an AST to contain a Regulated Substance.

"Controlling Interest" means direct ownership of at least 50 percent of the voting stock of another entity.

"Corrective Action" means the sequence of actions, or process that includes confirming a Release, Site Assessment, interim remedial action, remedial action, monitoring, and termination of the Remedial Action.

"Day" means a calendar day; however, when used to determine when a document is due, or an action is required, and the day falls on the weekend or a holiday, the document may be submitted, or the action started, on the first working day after the weekend or holiday.

"Deflagration" means the propagation of a Combustion zone at a velocity which is less than the speed of sound in the unreacted medium.

"Deflagration Pressure Containment" means the technique of specifying the design pressure of a regulated AST and its appurtenances so they are capable of withstanding the maximum pressures resulting from an internal Deflagration.

"Deflagration Suppression" means the technique of detecting and arresting Combustion in the Ullage volume of a regulated AST while the Combustion is still in its incipient stage, thus preventing the development of pressures that could result in a rupture of the AST.

"Department" means the Delaware Department of Natural Resources and Environmental Control.

"Dispensing" as it is used in **Error! Reference source not found.** of these Regulations, means an AST which stores a Flammable Regulated Substance, which is transferred directly from the AST into a portable container, or into the fuel tank of a motor, a motor vehicle or a boat to be used as a motor fuel.

"Dispensing System" means any devise including, but not limited to, hoses (rigid or flexible), piping, fittings, fixtures, gauges, alarms, rupture disks, pressure release valves, flanges, or valves and pumps that are used to distribute, meter or control the flow of Regulated Substance to and from an AST.

"Effective Date" means the most recent date of promulgation of these Regulations.

"Electrically Isolated" means the electrical separation of the AST from the piping, and from other metallic structures and the environment by means of a nonconductive fitting or bushing.

"Empty" or "Emptying" means to thoroughly clean the interior of the AST and all Ancillary Piping of all residual Regulated Substances including but not limited to all sludge, solids, liquids, vapors, and gases.

"EPA" means the United States Environmental Protection Agency.

"Existing AST" means an AST for which substantial physical installation began prior to June 11, 2004. The term substantial physical installation includes, but is not limited to, a permit or contract for the installation.

"External Liner" means a layer or membrane constructed of a material compatible with the contents of the AST and is installed inside an existing Secondary Containment structure to provide additional assurance of impermeability**.**

"Facility" means any location or part thereof containing or having contained one or more ASTs.

"Field-Constructed " means an AST which is constructed by assembling on-site at a Facility.

"Financial Reporting Year" means the latest consecutive twelve-month period for which any of the following reports used to support a financial test is prepared:

- a 10-K report submitted to the SEC; or
- an annual report of tangible net worth submitted to a recognized rating service such as Dun & Bradstreet; or

- annual reports submitted to the Energy Information Administration or the Rural Electrification Administration.; or
- audited financial report; or
- annual reports submitted to the Board of Governors of the Federal Reserve System, the Comptroller of the Currency, or the Federal Deposit Insurance Corporation.

"Fixed Roof" means an AST which has an immovable roof or cover used as the sole means to either contain the vapors from a Regulated Substance stored within the AST or prevent unwanted contaminants from entering the AST.

"Flammable" means a Regulated Substance which meets the definition of an NFPA 30 Flammable Liquid.

"Floating Roof" means an AST which has a movable roof or cover which floats or rides upon the surface of a Regulated Substance to contain vapors from a Regulated Substance stored within the AST or prevent unwanted contaminants from entering the AST.

"Flow Through Process Tank" means a tank that contains a Regulated Substance or substances and that forms an integral part of a production process through which there is a steady, variable, recurring, or intermittent flow of material during the operation of the process. Flow Through Process Tanks include, but are not limited to, seal tanks, surge tanks, bleed tanks, check and delay tanks, phase separator tanks, or tanks in which physical or chemical change of a material is accomplished. A Flow Through Process Tank does not include: 1) a tank that is used for the storage of material before its introduction into a production process; or 2) a tank that is used for storage of products or by-products from the production process; or 3) a tank that is used only to recirculate materials; or 4) a tank that stores fuel for combustion subsequently used to provide heat for a process.

"Free Product" means immiscible liquid phase Regulated Substance existing in the subsurface with a positive pressure such that it can flow into a well.

