Maryland
Department of the Environment

UST Inspector Reference Handbook

Updated Handbook can be viewed on MDE web at:

http://www.mde.state.md.us/Programs/LandPrograms/Oil_Control/USThome/ustcertification_programs.asp

Maryland Department of the Environment
UST Inspector Reference Handbook
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UST OPERATIONS INSPECTOR REFERENCE HANDBOOK
Revised 07/26/2006

****Disclaimer****
The Maryland Department of the Environment does not endorse any company or product that is mentioned or shown in this handbook. Any companies, names, facilities, services, or commercial products in this handbook are shown only as a written or visual example.

INTRODUCTION

To ensure the protection of groundwater resources and public health from the release of regulated substances stored in underground storage tank systems (USTs) the Maryland Department of the Environment (MDE) has enacted a specialized tank inspection program. Concerned that Maryland has had to respond to several high profile groundwater contamination cases within the State, the Secretary of the Maryland Department of the Environment required the Oil Control Program (OCP) to review storage tank procedures and recommend new leak prevention measures. An increased inspection program is one of the measures proposed. The Secretary recently indicated his support of the program by announcing: "The release of products from underground storage tanks are a national concern. By moving forward with this inspection program Maryland will provide additional safeguards to our citizens and the environment".

Beginning in July 2006 the owner of an underground storage system that stores motor fuel will be required, upon notification from MDE, to have the storage system inspected by a MDE certified inspector. The inspector must visit the storage tank facility and complete a detailed site inspection form provided by MDE. The inspector will evaluate items such as tank and piping release detection, overfill/spill prevention, and system corrosion protection as well as facility housekeeping and other compliance concerns. To confirm continued compliance with Maryland regulations, a facility will have follow-up inspections every three years.

The owner, operator, or person-in-charge of an underground storage tank (UST), shall register with the Department the UST(s) on a form provided by the Department in accordance with Code of Maryland Regulations (COMAR) 26.10.03.09A. Registration forms may be obtained on the MDE web. To print a copy of the form and or the instructions go to MDE web at: http://www.mde.state.md.us/Programs/LandPrograms/Oil_Control/PermitsLicenses/index.asp, this address will take you to "Waste Permit Applications and Instructions"; scroll down to "Oil Control Program"; click on "Tank Registration Form" or "Instructions"; you may also contact the OCP at (410) 537-3442 to receive copies of these documents.

UST systems required to be registered with the Department are: Motor Fuel (gasoline and diesel fuel); Used Oil; Bulk Heating Oil Storage, Kerosene; Chemical (listed on US EPA Hazardous Substance List); and heating oil for commercial consumptive use, farm or residential UST systems with 1,101-gallons or more capacity used for storing motor fuel or heating oil are also required to be registered with the Department.

Prior to arriving at the facility to be inspected you should contact the owner or operator and discuss the information needed to complete the inspection. Suggested items are:

1. The MDE facility UST Registration number: This can be obtained from the UST tank registration form, from MDE, or from the inspection notice received from MDE.
2. Type of material of construction used for the tanks and piping.
3. A copy of the underground tank pollution liability insurance policy or other financial responsibility method information (a copy must be submitted to MDE with the completed inspection report).
4. The last 12 months of daily inventory and monthly reconciliation records. Emergency generator and heating oil tanks (on-site consumptive use) are exempt from this requirement.
5. The last tank and piping tightness test results (must have test results even if the test is from the initial UST installation).
6. Copies of annual field test results for the pressurized line leak detector(s).
7. The last 12-months of release detection test results/records for the tank(s) and piping. Emergency generator tanks and heating oil tanks (on-site consumptive use) are exempt from this requirement.
8. Cathodic Protection test results for metal UST systems.
9. Helium test results if the UST system is located in a High Risk Groundwater Use Area. "High Risk Groundwater Use Area" (HRGUA) means all areas served by individual wells. Existing UST systems installed prior to 1/26/05 in Baltimore, Carroll, Cecil, Frederick and Harford counties or New UST systems installed after 1/26/05 in Anne Arundel, Baltimore, Carroll, Cecil, Charles, Calvert, Frederick, Harford, Howard, Montgomery, and Prince George's counties.
10. Spill catchment basin and containment sump test results.
11. Owner/Operator manuals for electronic automatic tank gauge or electronic monitoring systems.
12. If present, monitoring well and potable well groundwater sample results.

13. Stage II vapor recovery test results for gasoline UST systems.
14. Dispenser and monitoring well keys must be available on-site.

If the owner does not have appropriate documentation, encourage the owner to research the information with previous owners or the UST system installer. When more than one type of piping is present, list the most prevalent section of piping, (example): the majority of the piping material is flexible double-wall for 3-gasoline USTs, but the diesel tank has double-wall fiberglass reinforced plastic (FRP) piping, the most prevalent section of piping in this case would be flexible double-wall because it is the majority of the piping systems. Describe the complete piping details in the comment section.

The inspector shall verify as much of the system as is visibly possible without excavation (i.e. open up and inspect all catchment basins, containment sumps, inspect all tank top openings, look in fill pipe openings and under dispensers). In addition a complete walk through of the facility is required to evaluate other petroleum related operations (i.e. drum storage, above ground storage tanks for spillage or proper stabilization and house keeping issues).

When multiple types of dispensing pipes are connected to a single tank each piping system must be compliant with corrosion and release detection requirements.

Emergency generator tanks are exempt from release detection requirements. Release detection is recommended, but the records are not required to be examined by the inspector.

All components and devices connected to an underground storage tank system must be maintained and operable. (Example: If ATG is connected however no longer operable then ATG must be repaired or removed from the UST system).

COMPLETING THE REPORT

➢ Section 1: General Information (COMAR 26.10.03.09)

ONLY A PERSON WITH A VALID MARYLAND DEPARTMENT OF THE ENVIRONMENT UST INSPECTOR CERTIFICATION SHALL COMPLETE THIS REPORT.

Type or print clearly with a ballpoint pen (black or blue ink) all entries. Do not use pencil. Fill out the form completely. All required signatures and initials (pages 2, 12 and 24) must be in ink. **Forms submitted incomplete or not legible will fail the evaluation and the owner will be notified to resubmit the form or reinspect the UST system.**

When more than 5 regulated tanks are present at the facility, use additional forms. Check "Yes" at the bottom of page 1 (*Addendum Form Used*) if additional forms are required/used.

When more than 5 dispensers are present, under section 4b. use additional copies of page 6 only.

Provide as much detail as possible in the comment sections. Describe all modifications or corrections to the UST system and the date work was performed.

Fill in the MDE Facility I.D. number at the bottom of each page.

The Maryland Department of the Environment's (MDE), Facility Tank Summary can be obtained from the tank owner, which will be mailed along with the MDE notification to have their facility inspected. This valuable UST information can be used to help complete the inspection report.

Check the Registration Certificate. The UST Registration Certificate is required to be displayed or made available on site and provides a list of all active USTs registered with the Department.

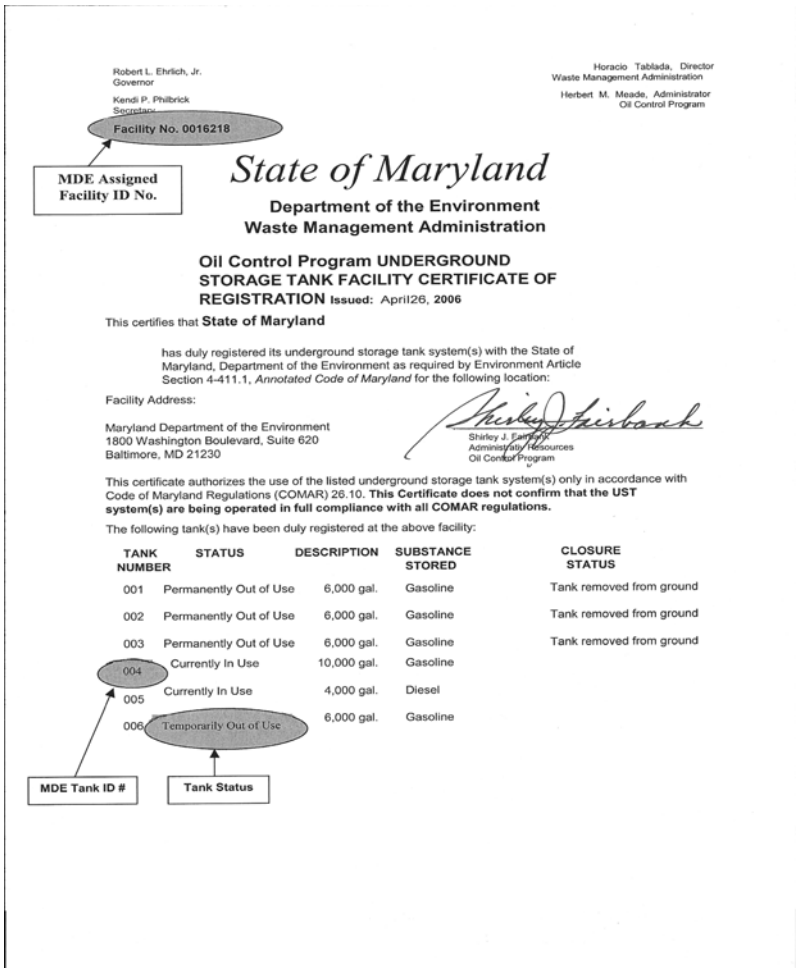
If **incorrect** information is listed on the certificate, enter the correct information on the inspection form and circle it to highlight the change. The **owner** must submit an amended Registration Form to add or remove UST systems. The Department's UST database will be updated with data and information provided in the facility inspection report and any amended facility registration forms submitted.

Facility Name: Include all information on the facility: Name, Location Address, City and Telephone Number.

Owner Name: Include all information for the UST owner: Name, Mailing Address, City, State, Zip Code, Telephone Number, Fax Number and E-mail.

Operator Name: Include all information for the UST operator: Name, Telephone Number, Fax Number, and E-mail. If the operator is the same person or company as the owner, print or type in Operator Name: " Same as Owner".

MDE Facility ID Number: Include the MDE facility identification number. This is a unique number issued to each facility from the MDE registration form submitted by the owner. The MDE facility ID number can be found on the UST Facility Certificate of Registration (sample below), the UST Summary Report provided to the owner or by contacting Waste Management Administration's Oil Control Program at (410) 537-3442.



Robert L. Ehrlich, Jr.
Governor

Kendi P. Philbrick
Secretary

Horacio Tablada, Director
Waste Management Administration

Herbert M. Meade, Administrator
Oil Control Program

Facility No. 0016218

MDE Assigned Facility ID No.

State of Maryland

Department of the Environment
Waste Management Administration

Oil Control Program UNDERGROUND STORAGE TANK FACILITY CERTIFICATE OF REGISTRATION Issued: April26, 2006

This certifies that **State of Maryland**

has duly registered its underground storage tank system(s) with the State of Maryland, Department of the Environment as required by Environment Article Section 4-411.1, *Annotated Code of Maryland* for the following location:

Facility Address:

Maryland Department of the Environment
1800 Washington Boulevard, Suite 620
Baltimore, MD 21230

Shirley J. Fairbank
Administrative Resources
Oil Control Program

This certificate authorizes the use of the listed underground storage tank system(s) only in accordance with Code of Maryland Regulations (COMAR) 26.10. **This Certificate does not confirm that the UST system(s) are being operated in full compliance with all COMAR regulations.**

The following tank(s) have been duly registered at the above facility:

TANK NUMBER	STATUS	DESCRIPTION	SUBSTANCE STORED	CLOSURE STATUS
001	Permanently Out of Use	6,000 gal.	Gasoline	Tank removed from ground
002	Permanently Out of Use	6,000 gal.	Gasoline	Tank removed from ground
003	Permanently Out of Use	6,000 gal.	Gasoline	Tank removed from ground
004	Currently In Use	10,000 gal.	Gasoline	
005	Currently In Use	4,000 gal.	Diesel	
006	Temporarily Out of Use	6,000 gal.	Gasoline	

MDE Tank ID #

Tank Status

Date of Inspection: List the date of inspection month/day/year.

Current UST Registration Certificate on display or available on site: Each registered facility should have displayed or on site the Underground Storage Tank Facility Certificate of Registration.

All applicable tanks registered: Confirm that all regulated tanks are registered with the MDE before continuing the inspection. If an unregistered tank is discovered, the owner must submit a registration form to the Department immediately. To print a copy of the form and or the instructions go to MDE web at: http://www.mde.state.md.us/Programs/LandPrograms/Oil_Control/PermitsLicenses/index.asp, this address will take you to "Waste Permit Applications and Instructions"; scroll down to "Oil Control Program"; click on "Tank Registration Form" or "Instructions"; you may also contact the OCP at (410) 537-3442 to receive copies of these documents.

Note: It is a violation of Maryland law and regulation to receive product to and dispense product from an UST not registered with the Department. (COMAR) 26.10.03.09G.

Site located in High Risk Groundwater **Use Area *(HRGUA):**
*means all areas served by individual wells for existing UST systems installed prior to 1/26/05 in Baltimore, Carroll, Cecil, Frederick and Harford counties or New UST systems installed on or after 1/26/05 in Anne Arundel, Baltimore, Carroll, Cecil, Charles, Calvert, Frederick, Harford, Howard, Montgomery, and Prince George's counties.

Owner/Operator has provided documentation to demonstrate Financial Responsibility: Discuss financial responsibility (FR) with the owner, operator, or owner's representative. MDE recognizes the same FR requirements described in the Code of Federal Regulations (40 CFR 280, Subpart H).

Proof of financial responsibility must be provided by the owner. Attach a copy of the declaration page or page that demonstrates the proper UST pollution liability insurance coverage to the inspection report.

> **Per Occurrence Coverage**: $1 million or $500,000 if product throughput is 10,000-gallons or less.
> **Aggregate Coverage:** $1 million (100 or fewer tanks) or $2 million (more than 100 tanks).

➢ Section 1: Inspection Summary

The Inspection Summary cannot be completed until the facility has been thoroughly inspected. Complete this section at the end of the inspection. Providing wrong or unsubstantiated information can lead to failure of the inspection evaluation and follow up by the Department for possible enforcement action for violations of COMAR.

The Inspection Summary section is where the Inspector will record the final result for each of the Report Sections, using these codes: (P) (PC) (F) (NA). (See below).

Tank and Piping ID Number as listed on MDE Registration Form
Write the Tank # from the MDE UST registration form or from the Underground Storage Tank Facility Certificate of Registration in the appropriate heading throughout the inspection report.

Tank Numbering System — Tank identification numbers are very important; they allow MDE to properly track each tank at the facility. Care must be exercised during the inspection to use the appropriate tank numbers shown on the registration form. Only use the tank number that MDE assigned. MDE tracks **All** tanks at a facility (including historical USTs removed from the ground) and numbers are assigned in sequence of registration.

Owner Tank ID # (if different): If the Owner uses a different tank number other than the MDE Facility Tank ID number, enter it here. A number of UST owner/operators in Maryland have their own identifying number system for their USTs. List the owner tank ID# if different than MDE's number.

Section No.: This column lists the applicable section inside the inspection report that coincides with each summary heading.

Fill out each section in the Inspection Summary using these codes: (**P**)=Pass Inspection, (**PC**)=Pass Inspection with Corrections, (**F**)=Fail Inspection, (**NA**)=Not Applicable. Use one of the four codes **P**, **PC**, **F**, **NA** in the appropriate block for each tank system.

The inspection for each section must be completed prior to completing the Inspection Summary section. At the end of each individual section the inspector must evaluate **if** that section: Passes Inspection, put a (**P**) in the appropriate block; if it failed a section(s) but corrections were made at the time of inspection or at a later date (before the Report was submitted to MDE), then it passes inspection with/corrections (**PC**); if a section fails and is not corrected before the Report is submitted to MDE, then that section(s) fails (**F**) inspection or if a section(s) are not applicable then put **N/A**.

Status (Temporarily Out of Use): (Section 3): This section only applies to USTs that are "temporarily closed" or UST systems that are "Taken Out of Service" and the tank has been emptied. If the UST systems are in-use enter NA in this box otherwise enter for each tank: (P) Pass, (PC) Pass with/Corrections, (F) Fail or (NA) Not Applicable.

Containment Sump Inspection: (Section 4a): This section only applies to USTs that have Containment Sumps. If the UST system inspected does not have containment sump(s) enter NA in this box otherwise enter for each tank: (P) Pass, (PC) Pass with/Corrections, (F) Fail or (NA) Not Applicable.

Containment Sumps can be used in many areas of the UST system to provide access to UST components and are typically found in the following areas of a UST system; below a dispenser; tank top riser pipe; housing the submersible turbine pump; vent riser; Stage II vapor recovery condensate pod; and for marina applications, to house and provide immediate access to the emergency shut-off valves near the approach to the wharf, pier, dock or outside any diked area.

Dispenser Inspection: (Section 4b): Enter for each tank: (P) Pass, (PC) Pass with/Corrections, (F) Fail or (NA) Not Applicable from the *Dispenser Passes Inspection* evaluation box at the end of this Section.

Tank Top Inspection: (Section 5a): Enter for each tank: (P) Pass, (PC) Pass with/Corrections, (F) Fail or (NA) Not Applicable from the *Tank Top Components Passes Inspection* evaluation box at the end of this section.

Vent Pipe Inspection: (Section5b): Enter for each tank: (P) Pass, (PC) Pass with/Corrections, (F) Fail or (NA) Not Applicable from the *Vent Passes Inspection* evaluation box at the end of this section.

Spill Prevention: (Section 6a): Enter for each tank: (P) Pass, (PC) Pass with/Corrections, (F) Fail or (NA) Not Applicable from the *Spill Device Passes Inspection* evaluation box at the end of this section.

Overfill Prevention: (Section 6b): Enter for each tank: (P) Pass, (PC) Pass with/Corrections, (F) Fail or (NA) Not Applicable from the *Overfill Device Passes Inspection* evaluation box at the end of this section.

Stage I Vapor Recovery: (Section 7a) If the UST system inspected does not have Stage I Vapor Recovery enter NA in this box otherwise, for each tank enter: (P) Pass, (PC) Pass with/Corrections, (F) Fail or (NA) Not Applicable from the *Stage I Passes Inspection* evaluation box at the end of this section.

See Section 7c. for additional requirements regarding completing Stage I vapor recovery forms that must be submitted to Air and Radiation Management Administration as part of this inspection.

Stage II Vapor Recovery: (Section 7b) If the UST system inspected does not have Stage II Vapor Recovery enter NA in this box otherwise for each tank enter: (P) Pass, (PC) Pass with/Corrections, (F) Fail or (NA) Not Applicable from the *Stage II Passes Inspection* evaluation box at the end of this section.

See Section 7c. for additional requirements regarding completing Stage II vapor recovery forms that must be submitted to Air and Radiation Management Administration as part of this inspection

Piping Construction and Corrosion Protection: (Section 8): The inspector should closely evaluate this section for information pertaining to the piping system only. If the piping does not require corrosion protection check (√) the "Not Applicable" box in the top right corner of the section and enter NA in this box. Enter in the box (P) Pass, (PC) Pass with/Corrections, (F) Fail or (NA) Not Applicable from the *Non-Metal Construction Passes Inspection* or *Galvanic Cathodic Protection Passes Inspection* or *Impress Current Cathodic Protection Passes Inspection* box at the end of the applicable Corrosion Protection section.

If metallic pipe is in contact with the soil and has no cathodic protection notify MDE Oil Control Program at 410-537-3442.

Tank Construction and Corrosion Protection: (Section 8): The inspector should closely evaluate this section for information pertaining to the tank system only. If the tank does not require corrosion protection check (√) the "Not Applicable" box in the top right corner of the section and enter NA in this box. Enter in the box (P) Pass, (PC) Pass with/Corrections, (F) Fail or (NA) Not Applicable from the *Non-Metal Construction Passes Inspection* or *Galvanic Cathodic Protection Passes Inspection* or *Impress Current Cathodic Protection Passes Inspection* box at the end of the applicable Corrosion Protection section.

If metallic tank is in contact with the soil and has no cathodic protection notify MDE Oil Control Program at 410-537-3442.

Tightness Testing: (Section 9): This section applies to testing of the tank and piping system(s). If the UST system inspected does not require testing enter NA in this box. Enter in the box otherwise for each system enter:(P) Pass, (PC) Pass with/Corrections, or (F) Fail, from the *Tightness Testing Passes Inspection* box at the end of this section.

Facility House Keeping: (Section 10a) Enter in the box (P) Pass, (PC) Pass with/Corrections, (F) Fail, or (NA) Not Applicable from the *Housekeeping Passes Inspection* evaluation box at the end of this section.

Tank Field Monitoring Pipes and Site Wells: (Section 10b) Enter in the box (P) Pass, (PC) Pass with/Corrections, (F) Fail, or (NA) Not Applicable from the *Monitoring Pipes and Site Wells Pass Inspection* evaluation box at the end of this section.

Inventory Control: (Section 11): If the "Not Applicable" box in the top right corner of the section is checked (√) enter NA in this box. Enter in the box (P) Pass, (PC) Pass with/Corrections, (F) Fail, or (NA) Not Applicable from the *Inventory Control Passes Inspection* evaluation box at the end of this section.

Release Detection Summary (Tank Method): (Section 12): Inspector must determine and evaluate on page 18 of the inspection form the primary method of Release Detection for the tank(s) only. Proceed to the applicable Section (12a–f) indicated on the right hand column for the primary method chosen. Enter for each tank (P) Pass, (PC) Pass with/Corrections, (F) Fail, or (NA) Not Applicable from the *ATG, Vapor Monitoring, Interstitial Monitoring Statistical Inventory, Groundwater Monitoring or Manual Tank Gauging Passes Inspection* evaluation box at the end of the appropriate primary method section.

Release Detection Summary (Pipe Method): (12) Inspector must determine and evaluate on page 18 the primary method of Release Detection for the pressurized or suction product pipe(s) only. Proceed to the applicable section (9, 12c, 12e, 12g, 12h) indicated on the right hand column for the pipe primary method chosen. If the "Not Applicable" box in the top right corner of the primary method section is checked (√) enter NA in this box. Enter in the box (P) Pass, (PC) Pass with/Corrections, (F) Fail or (NA) Not Applicable from the *Passes Inspection* evaluation box at the end of the appropriate primary method section.

Note: More than one primary method section may be applicable for pressurized piping systems.

Inspector and Owner/Operator has signed page 2 and initialed page 24: The inspector and the owner/operator shall sign page 2 and initial the bottom of page 24. Signatures and initials are required to pass the evaluation. If the owner/operator fails or refuses to sign the Inspection Report explain in General Comments on page 24. Forms submitted to MDE with "No" checked will fail the evaluation for this section.

Addendum Form Used: If any addendum pages are used including additional pages for multiple dispenser (page 6) inspections, check yes, if no additional pages are used check no.

➢ Section 1: General Comment

Making false statements and tampering with monitoring devices.
DON'T DO IT! You could lose your certification and have civil penalties imposed and or be criminally prosecuted.

§ 4-417 Environment Article, Annotated Code of Maryland

(c) ***False statements in required documents; tampering with monitoring devices.*** Any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under this title, or by any permit, rule, regulation or order issued under this title, or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this title or by any permit, rule, regulation, or order issued under this title, upon conviction, is subject to a fine not exceeding $10,000, or by imprisonment not exceeding six months or both.

Certified Inspector: print or type all Certified Inspector information

Inspector's full name:
Company Name employing inspector:
Maryland Inspector Certification Number:
Expiration Date Inspector Certification Card:
Telephone Number: Office- (required); Cell- (optional)
Facsimile Number: Provide fax number for the Certified Inspectors office.
E-mail address: The Department will provide future inspector updates and coordinate site information regarding ongoing or pending inspections.

*"**High Risk Groundwater Use Area**" (HRGUA) means all areas served by individual wells and includes all Existing UST systems installed prior to 1/26/05 in Baltimore, Carroll, Cecil, Frederick and Harford counties or New UST systems installed after 1/26/05 in Anne Arundel, Baltimore, Carroll, Cecil, Charles, Calvert, Frederick, Harford, Howard, Montgomery, and Prince George's counties. See **Code of Maryland Regulations (COMAR) 26.10.02.03 for further information.**

<u>The Department recommends an Inspector</u> and/or <u>the Company</u> employing them have liability insurance that covers "errors and omissions". Also a self-employed inspector or the Company employing the inspector must have a current State License for business.

Signatures of both the inspector and owner/operator or designated representative are required on page 2 and initial page 24 of the report. The inspector's signature is also required on page 12. Carefully read the certification before signing. Have the owner/operator or designated representative read before signing.

MDE requires the owner of a storage system to perform an inspection within thirty (30) days of notification from MDE and a copy of the report must be submitted to MDE within 30 days from the date of the inspection. Deficiencies found must be corrected within 30 days of the inspection.

Mail the inspection report to:

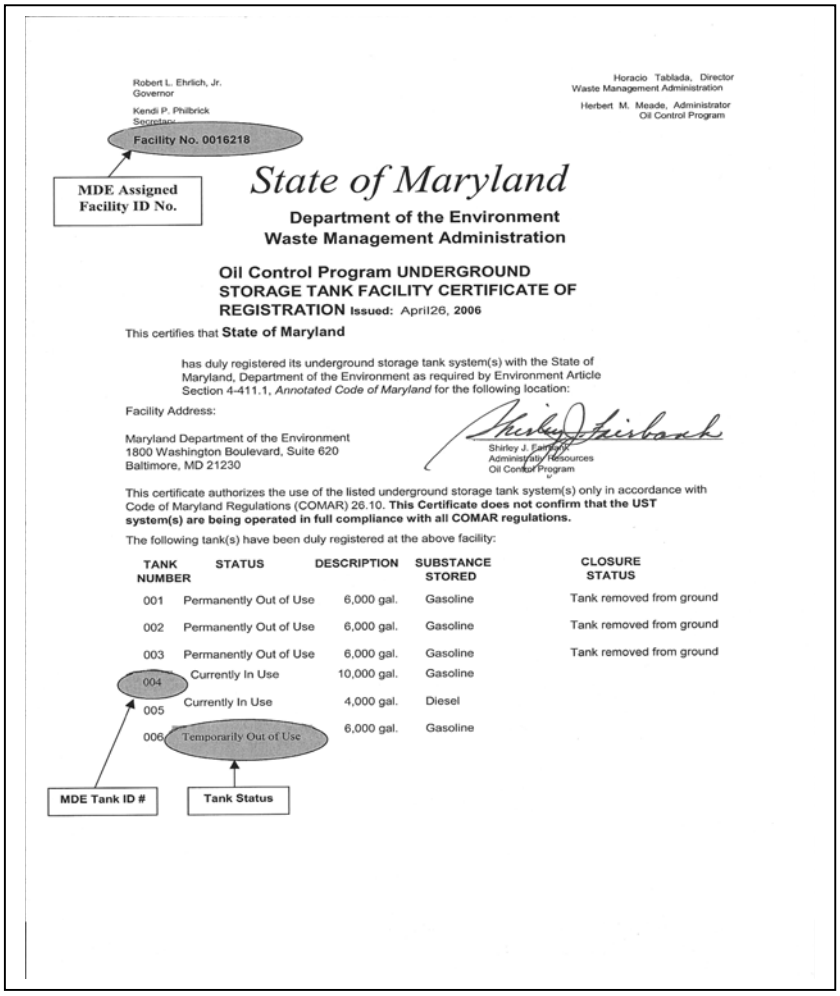
MDE OIL CONTROL PROGRAM

1800 Washington Blvd., Suite 620
Baltimore MD 21230-1719

Do not fill in the box that is labeled "MDE USE ONLY".