"Guarantor" means a business entity that:

- Possesses a controlling interest in the Owner or Operator; or
- Possesses a controlling interest in a firm that has a controlling interest in the Owner or Operator; or
- Is an affiliate which is controlled through stock ownership by a common parent firm that possesses a controlling interest in the Owner or Operator; or
- Is engaged in a substantial business relationship with the Owner or Operator and is issuing the guarantee as an act incident to that business relationship.

"Heating Fuel" also known as heating oil, means a type of fuel oil that is one of seven technical grades and is used for heating purposes. These grades are: No. 1, No. 2, No 4-light, No. 4-heavy, No. 5-light, No. 5-heavy, and No. 6 residual and other fuels used as substitutes for one of these fuels such as kerosene and diesel. It contains one percent (1%) or more of a petroleum product, or was originally derived from a petroleum product or petroleum containing product.

"Impervious" means a material of sufficient thickness, density and composition that is impenetrable, or has a permeability of less than $1 \text{ X } 10^{-7}$ cm/sec. to the Regulated Substance, and that will prevent the discharge to the lands, ground waters, or surface waters of the State of any Regulated Substance for a period of at least as long as the maximum anticipated time during which the Regulated Substance will be in contact with the material.

"Impressed Current Cathodic Protection System" means direct current supplied to a Cathodic Protection System.

"Inert Gas" means a gas which is nonreactive with the contents of an AST. Inert gases may include but shall not be limited to nitrogen, carbon dioxide, helium, argon, xenon and krypton. An Inert Gas may consist of a mixture of different Inert Gases.

"Inerting" means the technique by which a Combustible mixture in the Ullage volume of an AST is rendered Non-Ignitable by the addition of an Inert Gas which reduces the Oxidant concentration below the Limiting Oxidant Concentration (LOC).

"**In Service**" means an AST that:

- is being actively maintained or operated, ; or
    - is emptied solely for the purpose of cleaning, routine maintenance, or a change in product, for a time period not to exceed 45 days.

"Leak" means the failure of an AST to contain a Regulated Substance.

"Leak Detection" means electronic, manual, or mechanical measurement of the contents or other characteristics or parameters of an AST which notifies the Operator of the failure of an AST to contain a Regulated Substance.

"Legal Defense Cost" means any expense that an Owner or Operator or provider of financial responsibility incurs in defending against claims or actions brought by:

- The EPA or the Department to require investigations and/or corrective action or to recover the costs of investigations and/or corrective action;
- Or on behalf of a third party for Bodily Injury or Property Damage caused by an Accidental Release; or
- Any Person to enforce the terms of a financial responsibility mechanism.

"Limiting Oxidant Concentration" (LOC) means the concentration of an Oxidant below which a Deflagration cannot occur.

"Local Government" shall have the meaning given this term by applicable State law and includes Indian tribes. The term is generally intended to include:

- Counties, municipalities, townships, separately chartered and operated special districts (including Local Government public transit systems and redevelopment authorities), and independent school districts authorized as governmental bodies by State charter or constitution; and
- Special districts and independent school districts established by counties, municipalities, townships, and other general purpose governments to provide essential services.

"Major Repair or Major Alteration" means operations that require cutting, addition, removal and/or replacement of the annular plate ring, the shell to bottom weld, or a sizable portion of the shell of an AST. These include but are not limited to the following:

- the installation of any shell penetration beneath the design liquid level larger than 12 inches National Pipe Standard, or any bottom penetration located within 12 in. of the shell.
- the removal and replacement or addition of any shell plate beneath the design liquid level, or any annular plate ring material where the longest dimension of the replacement plate exceeds 12 in.
- the complete or partial (more than one-half of the weld thickness) removal and replacement of more than 12 in. of vertical weld joining shell plates, or radial weld joining the annular plate ring.
- the installation of a new bottom. This does not include new bottoms in ASTs where the foundation under the new bottom is not disturbed and either condition (1) or (2) are met:
    (1) For ASTs with annular rings, the annular ring remains intact.
    (2) For ASTs without annular rings, the repair does not result in welding on the existing bottom within the critical zone.
- the removal and replacement of any part of the weld attaching the shell to the bottom or to the annular ring.
- jacking of an AST shell.

"Monitor Well" means a well installed in accordance with *Delaware Regulations Governing the Construction and Use of Wells* that will be used for the monitoring of ground water quality.