➢ Section 2: Tank System Information (COMAR 26.10.03.01&.02)

Tank and Piping (MDE ID#): Write the tank # from the MDE UST registration form or from the Underground Storage Tank Facility Certificate of Registration on site. Only use the tank number assigned by MDE . Maintain the same MDE assigned tank number for each tank inspected in the applicable section(s) throughout the Report. A sample Certificate of Registration and Facility Summary Report is provided below.



Robert L. Ehrlich, Jr.
Governor

Kendi P. Philbrick
Secretary

Horacio Tablada, Director
Waste Management Administration

Herbert M. Meade, Administrator
Oil Control Program

Facility No. 0016218

MDE Assigned Facility ID No.

State of Maryland

Department of the Environment
Waste Management Administration

Oil Control Program UNDERGROUND STORAGE TANK FACILITY CERTIFICATE OF REGISTRATION Issued: April26, **2006**

This certifies that **State of Maryland**

has duly registered its underground storage tank system(s) with the State of Maryland, Department of the Environment as required by Environment Article Section 4-411.1, *Annotated Code of Maryland* for the following location:

Facility Address:

Maryland Department of the Environment
1800 Washington Boulevard, Suite 620
Baltimore, MD 21230

Shirley J. Fairbank
Administrative Resources
Oil Control Program

This certificate authorizes the use of the listed underground storage tank system(s) only in accordance with Code of Maryland Regulations (COMAR) 26.10. **This Certificate does not confirm that the UST system(s) are being operated in full compliance with all COMAR regulations.**

The following tank(s) have been duly registered at the above facility:

TANK NUMBER	STATUS	DESCRIPTION	SUBSTANCE STORED	CLOSURE STATUS
001	Permanently Out of Use	6,000 gal.	Gasoline	Tank removed from ground
002	Permanently Out of Use	6,000 gal.	Gasoline	Tank removed from ground
003	Permanently Out of Use	6,000 gal.	Gasoline	Tank removed from ground
004	Currently In Use	10,000 gal.	Gasoline	
005	Currently In Use	4,000 gal.	Diesel	
006	Temporarily Out of Use	6,000 gal.	Gasoline	

MDE Tank ID #

Tank Status

Facility Summary for Facility ID # 16218

Owner Name and Address: State of Maryland 1800 Washington Boulevard, Suite 620, Baltimore, MD 21230

Facility ID	Location Name	Location Street Address	Location City	Zip
16218	Maryland Department of the Environment	1800 Washington Boulevard, Suite 620	Baltimore	21230

Tank ID / Status	Installed / Age (yr)	Product / Capacity	Tank Mat'l of Construction / Secondary Option	Piping Material / Secondary Option	Piping Type	Tank Release Detection / Piping Release Detection	FR Met / Over/Spill/CP
001 Permanently Out of Use	1/1/1979 27	Gasoline 6,000	Asphalt Coated or Bare Steel None	Bare Steel None	Pressurized	A B C D E F G H I J K L / L L L L L L L L	No / No No No
002 Permanently Out of Use	1/1/1979 27	Gasoline 6,000	Asphalt Coated or Bare Steel None	Bare Steel None	Pressurized	A B C D E F G H I J K L / L L L L L L L L	No / No No No
003 Permanently Out of Use	1/1/1979 27	Gasoline 6,000	Asphalt Coated or Bare Steel None	Bare Steel None	Pressurized	A B C D E F G H I J K L / L L L L L L L L	No / No No No
004 Currently In Use	4/1/2005 01	Gasoline 10,000	Composite (Steel w/ FRP) Double-Walled	Fiberglass Reinforced Plastic Double-Walled	Pressurized	A B C D E F G H I J K L / C L C C C L C L	No / Yes Yes Yes
005 Currently In Use	4/1/2005 01	Diesel 4,000	Composite (Steel w/ FRP) Double-Walled	Fiberglass Reinforced Plastic Double-Walled	Pressurized	A B C D E F G H I J K L / C L C C C L C L	No / Yes Yes Yes
006 Temporarily Out of Use	4/1/2005 01	Gasoline 6,000	Composite (Steel w/ FRP) Double-Walled	Fiberglass Reinforced Plastic Double-Walled	Pressurized	A B C D E F G H I J K L / C L C C C L C L	No / Yes Yes Yes

Tank/Piping Release Detection Codes

A Manual Tank Gauging	C Inventory Control	E Vapor Monitoring	G Interstit. Dbl-Wall Monitor	I SIR	K Deferred
B Tank/Line Tightness Testing	D ATG/Auto Line LD	F GW Monitoring	H Interstit. Sec. Con. Monitor	J Other Methods	L Not Listed

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Status: Enter the appropriate code for each tank: **I**-in use or **T**-temporarily out of use. (**I**)-in use means a storage system that is storing a regulated substance of greater than 1 inch and is dispensing or processing product through the tank system. (**T**)- temporarily out-of-use/temporarily closed means a storage tank that has been emptied of all liquids to 1 inch or less or a system that is no longer dispensing or processing product through the tank system. Section 3 of the inspection report must be completed for all USTs temporarily out of use or temporarily closed.

Date of Installation: Write in the month and year (example 04-06) the tank system was installed for each tank. The installation date must be as accurate as possible to determine upgrade, release detection and testing requirements. The date may be found on the facility summary report (Sample Summary Report is provided above). Encourage the tank owner to research this information before you arrive at the site. If the owner is unable to provide an installation date, the Department will evaluate with the most stringent requirement based on the regulated substance stored.

Capacity: Write in the capacity (gallons) of each tank (example 10,000).

<u>Product</u>: Enter the product code for each tank from Chart A. If the tank is a compartment tank list each product code separately for each compartment.

CHART A

CODE	PRODUCT DESCRIPTION
1	Diesel
2	Gasohol
2a	Ethanol
2b	Methanol
3	Gasoline
4	Hazardous Substance
5	Heating Oil # 2
5a	Heating Oil # 4
5b	Heating Oil # 5
5c	Heating Oil # 6
6	Kerosene
7	Mixture- (two-types of liquids)
8	Used Oil
9	Unknown
10	Other
11	Not Listed

<u>Tank Construction Material</u>. Enter the tank material description code for each tank from Chart B.

CHART B

CODE	TANK MATERIAL DESCRIPTION
1	Asphalt Coated or Bare Steel
2	Cathodically Protected Steel
3	Composite (Steel w/FRP)
4	Concrete
5	Epoxy Coated Steel
6	Fiberglass Reinforced Plastic (FRP)
7	Polyethylene Tank Jacket
8	Unknown
9	Other
10	Not Listed

Compartment Tank: Yes or no. If no write "no" in the box for the tank being inspected. If yes, list the capacity (gallons), separately for each compartment (example 6,000/4,000).

Double-Wall Tank: Is the tank being inspected double-wall? Write yes or no in the box for each tank.

Piping Type: Write **(S)** for suction piping system or **(P)** for pressurized piping system. The inspector can identify the piping type by the location of the pump. A pump located under a dispenser or at a boiler is a suction piping system. A submersible turbine pump mounted on a riser pipe on the underground storage tank is a pressurized piping system.

Piping Construction Material. Enter the material description code for each pipe from Chart C for each tank.

CHART C

CODE	PIPING MATERIAL DESCRIPTION
1	Bare Steel
2	Galvanized Steel
3	Fiberglass Reinforced Plastic (FRP)
4	Copper
5	Flexible Plastic
6	Unknown
7	Other
8	Not Listed
9	No Piping

Double-Wall Piping: Answer yes or no for each tank if the primary product piping system is double-wall. **Note:** All piping systems (i.e. product, vent, vapor recovery remote fill pipes, manifold bars, etc.) installed after January 26, 2005 shall be installed in a UL listed or Department approved secondary containment system (COMAR 26.10.03.02A).

Outer Wall Pipe Construction Material: For double-wall piping systems enter the piping outer wall material code for each piping system using the code in Chart C for each tank.

CHART C

CODE	PIPING MATERIAL DESCRIPTION
1	Bare Steel
2	Galvanized Steel
3	Fiberglass Reinforced Plastic (FRP)
4	Copper
5	Flexible Plastic
6	Unknown
7	Other
8	Not Listed
9	No Piping

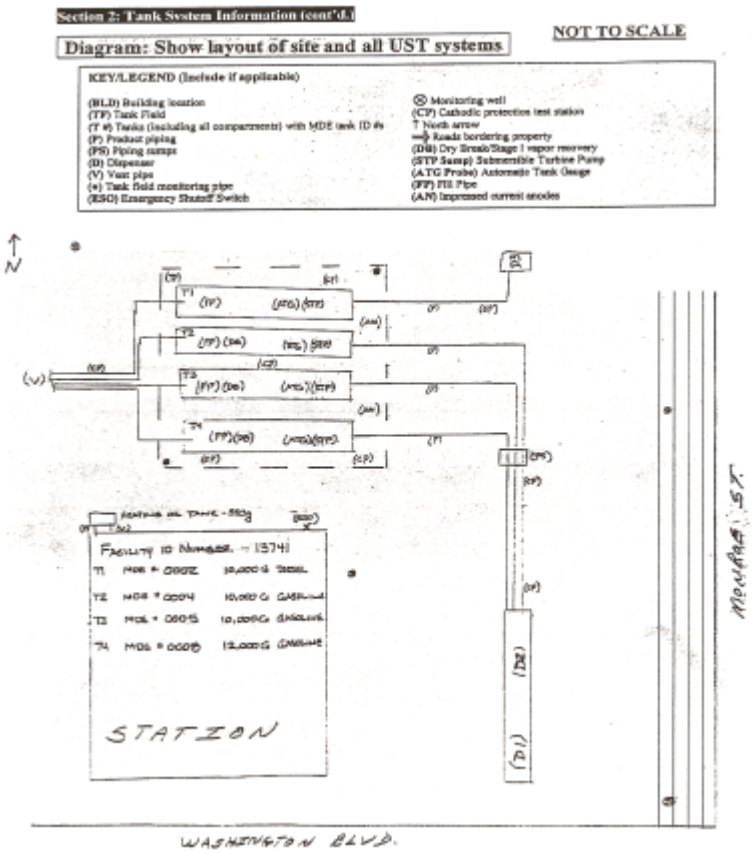
Emergency Power Generator UST: Does the underground storage tank being inspected store oil solely for the use to supply an emergency power generator? Answer yes or no for each tank (COMAR 26.10.02.02C(2)).

Global Position Signal. For each tank field at the facility, collect a global positioning signal for latitude and longitude from a global positioning system (GPS) receiver standing as close as possible on the center of the tank field. Record the coordinates from the receiver in the appropriate box. The information collected from these boxes will be used in a Geographic Information System (GIS) for UST mapping. Up to three tank fields can be used on page 3, **list tank MDE ID # for each tank field according to MDE Registration Form.** Use the MDE Registration information to obtain the tank ID number for each tank field location. List each MDE assigned tank number that is in each separate tank field in the appropriate block.

➢ Section 2: Tank System Information (cont'd)

Diagram: Show layout of site and all UST systems.

Draw a site sketch of the facility identifying all pertinent structures and UST features using the Key/Legend on the inspection form for: buildings, tank(s) and or tank field locations, product piping runs if known, piping sump(s), dispenser(s), vent line(s), tank field monitoring pipe(s) locations, emergency shutoff switch, cathodic protection test station(s), north arrow, roads bordering property, dry break/Stage I vapor recovery riser, submersible turbine pump (STP) sump, automatic tank gauge riser, fill pipe riser, any impressed current anodes and any other items or devices that would be useful to show.



➢ Section 3: Tank Temporarily Closed or Taken Out of Service (COMAR 26.10.10)

Inspector must evaluate each tank system to determine if the tank is in-use or temporarily closed, or taken out of service in accordance with COMAR 26.10.10.01. If all UST systems at the facility are in-use check (√) "Not Applicable" in the top right corner of the form and proceed to Section 4. Any tank system "temporarily closed" or "taken out of service" complete Section 3 by entering in the boxes (P) Pass, (PC) Pass with/Corrections, (F) Fail, or (NA) Not Applicable for each tank

Temporary Closure

(COMAR 26.10.10.01A) When an UST system is temporarily closed, owners and operators shall continue operation and maintenance of corrosion protection system in accordance with COMAR 26.10.04.02, and any release detection method in accordance with COMAR 26.10.05. However, release detection is not required as long as the UST system is empty. The UST system is empty when all materials have been removed using commonly employed practices so that no more than 2.5 centimeters (approximately 1 inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remain in the system. COMAR 26.10.08 and 26.10.09 shall be complied with if a release is suspected or confirmed.

Basically, a UST system that has not been upgraded or in operational compliance with Release Detection and Corrosion Protection in accordance with COMAR 26.10.04.02 and 26.10.05 respectively may not be temporarily out-of-service for a period exceeding 180 days. For an UST system that meets upgrade requirements, the UST system may not be temporarily out-of-service for a period exceeding one-year.

The Department must receive written notice thirty (30) days prior to a removal of an UST system. UST removals must be performed in the continuous on site presence and under the direction of a Maryland certified underground storage tank technician or remover in accordance with COMAR.

 # 1 Confirm tank contains less than 1 inch of liquid using a rigid gauging stick capable of determining liquid level to the nearest 1/8 inch.

 # 2 Even though a tank is Temporarily Closed or Taken Out-of-Service it must still have an operating vent pipe and a fill pipe that is capped and locked.

 # 3 As accurately as possible enter the month, day and year the UST system was taken out of service (example 08/12/05). If the owner cannot provide a date the system was taken out of service, a date of six-months prior to your inspection must be listed and the owner will be required to properly abandon the UST system.

(COMAR 26.10.10.01B)—When an UST system is temporarily closed for 3 months or more, owners and operators shall also comply with the following requirements:

(1) Leave vent line open and functioning; and

(2) Cap and secure all other lines, pumps, manways, and ancillary equipment.