"Motor Fuel" means petroleum or a petroleum-based substance which is typically used in the operation of a motor vehicle, small engine, or aircraft engine, including:

- Motor gasoline;
- Aviation gasoline;
- No. 1 or No. 2 diesel fuel, and
- Any grade of gasohol.

"Motor Oil" means a petroleum product used to lubricate the internal parts of an engine. The term includes lubricating and operational fluids for the mechanical components associated with the engine. This includes any hydraulic, transmission, gear or braking lubricating or operational fluid that through use, storage or handling has become unsuitable for its original purpose due to the presence of impurities or loss of original properties.
"NACE" means National Association of Corrosion Engineers.

"NAPL" means a Non-Aqueous Phase Liquid composed of one or more organic compounds that are immiscible or sparingly soluble in water. The term encompasses all potential occurrences of NAPL including free, mobile, and residual.

"**Free NAPL"** means NAPL that is hydraulically connected in the pore space and has the potential to be mobile in the environment.

"NAPL Body" means the 3-dimensional form and distribution of NAPL in the subsurface existing in any phase.

"NAPL Conceptual Site Model (NCSM)" means a model describing the physical properties, chemical composition, occurrence and geologic setting of the NAPL body from which estimates of flux, risk and potential remedial action can be generated. The NCSM may be a dynamic, living model that changes through time as a function of natural attenuation or engineered remedial action processes, or additional site knowledge.

"Mobile NAPL" means free NAPL that is moving laterally or vertically in the environment under prevailing hydraulic conditions. The result of the NAPL movement is a net mass flux from one point to another. Not all free NAPL is mobile, but all mobile NAPL must be free NAPL.

"Residual NAPL" means NAPL that is hydraulically discontinuous and immobile under prevailing conditions. Residual NAPL cannot move, but is a source for chemicals of concern dissolved in groundwater or in the vapor phase in soil gas. The residual NAPL saturation is a function of the initial or maximum NAPL saturation and the porous medium.

"New AST" means a tank for which substantial physical installation began on or after June 11, 2004. The term substantial physical installation includes, but is not limited to, a permit or contract for the installation.

"NFPA" means National Fire Protection Association, Inc.

"Noncommercial" means a business or organization whose activities do not result in monetary gain, including but not limited to educational institutions, non-profit organizations under the terms of the Internal Revenue Service code definition in section 501(c), State, Federal and Local governmental entities and religious organizations,

"Non-Ignitable" means a gas or vapor in the presence of an Oxidant in which Combustion cannot be initiated by the introduction of an ignition source such as a flame, spark, or heat.

"Occurrence" as it relates to financial responsibility, means an accident, including continuous or repeated exposure to conditions, which results in a release from an AST. This definition is not intended either to limit the meaning of "occurrence" in a way that conflicts with standard insurance usage or to prevent the use of other standard insurance terms in place of "occurrence".

"Operator" means a Person operating a facility or who has operated a facility, including, but not limited to, by lease, contract or other form of authorization agreement. Operator includes any Person who has any of the responsibility for the care, custody, and control of the daily operation of an AST.

"Orphan Tank" means

- a tank for which the last Person to operate the tank cannot be identified; or
- a tank on property as to which the property Owner can establish that the Owner did not obtain and could not have obtained, through the exercise of reasonable and due diligence, knowledge of the existence of the tank prior to purchase of the property.

"Out Of Service" means an AST that is:

- designated as Out Of Service by the Owner and Operator and the Owner and Operator shall provide notification to the Department on a Department registration form; or
- an empty tank; or
- not in use, in that it has not had, within any 45-day period, a Regulated Substance transferred into or withdrawn from the tank and has been drained of all contents and is empty.

"Owner" means

(a) a Person who has or has had a legal interest in a Facility or AST; or
(b) who has or has had an equitable interest in a Facility or AST; and

(c) Owner does not mean any person who, without Participating in the Management of a facility or aboveground storage tank, holds indicia of ownership in a facility or

aboveground storage tank primarily to protect the person's security interest or is a fiduciary which has a legal title to or manages any property for purposes of administering an estate or trust of which such property is part. In the case of foreclosure the person shall not be deemed the owner of the aboveground storage tank provided that the person provides notification to the Department within thirty (30) days of the initiation of foreclosure proceedings for any property containing an aboveground storage tank, either In Service or Out Of Service utilizing a form provided by the Department.

"Oxidant" means any material that can react with a Regulated Substance to support Combustion in the Ullage of an AST. Oxygen in air is the most common Oxidant.

"PEI" means Petroleum Equipment Institute.

"Permanent Change in Contents" means the replacement of one substance stored in an AST and Ancillary Piping for another substance that would effect a change in the AST and Ancillary Piping's regulated status based on capacity and substance stored.**"Permanent Closure in Place"** or **"Permanently Closed in Place"** or **"Permanently Closing in Place"** or **"Permanently Closed"** means leaving an AST and Ancillary Piping in its installed location, removing the Regulated Substance from the AST and Ancillary Piping, thoroughly cleaning the interior of the AST and interior of the Ancillary Piping, disconnecting the Ancillary Piping from the AST, securing the AST and the Ancillary Piping to prevent unauthorized access, and discontinuing active use of the AST and Ancillary Piping with the intent of not introducing a Regulated Substance into the AST and Ancillary Piping.

"Permeability" means the ease with which fluid can move through a material and is measured by the rate of flow in suitable units.

"Person" means an entity, individual, trust, firm, joint stock company, federal agency, corporation (including a government corporation), partnership, company, association, state, municipality, commission, political subdivision of a state, or any interstate body.

"Pipe" means an impermeable hollow cylinder or tubular conduit that conveys or transports Regulated Substances, or is used for venting, filling, vapor recovery, or removing Regulated Substances.

"Professional Engineer" means "engineer", as defined in Title 24 Del. C., Chapter 28, *Professional Engineers*, namely, a person who by reason of his or her advanced knowledge of mathematics and the physical sciences, acquired by professional education and practical experience, is technically and legally qualified to practice Professional Engineering, and who is licensed by the Delaware Association of Professional Engineers.

"Property Damage" shall have the meaning given this term by applicable State law. This term shall not include those liabilities which, consistent with standard insurance industry practices, are excluded from coverage in liability insurance policies for property damage. However, such exclusions for property damage shall not include corrective action associated with releases from tanks which are covered by the policy.

"Provider of Financial responsibility" means an entity that provides financial responsibility to an Owner or Operator of an AST through one of the mechanisms listed in these Regulations, including a guarantor, insurer, risk retention group, surety, issuer of a letter of credit, issuer of a state required mechanism, or a state.

"RCRA" means the *Solid Waste Disposal Act*, as amended by the *Resource Conservation and Recovery Act of 1976*, as amended, [42 USC §6901 et seq.].

"Reconstruction" means any work necessary to reassemble an AST that has been dismantled and Relocated to a new site.

"Regulated Substance" means a liquid or gas that:

- contains one percent (1%) or more of a hazardous substance as defined in the *Comprehensive Environmental Response, Compensation and Liability Act of 1980* [42U.S.C. §9601(14)] and any amendments thereto; or
- contains 0.1 percent (0.1%) or more of a carcinogen as defined by EPA in the *Integrated Risk Information System* (IRIS) April 2002 and as updated; or
- is a petroleum product, or contains one percent (1%) or more of a petroleum product, or was originally derived from a petroleum or petroleum containing product, including crude oil or any fraction thereof, which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute); or
- contains Heating Fuel as defined in this Part; or
- is a substance determined by the Secretary through regulation to present a risk to public health or welfare or the environment if released into the environment.

"Release" means the spilling, leaking, discharging, leaching, or disposing of a Regulated Substance into, groundwater, surface water, soil, or air that is not permitted by law, regulation or permit.

"Release Prevention Barrier" means an Impervious barrier that serves to prevent the escape of a Regulated Substance or to contain or channel the released Regulated Substance for Leak Detection.

"Relocation" or **"Relocating"** or **"Relocated"** means removing the Regulated Substance from an AST, thoroughly cleaning the interior of the AST, moving the AST to a new location within a Facility without a transfer of ownership or moving the AST to a different Facility without a

transfer of ownership, installing the AST in its new location, and inspecting the AST prior to its continued use for the storage of a Regulated Substance.

"Remedial Action" means activities conducted to protect human health, safety, and the environment. These activities include but are not limited to evaluating risk, making no further action determinations, monitoring institutional and engineering controls, and designing and operating cleanup equipment.

"Removal" or **"Removing"** or **"Removed"** means taking the Regulated Substance from the AST and Ancillary Piping, thoroughly cleaning the interior of the AST and Ancillary Piping, completely displacing the AST and Ancillary Piping from its installed location, and rendering the AST and Ancillary Piping permanently non-useable or discontinuing use of the AST and Ancillary Piping as an AST and Ancillary Piping with the intent of not introducing a Regulated Substance into the AST and Ancillary Piping.