 # 4 Inspector must evaluate if the UST system(s) has been temporarily closed for 3 months or more. If the answer is yes, the product lines must be drained and capped, other lines except for the vent must be secured and capped; pumps, dispensers, and manways must be secured and vent pipes shall remain open and operating.

➢ Section 4: Containment Sump and Dispenser Inspection (COMAR 26.10.03.03)

Containment Sump Inspection – 4.a.

Inspector must inspect each tank system to determine if containment sumps are present at locations of the tank top (normally found to house STP), under dispensers, at the vent pipe risers, Stage II condensate pods or other areas of the system. If the answer is yes, a containment sump is present, check (√) "Applicable" in the top right corner of the form and complete this section. If the site does not have any containment sumps check (√) "Not Applicable" and proceed to Section 4b. To complete the section, enter in the boxes (P) Pass, (PC) Pass with/Corrections, (F) Fail or (NA) Not Applicable for each tank.

Do not confuse containment sumps with spill catchment basins/spill buckets on the fill pipe and Stage I vapor recovery connections covered in Section 6 or construction sumps that are used for manway foundations or backfill control.

Containment sumps are required to be tested by July 26, 2005, then every **five (5)** years after date of first test. Note: UST systems installed or upgraded after January 26, 2005 must have double-wall piping connected to the UST and under the dispenser in a liquid tight containment sump. COMAR 26.10.03A(3)(iv).

 # 1 Put a check (√) mark under each tank # in the appropriate box if a containment sump is present under the dispenser, at the tank top, at the vent riser, for the Stage II-condensate pod and specify in comment section if other areas if the UST system has containment sumps.

 # 2 Containment sumps are to be clean with no debris or liquid. The sump must be visually inspected and if liquid or debris is detected, the sump being inspected (F)Fails the inspection. If corrections are made (i.e. water/debris is removed from the containment sump), the sump should then receive a **(PC)** pass with correction**.** Explain in the comment section on the inspection form in detail the failure and any corrections made in. **(**COMAR 26.10.03.02A(4)).

 # 3 Manway cover(s) and containment sump lid(s) must fit properly and be installed in accordance with manufacturer specifications. Sump lids may not be in contact with riser pipes, caps or any pump. A manway cover may not be installed upside down to compensate for riser pipes being too high.

 # 4 Visually inspect the containment sumps for cracks, holes, or any openings that would cause the sump to not be liquid tight. Any signs of cracks, holes, or openings (F)Fails the inspection. Inspector should carefully inspect entry fittings and containment boots for signs of deterioration and openings.

 # 5 If equipped, liquid sensors must be positioned 1-inch from the bottom of the sump or in accordance with manufacturer specifications. If the sensor is greater than 1-inch from the bottom, the inspector must evaluate the manufacturer specifications or (F)Fail the inspection. Sensors shall be properly secured using appropriate hardware. You must fail sensors hanging by the electric wires.

 # 6 If equipped with double-wall piping, make sure the test boot is open to allow leaked product to flow from the secondary pipe into the sump. Boots may not be clamped shut to restrict product flow. If the test boot is clamped closed, the Schrader valve must be removed from the test valve then the test boot must be turned down so the test valve is turned towards the bottom of the sump. This will allow product to flow out of the test valve into the sump. If the test boot is missing or improperly installed to **not** allow product flow into the sump from the secondary containment, this **(F)** Fails the inspection.

#7 Review the testing data records for each tank to determine if each containment sump has been tested within; thirty days of installation; upon repair; within 1 year of January 26, 2005, and every five years thereafter. If the latest test data is available with pass results, this question **(P)** Passes the inspection.

#8 Enter the date (example 04-22-05) of the last containment sump test for each tank. If the sumps were not tested in question #7, enter N/A.

➢ Section 4: Containment Sump and Dispenser Inspection (cont'd.)

Dispenser Inspection – 4.b.

When more than 5 dispensers are present, use additional copies of Section 4b. (page 6) only and staple with Section 4. If additional pages are used check (√) Yes at the bottom of page 1 (Addendum Form Used).

Complete Section 4b. by entering in the boxes (P) Pass, (PC) Pass with/Corrections, (F) Fail, or (NA) Not Applicable for each dispenser.

Every dispenser must be inspected by opening the dispenser panels and inspecting the general condition of the dispenser. Look for any product weeping or dripping from any piping or connecting joints. Check to determine if there is a dispenser pan or sump under the dispenser. If there is not one present, note in the comments at the bottom of section 4b. If there is a sump/pan inspect for product, debris, or sump sensor and note in comments section. If there is water, debris, or product in the sump and it is removed before ending your facility inspection, enter **(PC)** Pass with Corrections. If water or product is present, an investigation by the owner/operator must be initiated to determine the cause of the intrusion and noted in comments.

#1 Is the dispenser **properly** anchored to the pump island according to manufacturer's specifications? Check the dispenser for movement and missing anchor bolts or bars. If anchors are not present, loose, or there is movement in the dispenser base (base rocking while pushing on the dispenser), this question **(F)** Fails the inspection. There should be no adverse stress on the piping or shear valve system.

 # 2 Pressure Piping System-inspect the overall condition, proper height and proper anchorage of the shear valve (also known as crash valve) according to N.F.P.A. 30A Code for Motor Fuel Dispensing Facilities and Repair Garages, 2000 Edition (NFPA 30A), Chapter 6- Fuel Dispensing Systems (6.3.9 through 6.3.10); API 1615 Installation of Underground Petroleum Storage Systems, Figure 11; PEI-PEI/RP 100-05 Recommended Practices for Installation of Underground Liquid Storage Systems, Figure 10-4; COMAR 26.10.03.06F, and/or manufacturer's specifications. The **shear section** of the valve should be level (within ½ inch) with the top of the dispenser island or within manufacturer's specifications.

The shear valve must be properly bolted and anchored to the pump island (for marinas, securely anchored to the pier) using proper anchoring equipment. Use of hose clamps and other similar equipment is not acceptable for anchoring equipment.

MDE has found numerous shear valves not properly anchored, to the dispenser pump island. Inspect the general condition, height and anchor bracket that holds the shear valve to the dispenser island. Many times the bolts are loose, missing, or the entire bracket is not present.

The proper height and anchoring of the shear valve is extremely vital to the operation of the **shear section** for it to operate properly in the event of an emergency.

 # 2a Inspect the hold-open latch or arm on the shear valve to determine if it is properly connected and no **illegal device,** (e.g., a piece of wood or a metal wire) is holding open the latch/arm. NFPA 30A, Chapter 6-Fuel Dispensing Systems (6.3.9.1) states: "the automatic-closing feature of this valve shall be tested at the time of installation **and at least once every year thereafter by manually tripping the hold-open linkage**. Records of such tests shall be kept at the premises or shall be made available for inspection by the authority having jurisdiction within 24 hours of a verbal or written request."

Inspector may also detect containment sump float devices that are connected to the shear valve-actuating arm that will trip the shear valve and prevent dispensing product if liquid is detected in a sump.

 # 3 The Stage II piping system must have a shear valve or flexible connector present below the dispenser. Inspect the general condition, height and proper anchorage of the shear valve to the dispenser island and/or verify in accordance to the manufacturer's specifications. Also inspect condition of the flexible connector if present; look for deterioration of the stainless steel braiding and or kinking greater than 90 degrees (NFPA 30A, Chapter 5-Piping for Liquids (5.6)). If the storage system is not equipped with Stage II piping, enter NA in the box.

 # 4 Listed hose assemblies shall be used to dispense fuel. Hose length at automotive motor fuel dispensing facilities shall not exceed 18 feet (NFPA 30A Chapter 6- Fuel Dispensing Systems (6.5.1))

Inspect the hose and evaluate the condition to ensure there are no cuts or holes.
A listed emergency breakaway device is required for Class I liquids such as gasoline. Such devices shall be installed and maintained in accordance with the manufacturer's instructions. A breakaway device is not required on combustible liquids such as kerosene, diesel fuel or heating oil (NFPA 30A Chapter 6- Fuel Dispensing Systems (6.5.2)).

Where hoses are attached to a hose-retrieving mechanism, the listed emergency breakaway device shall be installed between the point of attachment of the hose-retrieving mechanism to the hose and the hose nozzle valve (NFPA30A Chapter 6- Fuel Dispensing Systems (6.5.3)). **Exception**: **Such devices shall not be required at marine motor fuel dispensing facilities.**

 # 5 Inspect dispenser hoses to ensure the hose is protected from vehicle damage. If equipped with a hose retractor, is the retractor in operating condition? Test the retractor by pulling out the hose to the end, then allowing the retractor to reel the hose back in. If the hose is not lying on the ground and not subject to damage by vehicle traffic, question #5 (P)Passes the inspection.

 # 6 Is there an emergency shut-off switch or electrical disconnect present? Fuel dispensing systems shall be provided with one or more **clearly** identified emergency shutoff devices or electrical disconnects (NFPA 30A- Chapter 6- Fuel Dispensing Systems (6.7)). If the emergency power shut-off is not present, this question (F)Fails the inspection.

 # 6a The emergency shutoff device or electrical disconnect must be clearly identified to the attendant or to the patrons (NFPA 30A- Chapter 6- Fuel Dispensing Systems (6.7 through 6.7.2)). If a sign or identification is not clear or of size to be easily identified, this question **(F)** Fails the inspection.

 # 6b Where is the location of the emergency shutoff devices or electrical disconnect? Such devices or disconnects shall be installed in approved locations but not less than 20 feet or more than 100 feet from the fuel dispensing devices that they serve. At attended motor fuel dispensing facilities, the devices or disconnects shall be readily accessible to the attendant.

At unattended motor fuel dispensing facilities, the devices or disconnects shall be readily accessible to patrons and at least one device or disconnect shall be readily accessible to each group of dispensing devices on an individual island (NFPA 30A Chapter 6- Fuel Dispensing Systems (6.7 through 6.7.2)). If the electrical shut-off switch is not within the specified distance from the dispenser, this question **(F)** Fails the inspection.

 # 7 After removing the dispenser panels, carefully examine all of the piping, connecting components and filters for weeping or dripping of product. If leaks are observed, inspect the dispenser sump (if present) for product, if no sump is present, evaluate if soil saturation is present. MDE prefers the collection of vapor readings of the soils or backfill materials using a calibrated field monitoring/testing instrument (such as Micro-tip, explosimeter, etc.). Record the vapor reading in the comments section and notify the owner/operator immediately of the leak. If a sump is present and it contains product, the owner/operator must have the product removed and properly disposed. If product can be removed for proper disposal while at the facility, enter **(PC)** Pass with Correction for question # 7, if not , then this question **(F)** Fails.

 # 8 Circle "**yes**" if a flex connector is present; circle "**no**" if none is present. If the flex connector under the dispenser is visible, inspect the condition for wear, tight connection, and kinking greater than 90 degrees. If there is no sump under the dispenser, a Maryland certified UST technician or Maryland certified inspector must verify the presence of a flex connector by digging or removing soils under the dispenser to visually see the flex connector, to determine its presence, and if the flex is corrosion protected by either protective boot, or wrapped and has anodes. COMAR 26.10.03.06E states: "Piping carrying a regulated substance shall be connected to the tank and the dispensing equipment at the end of the piping run by an Underwriters Laboratory Inc® (UL) -listed flexible connector, installed in accordance with manufacturer specifications.

Flexible connectors may not be used at any other point in the piping". If the flex connector is in contact with soils, **complete Section 8 – Corrosion Protection.**

If the owner or operator has photographs, written, or other documentation to show the presence of a flexible connector and it is not in contact with the soil or is corrosion protected, this question **(P)** Passes. **MDE is not requiring concrete to be removed to verify the presence of a flexible connector.**

 # 9 When inspecting marinas, determine if the nozzle(s) are manufactured without a hold open device or if it has been removed. If the nozzle(s) has a hold open device, remove or enter **(F)** Fail for question # 9. (COMAR 26.10.03.07C and NFPA 30A, Chapter 6- Fuel Dispensing Systems (6.6.5)).

➢ Section 5: Tank Top Components and Vent Pipe Inspection

Tank Top Inspection – 5.a.

#1 Answer Y (yes) or N (no). Is the storage system equipped with an Automatic Tank Gauge (ATG) system? If Yes complete 1a., 1b., 1c., and 1d. Inspectors will be required to inspect other areas of the tank top when ATG systems are used.

 # 1a Inspect the rubber grommet or other material used to seal the electrical connection to ensure the material is not cracked, deteriorated or missing. Any signs of deterioration or leakage are considered a **(F)** Fail. ATG riser pipes and leaking connector fittings are a source area for UST system vapor leaks resulting in soil and groundwater contamination.

 # 1b Record a **(P)** Pass if no petroleum vapors are detected when the sump cover(s) is removed on ATG, Ball Float riser, or STP without a containment sump. If petroleum vapors are detected, the component **(F)** Fails the inspection. MDE recommends inspectors collect vapor readings on all openings to assist with evaluating if the UST systems have petroleum or vapors leaks. Vapor readings should be collected following procedures outlined in #1c.

 # 1c Record field reading from soils in or around the ATG, ball float, vent riser pipe, and inside the manway for STPs (without containment sumps), and record the maximum reading in this block for each tank. Readings shall be collected using a calibrated field instrument, (e.g. Photoionization Detector (PID), Combustible Gas Meter (LEL–lower explosive limit, or other field instrument). Have the calibrated instrument turned on, in hand and ready to read, lift manhole cover just enough to place probe of the field instrument into manway (ensure the probe is not in water). Take the reading and record in (1c) of this section. Additional readings can be recorded in the "Comments" section.

 # 1d ATG riser manhole lid must be properly fitted in the manhole ring in the proper position. Lids may not be turned upside down to compensate for riser pipes that are installed too high. Manhole lids must not be in contact with electrical wires. Broken or missing manhole lids are considered a **(F)** Fail.

 # 1e Answer Y (yes) or N (no). Is there a flexible connector or flexible piping present connecting product pipe to the STP? If the metallic flexible connector or metal fittings are in contact with soils, complete Section 8 Corrosion Protection.

COMAR 26.10.03.06E. "Piping carrying a regulated substance shall be connected to the tank and the dispensing equipment at the end of the piping run by an Underwriters Laboratory-listed flexible connector, installed in accordance with manufacturer specifications. Flexible connectors may not be used at any other point in the piping".

 # 2 Inspect all tank top openings. Ball floats and all other riser pipes must be fitted with proper caps that are liquid and vapor tight. Manhole lids must be properly installed in a manhole ring and the lid may not be turned upside down. Riser pipes installed too high and in contact with the lid, cracked lids, or missing lids are considered a **(F)** Fail.

 # 3 Answer **Y** (yes) or **N** (no) if an interstice monitoring or inspection station is present for double-wall tank. The interstice opening must be properly capped. Manhole covers must be properly installed and not in contact with the interstice risers and caps. Explain any concerns or problems detected in the "Comments" section.

 # 4 Marinas must have shut-off valves for all product piping grouped in one location on shore near the approach to a pier or dock and properly marked:" Emergency Shut-Off". The valve(s) must be protected from damage with a manhole or cover which is not bolted or locked and is readily accessible in the event of an emergency. Shut-off valves that are not readily accessible, not located at the approach to the pier or dock, or not properly identified **(F)** Fail the inspection (COMAR 26.1003.07D. and NFPA 30, Flammable and Combustible Liquids Code 2000 Edition, (5.7.9d)).

Vent Pipe Inspection – 5.b.

 # 1 Aboveground vent pipe risers must be constructed of schedule 40 steel. Fiberglass-reinforced plastic and flexible piping may not be used for aboveground vent lines (COMAR 26.10.03.02C(2) and COMAR 26.10.03.06H).

 # 2 Vent pipes must be properly anchored to secure the vent riser in a vertical position. The riser must be secured in concrete and/or supported with metal bracing. Vent pipes must be protected from damage using bollards or must be set back from a curb line and protected from vehicle traffic. Vent pipes cannot be located in a vehicle traffic area (COMAR 26.10.03.06H).

 # 3 If the vent pipes are not installed to the required height the inspector must **(F)** Fail this question. Facilities change product usage in a UST (example: diesel UST is now a gasoline UST) and inspectors must evaluate each UST vent to ensure proper vent height is present.

(COMAR 26.10.03.06).

I. Vents for UST systems storing flammable liquids shall terminate 12 feet above the ground surface and 2 feet above any attached building.

J. Vents for UST systems storing combustible liquids shall terminate at least 3 feet above the ground surface.

 # 4 All vent pipes must be equipped with an approved vent cap. Gooseneck elbows are not acceptable vent caps. Flammable liquid USTs with Stage I vapor recovery must have pressure/vacuum (P/V) relief vent caps. Some P/V vent valves are difficult to identify. Valves can be identified by the shape, design, and labels located on the valve. A stepladder may be necessary to confirm the presence of a P/V valve.

Open atmospheric vent caps must have an internal wire screen to protect the vent pipe from debris, and insects (COMAR 26.10.03.06H(4) and NFPA 30, (3.7.2 – 3.7.2.7).

➢ Section 6: Spill and Overfill (COMAR 26.10.03.03)

Spill Device – 6.a.

 # 1 The direct and remote (if present) fill pipe is equipped with a minimum 5-gallon capacity spill catchment basin. Used oil and heating oil tanks installed, upgraded, or replaced after November 4, 1996 require spill catchment basins (COMAR 26.10.03.03).

 # 2 Overfill catchment basin shall be kept clean and dry with no free standing liquid and debris (COMAR 26.10.04.01B).

 # 3 & # 4 Inspect catch basins for any cracks, holes, or abnormalities. Inspector should evaluate a completely dry catchment basin for leakage. Catchment basin equipped with plunger openings must have an operating plunger or properly installed plugged.

 # 5 Manhole lid must be properly fitted and not in contact with riser pipe or fill pipe cap. Any contact may cause damage to the tank or riser pipe.

 # 6 Fill pipe must be marked to indicate size of tank and type of product stored in that tank. The marking can either be a tag around the fill pipe indicating tank size and product stored, or a sign stating the tank size, and product stored in plain view of the delivery driver (COMAR 26.10.04.01N).

(1) A permanent tag or sign installed immediately adjacent to the fill which states the size of the storage system and the specific type of regulated substance being stored; or

(2) A color code shall conform to the following requirements:

(a) Color markings shall be in accordance with API 1637 "Product Identification", which is incorporated by reference in COMAR 26.10.02.06J, and shall be painted or placed around the fill or manhole cover in a manner that will readily identify the regulated substance in the storage system, and

(b) The color code shall be printed on a sign not less than 8 x 10 inches with letters not less than 5/16 inch high, posted at the facility in a prominent location visible from the fill pipe area, and shall be available for inspection at all times to show the tank size and type of regulated substance.

 # 7 All spill catch basins must have minimum 5-gallon capacity (fill pipe and Stage I vapor recovery connections). The catch basins must be tested with Maryland Containment System Testing Protocol within thirty (30) days of installation, upon repair, or within 180 days of January 26, 2005 and annually thereafter. Catch basins that have failed the test is considered a **(F)** Fail for the inspection (COMAR 26.10.03.03A(1)).

#7a. Indicate the date of last test in box 7a.

 # 8 Evaluate the date of the UST system installation to determine if a catchment basin is required. New, replacement or upgraded UST systems installed after December 22, 1988 (unless the tank receives not more than 25 gallons of a regulated substance at one time) are required to have a catchment basins. Existing UST systems installed prior to December 22, 1988 must have a spill devices installed by December 22, 1998. New, replacement, or upgraded UST systems that receive used oil or are installed on or after July 1, 1998 and equipped with Stage I vapor recovery fittings shall have catchment basins (COMAR 26.10.03.03).

If petroleum contaminated soil is present around the fill or Stage I vapor recovery connections without catchment basins the Department will require corrective actions and the installation of those basins.

Overfill Prevention Devices – 6.b.

Since December 1988, overfill prevention is required on all motor fuel (gasoline, diesel and bulk heating oil) underground storage tanks. Tanks that receive less than 25-gallons of petroleum per delivery or heating oil tanks for on-site consumptive use installed prior to November 4, 1996, are not required to have overfill protection.

Since December 1998 all gasoline, diesel, used oil, and bulk heating oil UST systems must be upgraded with overfill prevention device.

Overfill prevention equipment shall: Automatically shut off flow into the tank when the tank is 95 percent full; or alert the transfer operator when the tank is 90 percent full by restricting the flow into the tank, triggering a high level alarm; or alert the operator with an alarm 1 minute before overfilling (COMAR 26.10.03.03(2)(a)(b)(c)).

 # 1 Visually inspect the inside fill pipe riser to determine if a drop tube is present.

COMAR 26.10.04.01R. Any UST system that stores flammable product or an UST system with a capacity over 1,100 gallons that stores combustible product shall have a drop-tube installed in the fill pipe in compliance with NFPA 30: Flammable and Combustible Liquids.

 # 2 Overfill tank devices may be flapper valve in the drop tube, ball float valve, high-level alarm, or other (describe). If more than one overfill device is present list each one.

 # 3 Indicate the method used to deliver product to the tank (i.e. gravity drop (G) or pump flow (PF) delivered under pressure).

 # 4 Answer **Y** (yes) or **N** (no). (COMAR 26.10.04.01A) "Owners and operators shall ensure that releases due to spilling or overfilling do not occur. The owner and operator shall ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling".

 # 5 Inspector visually observed the overfill device such as flapper valve present in a drop tube or the owner/operator has documentation that a flapper valve or ball float valve was installed by a Maryland certified technician. If the inspector cannot visually see the overfill device (such as ball float) or documentation is not available to verify the date of installation, the owner/operator must hire a Maryland certified UST technician, or inspector to verify and document the presence of an overfill device attesting to the overfill device operability.

 # 6 If the tank receives less than 25-gallons of petroleum per delivery, or a heating oil system for on-site consumptive use was installed prior to November 4, 1996 the overfill device is not required, and the answer is **(P)** Pass (COMAR 26.10.03.03B(1),(2) and C.

The type of overfill device that can be used on a tank depends on how the product is delivered to the tank (gravity or pump flow under pressure).

 # 7 **Drop Tube Flapper Valve**: These devices are usually used on tanks that receive gravity drop deliveries, although there are drop tube flapper valves manufactured for pumped deliveries. Visually inspect inside the drop tube to verify nothing is present to prevent the proper operation of the flapper valve (e.g. a gauging stick that holds the valve open).

A fill pipe that utilizes a flapper valve in the drop tube for overfill purposes and receives a pressure delivery product drop, shall have a specific flapper valve designed for that use.

 # 8 **Ball Float Valve / Vent Restrictor:** These devices are approved on tanks that receive gravity drop deliveries only. Ball floats cannot be visually inspected unless fittings, caps or extractors valves are removed. The owner or operator must provide written documentation verifying the presence of a ball float or vent restrictor. Many UST testers document over fill devices during the testing of storage systems. If proof is not available, the owner must have the device inspected by a Maryland Certified UST Technician or Certified Inspector for proper operation. ***** If a UST system has one or more of the following, the owner or operator of the system shall not use a ball float valve on that system: (1) a tank that receives a pumped delivery; (2) suction piping with air eliminator; (3) remote fill pipes and gauge openings; (4) an emergency generator tank.***

#9 <u>Audible External High Level Alarm Only</u>: Alarm tested and functioning properly. The delivery driver must be able to see the visual alarm and/or hear the audible alarm. If the alarm system is equipped with a test mode button, the unit must be tested during the inspection for proper operation to make sure the visual signal or horn is clearly audible to someone standing at the fill receptacle.

➢ Section 7: Stage I and II Inspection (COMAR 26.10.03.03D)

Stage I Vapor Recovery – 7.a.

Stage I vapor recovery is **ONLY** required on **Gasoline** underground storage tanks (UST) **greater** than **2,000-gallons** capacity. Stage I vapor recovery **IS** required throughout the entire State on each UST system that qualifies, no matter what County the facility is located in or whether the facility is equipped with Stage II vapor recovery. **Reminder:** If Stage I is present the vent pipe must have a Pressure/Vacuum vent cap present, and be a minimum of 12 feet above grade. If the UST systems at the facility are not required to have Stage I vapor recovery, check (√) "Not Applicable" in the top right corner of the form and proceed to Section 8. If an UST system is required to have Stage I vapor recovery, complete Section 7.a. #1, #2 and answer #3-#6.a. for each tank **(P)** Pass, **(PC)** Pass with/Corrections, **(F)** Fail, or **(NA)** Not Applicable. Questions regarding Stage I or II vapor recovery systems and requirements can be directed to MDE Air and Radiation Management Administration (ARMA) at 410-537-3231.

 # 1 Answer Yes / No or NA (not applicable) - Is the tank equipped with Stage I vapor recovery? If yes for any tank, complete 2 through 6.a. and section 7.c. **Note:** 7.c. forms must be submitted to MDE ARMA.

 # 2 Enter **A**-(Coaxial) or **B**-(2 Point System). There are two ways to achieve Stage I vapor recovery:

- **Coaxial Fill Adapter**- A tube inside a tube located at the fill for the UST. **Reminder:** If a Coaxial Fill Adapter is used for Stage I vapor recovery, the UST must use either a **Flapper Valve** or a **High Lever Audible Alarm** for overfill protection.

- **Two Point System (Dry Break)**- The delivery driver must connect to another location (the Dry Break) to achieve Stage I vapor recovery. **Reminder**- Stage I vapor recovery can be achieved with only one Dry Break at a facility as long as the venting system for the USTs are manifolded either above grade (which you can visually see) or below grade. A Dry Break **can** be present on the vertical portion of the vent. The Dry Break lid must be painted orange to achieve API 1637 color code standards.

 # 3 Check the dust cap for the Stage I vapor recovery Dry Break. Make sure the cap is present and the gasket inside is in good condition (no cracks, tears, etc.).

 # 4 The Dry Break poppet must move easily, is in an operable condition (not stuck open), and closes tight. To check the poppet operation, push down on the poppet using fingers or screwdriver and it must open and close freely.

 # 5 If the station was constructed after July 1, 1998, a 5-gallon spill bucket is required around the Stage I vapor recovery Dry Break. **Reminder**- Check your registration form to determine the UST system installation date. Enter in the boxes **(P)** Pass, **(PC)** Pass with Corrections, **(F)** Fail or **(NA)** Not Applicable for each tank. If 5 is NA complete 5.a. and 5.b.

 # 5.a Did you notice staining, or smell gasoline odors in the backfill material surrounding the Dry Break riser pipe? If your answer is yes, mark this section as a **(F)** Fail.

 # 5.b If a field-screening instrument was used, indicate the maximum reading obtained. In the comments section list the instrument used (example: Photoionization Detector (PID); Flameionization Detector (FID), etc., also list the manufacturer and model of the instrument). The Department does not set an acceptable level for field screening. Any readings taken must be recorded.

 # 6 Has the catchment basin been tested in accordance with Maryland Containment System Testing Protocol within the past year? Answer **(P)** Pass, **(PC)** Pass with Corrections, **(F)** Fail, or **(NA)** Not Applicable for each tank. The owner or operator must have a testing record. A certificate only indicating "Pass" is not an acceptable testing record and this section would **fail** the evaluation.

#6a. Enter the date of the last inspection (e.g. 09/05/05).

Stage II Vapor Recovery – 7.b.

If the UST system(s) at the facility does not have Stage II vapor recovery, check (√) "Not Applicable" in the top right corner of Section 7.b. and proceed to Section 8.

 # 1 Does the storage system have Stage II vapor recovery? Circle **(Y)**Yes or **(N)**No.

 # 2 There are two types of Stage II vapor recovery systems; Balance System (BS) and Vacuum Assist (VA) System. Enter BS or VA in the block for each tank system. The type of vapor recovery system can be identified as follows:

Balance System- (One type only) Uses a bellows nozzle (Boot) and coaxial hose. The vapor section is on the outside of the hose.