"Retrofit" or **"Upgrade"** means to modify an AST to meet standards contained in these Regulations.

"Sacrificial Anode Cathodic Protection System" means a system to control corrosion of a metal surface which entails installing an electrode of an electrochemical cell that will oxidize preferentially to the metal surface that has been made the cathode of the electrochemical cell.

"Secondary Containment" means a containment system designed and constructed to retain any Regulated Substance that leaves the primary containment including an AST and Ancillary Piping and prevent any Regulated Substance from reaching the surface water, groundwater, or adjacent land before cleanup occurs. Included are structures/ devices sufficiently impermeable to contain released Regulated Substances for a period of time sufficient for the cleanup and removal of captured material including;

(1) dikes, berms or retaining walls;
(2) curbing;
(3) diversion ponds, holding tanks, sumps;
(4) vaults;
(5) double-walled tanks;
(6) liners external to the tanks;
(7) other means as approved by the Department.

"Secretary" means the Secretary of the Department of Natural Resources and Environmental Control or a duly authorized designee.

"Shop Fabricated " means an AST which is constructed at a tank manufacturer's plant and transported to a Facility for installation.

“Site Assessment” means to measure for the presence of a Release where contamination is most likely to be present at an AST site. Selection of sample types, sample locations and measurement methods shall be based on the nature of the substance stored, the type of backfill, the depth to groundwater, and other factors appropriate for identifying the presence of a Release. A Site Assessment is not restricted to the property containing the AST System.

“Spark Extinguishing System” means a process in which the radiant energy of a spark or an ember is detected and the spark or ember is quenched.

“Spent Acid” or “Spent Caustic” means an acid or caustic Regulated Substance which was used in a process where it was mixed with, or reacted with, or used as a catalyst to produce, or may have come in contact with a Flammable Liquid as defined by NFPA 30.

“State” means the State of Delaware.

“Substantial Business Relationship” means the extent of a business relationship necessary under applicable state law to make a guarantee contract issued incident to that relationship valid and enforceable. A guarantee contract is issued "incident to that relationship" if it arises from and depends on existing economic transactions between the Guarantor and the Owner or Operator.

“Substantial Governmental Relationship” means the extent of a governmental relationship necessary under applicable state law to make an added guarantee contract issued incident to that relationship valid and enforceable. A guarantee contract is issued "incident to that relationship" if it arises from a clear commonality of interest in the event of an AST Release such as coterminous boundaries, overlapping constituencies, common ground-water aquifer, or other relationship other than monetary compensation that provides a motivation for the Guarantor to provide a guarantee.

“Tangible Net Worth” means the tangible assets that remain after deducting liabilities; such assets do not include intangibles such as goodwill and rights to patents or royalties. For purposes of this definition, "assets" means all existing economic benefits obtained or controlled by a particular entity as a result of past transactions.

“Tank Management Section” means the Tank Management Section of the Division of Waste and Hazardous Substances in the Delaware Department of Natural Resources and Environmental Control.

“Termination” means only those changes that could result in a gap in financial responsibility coverage as where the insured has not obtained substitute coverage or has obtained substitute financial responsibility coverage with a different retroactive date of the original policy.

“Ullage” means the volume of a Fixed Roof AST which does not contain a Regulated Substance in liquid form. It is synonymous with the vapor space.

“Underground Pipe” means piping or portions of piping meeting all of the following conditions:

(1) Is physically underground and cannot be visually inspected; and
(2) Conveys or transports a Regulated Substance stored in the AST; and
(3) Is located between the AST and the first vessel, tank or other piece of equipment (other than piping components such as pumps, valves and the Dispensing System) that does not meet the definition of an AST.

“UL” means Underwriters Laboratories, Inc.

“Upgrade” or **“Retrofit”** means to modify an AST to meet standards contained in these Regulations.

“Upper Flammable Limit (UFL)” means the highest concentration of a Flammable substance in which Combustion can propagate in the presence of an Oxidant.

“Vault” means a structure that completely encloses the tank and shall be constructed of materials compatible with the Regulated Substance to be contained in the AST.

“Verifiable Service” means delivery of mail by means of a delivery service that provides verification upon delivery.