Vacuum Assist System- (Several types exist). The concept is to pump or pull the collected vapors from the car's fuel tank back to the UST. Several names that you may come across: Gilbarco Vapor Vac, Wayne Vac, Tokheim Max Vac, Hastech, and Healy. Some obvious signs an assist system exists are: multiple holes at the end of the dispenser nozzles; a vacuum pump either below, or above the dispenser; or a Healy pump present in the Regular (lowest grade) Unleaded STP sump.

 # 3 This type of system may be present anywhere in the State. It is also a method that may be used to comply with HGRUA regulations. One known CARB approved system

that is actively being used in the State is the "Permeator" by Arid Technologies®. OPW also makes a system called the "Vaporsavor™". It looks like an air conditioning unit next to the vent risers. Several other manufactures are also stating they can achieve this requirement. These systems are not required to be inspected but the inspector is being asked to circle (**Y**) Yes or (**N**) No.

➢ Section 7: Stage I and II Inspection (cont'd.)

Air and Radiation Management Administration Inspection Report Section – 7.c. (COMAR 26.11.24)

Stage II Vapor Recovery Inspection Checklist Guidance

Owner – This is the name, address, and telephone number of the person or entity that owns the underground storage tank system.

Stage II regulations assign certain responsibilities to the owner, requiring the contact information if issues arise as a result of an inspection.

Operator – This is the name of the operator of the facility and includes the address and telephone number of the facility. Like the owner, the operator is assigned certain responsibilities. The operator may not always be the person interviewed at the station.

Condition of Fill – This is the condition of the product and Stage I fills. Inspect for product in the fills, that the caps are on the fills, and the poppet on the Stage I vapor recovery connection is closed.

Witness Fuel Drop – Note if you observe fuel delivery during the inspection. If so, note if a vapor balance line was in use and if there were any leaks or spills.

Tank Vent Condition – Locate the tank vent lines and ensure they are protected from traffic and weather. Also, ensure that pressure vacuum vent valves are installed on the vent lines.

Product and Vapor Adaptors Installed – Ensure that product and vapor adaptors are installed on the product and vapor fills. Locking clamps are permitted to be used in lieu of swivel adapters.

Stage II Vapor Recovery System – Indicate which type of vapor recovery system (vapor balance or vacuum assist) is installed at the facility. Approximately 95% of the facilities in Maryland have vacuum assist systems.

Equipment – Indicate the quantity, the manufacturer and the model number of the nozzles, hoses, and dispensers.

Stage II Vapor Recovery systems are certified for use with certain pieces of equipment so this information is necessary to determine if the facility is operating an approved system. Also, determine when the Stage II Vapor Recovery system was installed, not necessarily when the tanks were installed.

Test Results – Review the most recent test results. The liquid blockage test is required to be performed every five years while the other tests are required every year. Also, indicate whether the test passed or failed.

Equipment Inspection – Visually inspect each dispenser and note any deficiencies. Examples of deficiencies are leaking nozzles, hoses and breakaways, crimped hoses, and missing hoses and nozzles.

Record Keeping – Review the records required to be kept at the station. These records include daily inspection logs, Stage II testing results, Stage II training certificate, and maintenance records. The maintenance records are required to be kept for two years while the other records are required to be kept for five years.

Instructional Signs – Signs or stickers should be posted on each dispenser that state "Do Not Top Off" and providing the customer with the MDE Toll Free Number (1-800-633-6101) to call if they experience any problems with the Stage II system that cannot be resolved at the facility.

Training Certificate – One current employee at each facility must have a Stage II training certificate. This employee can assist in the training of others and a log of the training provided to other employees should be kept.

The MDE Certified Inspector **must** sign and date ARMA's two page Report at the end of page two. **You must send a copy of the 2- page Air and Radiation Management Administration's (ARMA) Inspection Report to them.**

MDE Air and Radiation Management Administration
Suite 715, 1800 Washington Boulevard
Baltimore, MD 21230

➢ Section 8: Corrosion Protection (COMAR 26.10.04.02)

Corrosion Protection

If the UST system(s) at the facility is not in contact with the soil (example: tank is inside a vault and can be visually inspected) check (√) "Not Applicable" in the top right corner of the form and proceed to Section 9. If a buried metal tank and pipe (including fittings, flexible connectors, etc.) is in contact with the soil the metal portion must be isolated from the soil and cathodically protected. Answer **(P)** Pass, **(PC)** Pass with/Corrections, **(F)** Fail, or **(NA)** Not Applicable for each of the applicable tank and piping sections.

Know the installation date of the UST system. State and Federally regulated UST systems (Tank and Piping) installed (Gasoline, Diesel, Waste Oil, Bulk Oil for Sale) after December 22, 1988, must meet corrosion protection requirements. Heating oil UST systems for consumptive use installed after March 15, 1985 must also meet corrosion protection requirements. Most noteworthy is that the entire system must meet corrosion protection requirements (fittings, flex-connectors, STP pump head in contact with soil, etc). COMAR 26.10.02.04B(34).

Non-Metal Construction Material: No CP Required

 # 1 The **Tank** is constructed of fiberglass or a Steel tank with a Clad coating (FRP, Urethane, Jacketed). No metallic portion of the UST is in direct contact of the ground. Need visual proof of tank construction material either by witnessing the tank material or a photograph of the tanks installed, or a receipt of the tank purchased.

 # 2 The **Piping** is constructed of either fiberglass, flexible plastic, or the primary piping is present inside a conduit that is properly constructed and not in direct contact with the ground. All associated components with the piping system (fittings, flex-connectors, or risers) must also be protected from corrosion, or not in direct contact with the surrounding soils. Achieve visual proof of piping construction material either by witnessing the piping, a photograph of the piping installed, or written documentation such as receipt from a Maryland Certified UST Technician. If containment sumps or dispenser pans are present, a visual inspection of the piping inside the sumps or pans may identify the type of pipe and fittings.

There are two types of corrosion protection systems, Galvanic or Impressed Current. For metal tank and piping systems the inspector must determine the type of corrosion protection in use.

Galvanic Cathodic Protection (Tank and Piping)

#3 **Tank-** A **factory** fabricated galvanic cathodically protected **Steel Tank** (sti-P_3®, etc.) must be tested within **6** months of installation and every **3** years thereafter by a qualified cathodic protection tester using NACE Code of Practice Standards. Inspector must evaluate documentation to confirm the tank has been tested on schedule and with passing results. If supplemental anodes were installed, or added, complete 3a. on the inspection form. COMAR 26.10.04.02D(2).

 # 3a Testing increases to a **yearly** requirement, once a modification has been made to a factory-designed tank (i.e. adding anode bags) The CP system is now considered **field** installed. COMAR 26.10.04.02D(1).

 # 4 **Piping**- Galvanic cathodic protection designs that are **field installed** must be tested by a qualified cathodic protection tester within **6** months of installation and **yearly** thereafter. Inspector must evaluate documentation to confirm the piping has been tested within the scheduled time and with passing results. COMAR 26.10.04.02D(1).

 # 5 Inspector must visually confirm the owner/operator has a record of the last two CP test results. COMAR 26.10.04.02G(2).

 # 6 If review of the records indicate a failure occurred during the CP test, inspector must verify documentation that corrections were made to the CP system within 60-days of the test failure and that the system has been retested with passing results. COMAR 26.10.04.02(E).

Impressed Current Cathodic Protection (Tank and Piping)

 # 7 Witness the Impressed Current CP design document that was written by a corrosion expert, which should indicate the day the system was installed and the systems operating parameters (where the rectifier should be set). Enter the month and year (example 04-99) COMAR 26.10.03.01B(2)(a)(i) and (ii).

 # 8 Impressed Current CP systems are required to have an assessment performed by a corrosion expert on the design of the system every 5 years to make sure the system is still compatible with the site. The inspector is to confirm the assessment document was completed at the **5** year interval. COMAR 26.10.04.02F(1)(b).

 # 9 Verify the rectifier box has power and is turned on. The operation of the system can be verified by a light, display, or the use of a hour meter. If the site is using a Hobb's meter record the hour. COMAR 26.10.04.02B.

#10 Answer (**Y**) Yes or (**N**) No. Is an hour meter present? The meter can be observed at the rectifier box. If yes, also complete #11.

#11 Record in the box the hours observed on the meter.

 # 12 Review the inspection log and confirm the system was checked for proper operation every 60 days. A sample inspection log is provided below. The inspector should also observe if the rectifier is operating within the required parameters as specified in the CP system design. If it is not, a qualified corrosion expert should make the appropriate adjustments. COMAR 26.10.04.02F(1)(a).

60-Day Inspection Results For Impressed Current Cathodic Protection Systems

Facility Name:_____

Amp Range Recommended:_____

Voltage Range Recommended:_____

Date	Your Name	Voltage Reading	Amp Reading	Is Your System Running Properly? (Yes/No)

- **If the rectifier voltage and/or amperage output(s) are outside the recommended operating levels, contact a cathodic protection expert to address the problem.**
- **Never turn off your rectifier.**
- **Keep this record for at least 6 months after the date of the last reading.**

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 # 13 **Tank**- Impressed Current CP systems must be tested by a qualified cathodic protection tester within **6** months of installation and **yearly** thereafter. Inspector must confirm the owner/operator has a record that the test is performed within the required schedule. COMAR 26.10.04.02D(1).

 # 14 **Piping**- Impressed Current CP systems must be tested by a qualified cathodic protection tester within **6** months of installation and **yearly** thereafter. Inspector must confirm the owner/operator has a record that the test is performed within the required schedule. COMAR 26.10.04.02D(1).

 # 15 Inspector must visually confirm the owner/operator has records for the last two Impressed Current CP test results. COMAR 26.10.04.02G(2).

 # 16 If review of the records indicate a failure occurred during the CP test, you want to verify corrections were made to the CP system within 60-days of the test failure and the system has been retested with passing results. COMAR 26.10.04.02(E).

Internally Lined Tank

 # 17 Internal Lining must be used in conjunction with Impressed Current Cathodic Protection and if the UST was installed before December 22, 1988: COMAR 26.10.03.08B(2) states: "Cathodic Protection. A tank shall be upgraded by cathodic protection if the cathodic protection system meets the requirements of Regulation .01B(2)(a) of this chapter and the integrity of the tank is ensured using one of the following methods:

(a) The tank is internally inspected and assessed to ensure that the tank is structurally sound and free of corrosion holes before installing the cathodic protection system.

(b) The tank has been installed for less than 10 years and is monitored monthly for releases in accordance with COMAR 26.10.05.04E—I.

(c) The tank has been installed for less than 10 years and is assessed by conducting two tightness tests that meet the requirements of COMAR 26.10.05.04D. The first tightness test shall be conducted before installing the cathodic protection system. The second tightness test shall be conducted between 3 and 6 months following the first operation of the cathodic protection system.

(d) The tank is assessed for corrosion holes by a method that is determined by the Department to prevent releases in a manner that is no less protective of human health and the environment than §B(2)(a)—(c) of this regulation".

Inspector must evaluate the documentation for a, b, or c above is available and the tank was less than 10 years old prior to installing the liner. If the information is available a (P)Pass is acceptable if the information is not available question # 17 (F)Fails the inspection.

 # 18 Internal Lining combined with Impressed Current can be used if the requirements of COMAR 26.10.03.08B(3) ,"Internal Lining Combined With Cathodic Protection, are met. These requirements state: "A tank may be upgraded by both internal lining and cathodic protection under **All** of the following conditions:"

(a) The lining is installed in accordance with the requirements of COMAR 26.10.04.04 and 26.10.02.06G.
(b) Tanks not meeting the recommendations of API Publication 1631 may not be relined.
(c) A storage system to which an interior lining has been applied shall have a cathodic protection system installed to prevent further corrosion of the system. This system shall be of the impressed current type and the installation shall be designed, inspected, and installed under the supervision of a corrosion expert.
(d) A storage system which has had an interior lining applied shall be tested by a precision test before being placed back into service.
(e) An owner and operator shall determine if there is evidence of a discharge from the UST system where the discharge is most likely to be present before applying interior lining.

The inspector must evaluate that if the documentation for the internal inspection is available and the inspection was performed prior to the installation of the impressed current cathodic protection system, and liner. If the information is available, a (**P**)Pass is acceptable. If the information is not available this question (**F**)Fails the inspection.

 # 19 Was an environmental site assessment performed before the internal liner was installed? Answer (**P**) Pass or (**F**) Fail.

 # 20 Enter the date (Month/Year) the internal liner was installed. Inspector must verify written certification of the liner installation. If written proof is not available, this question **(F)** Fails the inspection. COMAR 26.10.03.08B(3)(f).

 # 21 Enter the date (Month/Year) of the last internal inspection. If written proof is not available, this question (**F**) Fails the inspection.

 # 22 Written documentation must be available that an internal inspection has been performed within 10 years of the installation, and every 5 years thereafter. The inspector must confirm the inspections have been performed within the required times. If the schedule has been met, the question (**P**) Passes the inspection. If the documentation is not available, or does not meet the required schedule the question (**F**) Fails the inspection. COMAR 26.10.03.08B(3)(g).

If a Metallic Tank or Pipe has been determined to not have or cannot be proven to have Cathodic Protection, Notify MDE/OCP within 2 hours upon completion of the initial inspection at 410-537-3442.

➢ Section 9: Tightness Testing Inspection COMAR 26.10.02.04 and 26.10.05.04.D

If for the UST system the owner/operator uses periodic testing of the tank and piping system to comply with COMAR 26.10.04.01J, Release Detection requirements of COMAR 26.10.05.02D, and/or the UST has pressurized piping system, check (√) "Applicable" in the top right corner of the form and complete this section. Answer for each tank and piping system **(P)** Pass, **(PC)** Pass with/Corrections, **(F)** Fail, or **(NA)** Not Applicable.

Tightness Testing (Tanks and Piping)

 # 1 Verify the Precision Test method for the Tank, Piping, or both. Methods may be found on the National Work Group Leak Detection Evaluation **(NWGLDE)** website at www.nwglde.org. List the different test method(s) name(s). If the method is not present, or is no longer accepted, the question **(F)** Fails the inspection. If the test method is listed and acceptable, enter **(P)** Pass.

 # 2 Inspector must review the most recent tightness testing results for the tank, piping, or both. Verify the tightness test was performed with passing results. If the testing data is not available or a failure was reported, the question **(F)** Fails the inspection. A test certificate indicating "PASS" only without supporting test data **(F)** Fails the inspection.

 # 3 Verify the tightness testing was performed in accordance with the schedule listed below based on the type of system in use. If the testing schedule has not been met this question **(F)** Fails the inspection.

All Tanks- An UST system installed, or an existing UST system repaired or upgraded, shall be tested for tightness by the "precision test" as defined in COMAR 26.10.02.04, upon completion of installation, repair, or upgrade and before operation of the system. COMAR 26.10.03.05A.

Heating Oil Tanks for Consumptive Use or Emergency Generator Tanks-Are required to perform release detection through tightness testing at installation, 15 years of age, and every 5 years thereafter. COMAR 26.10.04.01J.

Pressurized Product Line Piping- Must be tested annually or meet the Release Detection requirements in Section 12c. and 12h**.** COMAR 26.10.05.02D(2)(b).

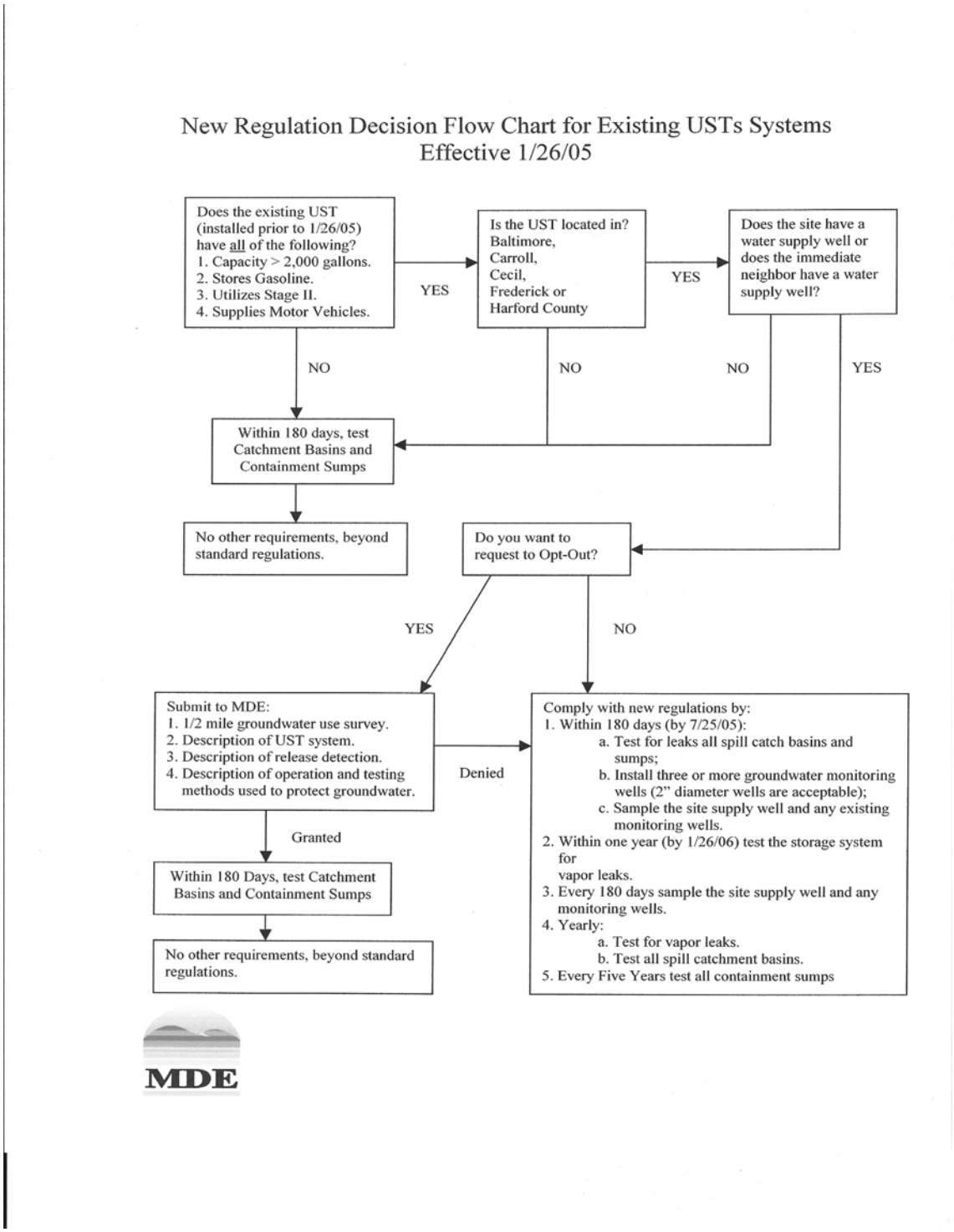
Suction Piping- Non-exempt (Check valve at tank) must be tested every 2 years or meet the Safe Suction Release Detection requirements in Section 12g. COMAR 26.10.05.02D(3).

Heating Oil Tanks for Consumptive Use, Emergency Generator Tanks, Pressurized Product Line Piping, or Suction Piping are not required to perform routine testing if another form of Monthly Release Detection is being conducted in accordance with COMAR 26.10.05.04E–I.

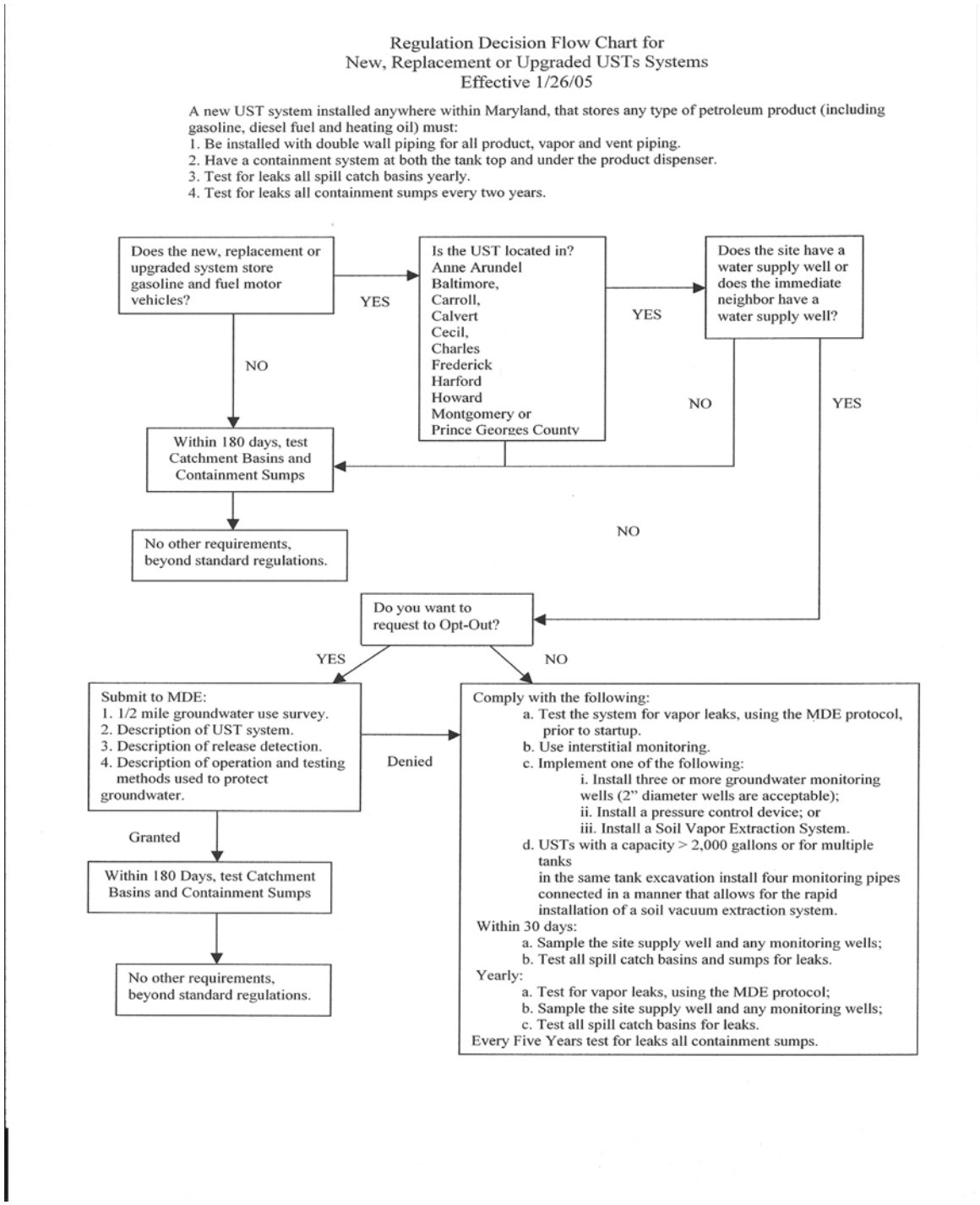
 # 4 Pressurized piping systems must be equipped with an automatic line leak detector (ALLD). Inspector must verify the automatic line leak detector (electronic or manual) is present and is tested annually. If the testing data is not available for the ALLD or a failure was reported, the question **(F)** Fails the inspection. A test certificate indicating a "PASS" only, without supporting test data **(F)** Fails the inspection.

COMAR 26.10.05.02D(a)(i) and (ii).

 # 5 If a gasoline UST system is located in **Cecil, Harford, Baltimore, Carroll, or Frederick Counties** and was installed prior to January 26, 2005, an annual helium test may be required (**COMAR 26.10.02.03-4B**). Use the **Existing UST System Flow Chart** (below) to determine if the gasoline UST system requires this test.



If a gasoline UST system is located in **Anne Arundel, Baltimore, Carroll, Cecil, Charles, Calvert, Frederick, Harford, Howard, Montgomery, or Prince George's Counties** and was installed on or after **January 26, 2005**, an annual helium test may be required. Use the **New UST System Flow Chart** (below) to determine if the station may require this test.



 # 5a Enter the date of the last Helium test performed for each gasoline tank only.

➢ Section 10: House Keeping and Monitoring Pipe/Well Inspection COMAR 26.10.01.02

Facility House Keeping – 10a.

Answer for each question **(P)** Pass, **(PC)** Pass with/Corrections, **(F)** Fail, or **(NA)** Not Applicable

A person may not pump, discharge, spill, throw, drain, deposit, or cause to be deposited, oil or other matter containing oil into, near, or in an area likely to pollute, waters of the State. COMAR 26.10.01.02A.

#1 When completing this section, please use common sense. This is where Inspector discretion will have to be exercised. Does the facility have open containers of oil (5-gallon buckets, 55-gallon drums, pans, etc.) open and exposed to the elements? If yes, is there standing oil on the ground surface or running towards a storm drain? Does the facility have any type of spill prevention kit available (not required, highly recommended) to contain and cleanup surface spills? COMAR 26.10.01.02A.

#2 If aboveground storage tank(s) (ASTs) are present at the facility, briefly inspect them. Look for obvious signs of leaking or staining. Is the AST UL listed for aboveground purposes or is it UL listed for belowground use? Look at UL tag on the tank for marking of *Aboveground* or *Belowground*. Is the AST properly supported to prevent tipping? If the AST has piping that goes below ground, is the piping cathodically protected from corrosion? COMAR 26.10.01.12A(1).

#3 When completing this section, please use common sense. This is where Inspector discretion will have to be exercised. Is there any liquid or puddled product around the dispensers? Has absorbent material been applied, but never cleaned-up? COMAR 26.10.01.02A.

#4 **Inspector discretion** will have to be exercised. If a repair garage is present or another area where motorized vehicles are being worked on, is the area properly maintained? (Are there free standing liquids that could wash into the environment i.e. anti-freeze, steering fluid, oil, gas, etc.) COMAR 26.10.01.02A.

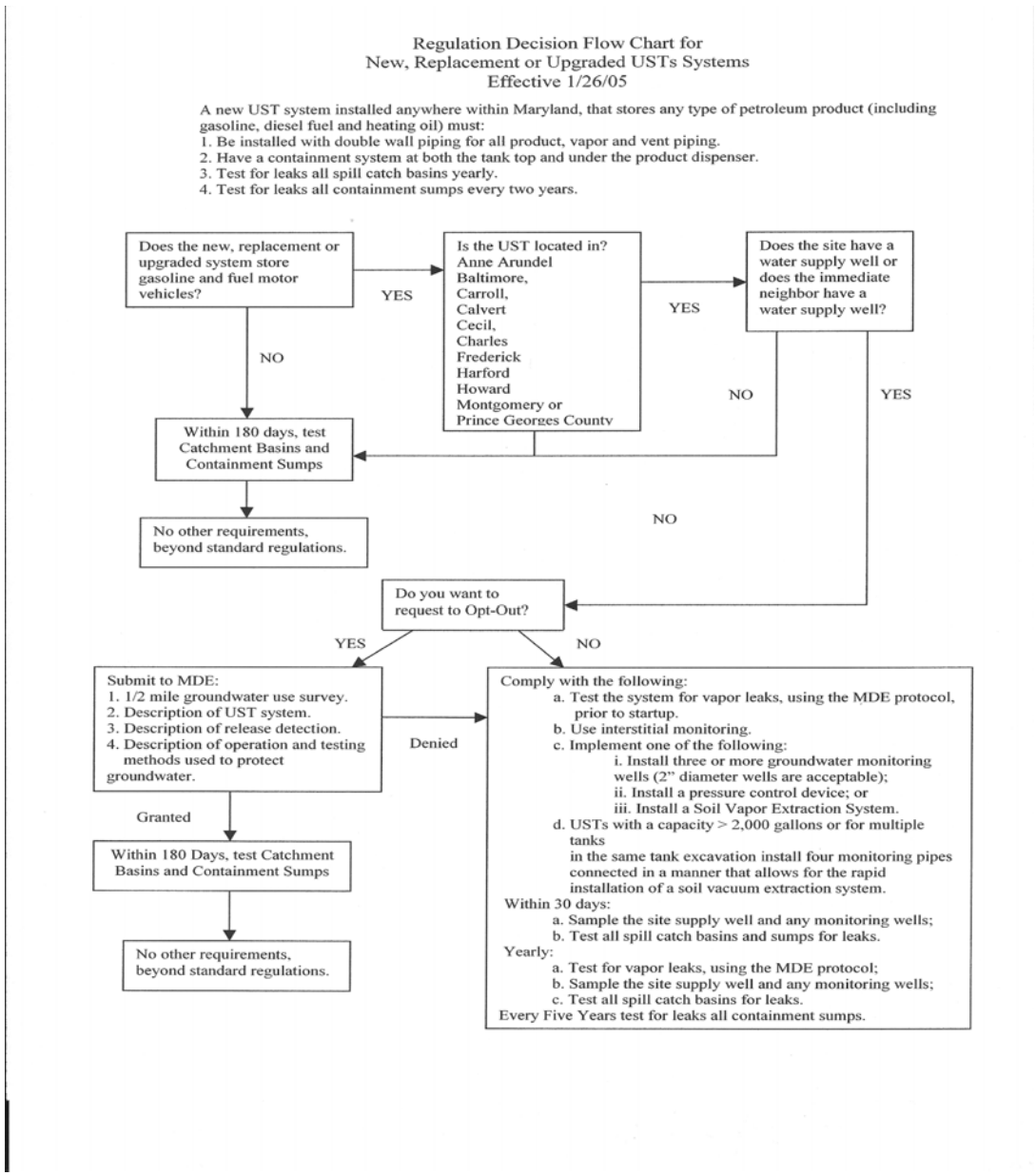
The inspector should comment on other environmental concerns that should be brought to the attention of the Department. Such as, accumulation of tires, batteries, solid or hazardous waste.

Tank Field Monitoring Pipes – 10b.

#1 Evaluate the installation date of the UST system being inspected to determine if tank field monitoring pipes (TFMPs) are required. If the system was installed after March 15, 1985, two monitoring pipes are required to be installed in opposing corners of the tank field. COMAR 26.10.03.04B**.** If the pipes are not present, this section (**F**) Fails the inspection. Do not attempt to correct it by installing the pipes in the tank field, as damage to the tank may occur. The inspector is to report missing pipes in the inspection report, the Department will determine the necessary corrective action. **Note**: a TFMP is not a groundwater monitoring well (GWMW).

A TFMP is in the backfill material of the UST. A GWMW is outside the UST excavation and intersects the groundwater table.

#1a If the UST was installed after **<u>January 26, 2005 in Anne Arundel, Baltimore, Carroll, Cecil, Charles, Calvert, Frederick, Harford, Howard, Montgomery, or Prince George's</u>** counties, four **(4) TFMPs** may be required. Use the **New UST System Flow Chart** (below) to determine if this UST system qualifies to have the 4 TFMP's installed. COMAR 26.10.02.03-2C(1). If the pipes are not present, the section fails the inspection. Do not attempt to correct it by installing the pipes. The inspector is to report the missing pipes; the Department will determine what the necessary corrective action may be.



#2 Open the TFMP and look inside. Use a flashlight or mirror to assist. Does it appear that screened (slotted) pipe is present and at least the top 2 feet of the TFMP is solid PVC pipe? COMAR 26.10.03.04B(4). Are the TFMPs at the proper depth? Is the top portion of the monitor pipe (8") sealed with a bentonite clay or concrete mixture to prevent a surface runoff (e.g. overfill of the UST) from entering the pipe? COMAR 26.10.03.04B(6)(b). This is an easy failure to correct to achieve a Pass with Corrections (**PC**) rating.

#3 Do the TFMP's have liquid tight caps and a manhole cover present to protect them from traffic? COMAR 26.10.03.04B(7) Duct tape from the original installation is a (**F**)Fail for this question. Is a lock present on top of the cap, or does the manhole cover have working bolts on them? COMAR 26.10.03.04B(8). The purpose for the locked cap or bolts is to deter a delivery driver, or persons from accidentally filling the TFMPs.

#4 Are the TFMP manhole covers properly identified using API color code marking of a white background with a black equilateral triangle in the middle? Or do the TFMP covers have the words on them "Monitoring Well, Do Not Fill"? Both are acceptable. COMAR 26.10.03.04B(8).

#5 The TFMPs must be checked for the presence of petroleum contamination. If water is present, a bailer, or a discriminating interface probe may be used. If any petroleum product is detected, note the amount in section 5a. If a Photoionization detector (PID), Flameionization detector (FID) or Explosive/Combustible gas meter is used to check vapor levels in the TFMPs record the vapor reading. If petroleum vapors are present in the monitoring pipe immediately replace the cap or place the plumber's plug back into the pipe and prepare the instrument to collect a reading as follows: make sure there are no liquids at or near the top of the casing, calibrate your field instrument, PID, FID, Explosive/Combustible Gas Meter or other approved field instrument; have calibrated instrument turned on, in hand and ready to read; then lift monitoring pipe cap or plumber's plug just enough to place probe of field instrument into pipe; take reading and record on #5a. of inspection report.

#5a If product is found in monitoring well(s) record the product thickness in the appropriate block. If vapors are found in monitoring well(s), record the vapor reading(s) if taken, in the appropriate block.

<u>Site wells for Facilities located in HRGUA– 10b.</u>

"High Risk Groundwater Use Area" (HRGUA) means all areas served by individual wells. HRGUA includes existing UST systems installed prior to 1/26/05 in Baltimore, Carroll, Cecil, Frederick and Harford counties, or new UST systems installed after 1/26/05 in Anne Arundel, Baltimore, Carroll, Cecil, Charles, Calvert, Frederick, Harford, Howard, Montgomery, and Prince George's counties.

#6 Use the **Existing UST System Flow Chart** (in question #1a above) to determine if the facility you are inspecting is in the HGRUA, and is required to install and sample three **(3)** groundwater monitoring wells (GWMWs). If the facility does qualify, were the three (3) wells installed? COMAR 26.10.02.03-4A(3)

If the owner received Department approval to opt-out of the required well installation, verify that the facility has a written MDE approval. COMAR 26.10.02.03-2E(1).

#7 Do the monitoring wells have liquid tight caps and manhole covers present to protect the wells from traffic? Duct tape from the original installation is a **(F)** Fail. Does the cap have a lock attached and does the manhole cover have working bolts on them? If no, this question **(F)** Fails. COMAR 26.10.03.04B(7) & (8).

#8 Inspector must verify if a copy of the groundwater sampling data is available and if the samples were collected within the past 180 days. COMAR 26.10.02.03-4A(5).

#9 If the facility is located in the HGRUA and has a potable well at the site, the inspector must verify if a copy of the potable well sampling data is available, and if the well was sampled within the past 180 days. COMAR 26.10.02.03-4A(5).

➢ Section 11: Inventory Control: COMAR 26.10.04.01 and 26.10.05.04A

The Inventory Control section applies to **metered** and **non-metered** UST systems. If the owner is required to gauge or measure the liquid level in the tank check (√) "Applicable" in the top right corner of the form and complete this section. A metered UST system has a gauge or meter measuring the gallons of liquid being dispensed through the system (example: gas station with a pump dispenser, bulk oil terminal dispensing oil to a loading rack, etc.)

Inspector must determine if the UST system is metered or non-metered. Complete questions 1 through 10 for metered storage systems and questions 3 through 6 for non-metered storage systems. Answer **(P)** Pass, **(PC)** Pass with/Corrections, **(F)** Fail, or **(NA)** Not Applicable.

COMAR 26.10.04.01
Metered Storage System
D. An underground storage system shall be designed to permit taking direct measurements of content level by the stick method.

E. The owner or operator shall ensure the liquid level of metered storage systems is measured using a stick or electronic method each day of operation, and shall reconcile the results with pump meter readings and receipt of product. These records shall be kept for 5 years at the facility or a location under the control of and designated by the owner or operator and shall be made available to the Department for inspection. Inventories shall be performed in accordance with "Doing Inventory Control Right", USEPA publication 510-B93-044 1993, incorporated by reference in COMAR 26.10.02.06I.

F. Inventory Variations.
(1) Inventory variations exceeding 1 percent plus 130 gallons of the metered quantity of a regulated substance over a period of 30 consecutive days shall be:
(a) Reported to the owner of the UST system; and
(b) Investigated immediately to determine the cause of the inventory variation.

(2) Daily inventory which shows 7 consecutive days of shortage totaling 80 gallons or more, regardless of percent, shall be:
(a) Reported to the owner of the UST system;
(b) Investigated immediately to determine the cause of the inventory variation and:
(c) **Report to the Department within two hours of discovery**.

(3) If, after investigation, the owner or operator determines that there is no indication of a leak, the owner or operator shall state the cause of the variation in the daily inventory records.

G. If the investigation required by §F of this regulation reveals a leak in the UST system, the owner and operator shall follow the procedures of COMAR 26.10.08.

H. The Department may require a precision test if the owner or operator of an UST system has failed to reconcile daily inventory records as specified in §E and §F of this regulation.

 # 1 For a metered storage system the inspector must evaluate that the owner or operator is recording the liquid level in the tank using a stick or electronic method for each day of operation. Pump meter readings (amount of product dispensed) and the amount of product received to the tank must also be recorded each day of operation. If the inventory records are not recorded each day of operation this section **(F)** Fails the inspection. Accurate inventory records are very important in monitoring gains and losses.

Inventories shall be performed in accordance with "Doing Inventory Control Right" This USEPA publication explains how inventory control works and can be downloaded from EPA at: www.epa.gov/swerust1/pub/doing.htm. COMAR 26.10.04.01E.

 # 2 Inspector must verify with the owner and/or operator that the inventory records are reviewed daily to monitor a gain or loss of liquid. Daily inventory records that show 7 consecutive days of shortage totaling 80 gallons regardless of percent, shall be reported to the owner of the UST system, reported to the Department, and investigated immediately to determine the cause of the loss. COMAR 26.10.04.01F(2)(a)(b).

 # 3 The appropriate calibration chart for the tank must be used and available on-site. Gauging charts for steel and fiberglass tanks are not interchangeable as the tank diameters and lengths are different. EPA's "Doing Inventory Control Right" document provides information on how to convert standard tank gauging charts from inches to the nearest 1/8-inch to gallons.

For electronic automatic tank gauging systems, it is important that the probe has been installed and calibrated to measure the full height of the tank. COMAR 26.10.04.01E.

 # 4 The owner and operator shall ensure that releases due to spilling and overfilling do not occur. Inspector must evaluate that stick readings are recorded before each delivery to confirm the tank will hold the volume being delivered, and after each delivery to confirm the amount delivered. The measurements can normally be found recorded on the bill of lading or on the daily inventory sheet. COMAR 26.10.04.01A.

 # 5 Inspector must visually inspect the gauging stick used to gauge the tank. The stick must be maintained in good operating condition, not worn, broken, and capable of measuring the level of product over the full range of the tank's height to the nearest 1/8-inch. The stick should be made of non-sparking material such as wood and varnish to minimize fuel from creeping above the actual fuel level, and marked in 1/8-inch increments with zero at the bottom. COMAR 26.10.05.04C(1).

 # 6 The gauging stick must be rigid and the proper length to measure the full height of the tank including the tank riser pipe. Gauging sticks must not have a rope, or string tied to it to compensate for sticks that are not of proper length. COMAR 26.10.04.01E.

 # 7 The tank must be gauged monthly for the presence of water using appropriate water-finding paste **(note: if using ethanol products a special water paste is required)**, discriminating oil/water interface probe, or ATG capable of measuring for water to the nearest 1/8-inch. The gauging event must be recorded even if zero water was detected. If more than 1 inch of water is detected, arrangement should be made for its immediate removal of the water. For USTs storing ethanol, no amount of water is acceptable. The inspector must verify if water measurements are recorded monthly for determining a **P)** Pass or **(F)** Fail. All discrepancies are to be recorded in the comment section. COMAR 26.10.04.01E.

 # 8 The past 12 months of inventory records must be maintained at the facility and have been made available to the inspector for review. Records not available **(F)** Fails the inspection. COMAR 26.10.05.06.

Inventory records must be maintained for 5 years at a location designed by the UST owner and made available upon request.

 # 9 Inspector must review the monthly reconciliation reports to confirm inventory variations do not exceed 1 percent plus 130 gallons of the metered quantity (sales) of a regulated substance over a period of 30 consecutive days.

EPA's "Doing Inventory Control Right" document provides step-by-step procedures to calculate monthly inventory variations. COMAR 26.10.04.01F(1).
Note: Inventory variations exceeding 1 percent plus 130 gallons of the metered quantity (sales) over a period of 30 consecutive days, shall be reported to the owner of the UST system and investigated to determine the cause of the inventory variation.

 # 10 If 12 months of inventory records reviewed do not show evidence of a release enter **(P)** Pass. If the inventory results indicate a suspected release, the inspector, owner and operator shall notify the Department **<u>within two (2) hours</u>**. **Note:** Consistent water intrusion into an UST system is considered a suspected release, and is also reportable to the Department, and **(F)** Fails the inspection.

➢ Section 12: Release Detection Summary COMAR 26.10.05

Tank Method: Complete for each Tank
Pipe Method: Complete for each Pipe Run

Some UST systems may have more than one method of release detection. In boxes provided indicate **(PR)** for primary method of release detection for each tank and piping, and if applicable **(S)** for secondary method.

If the primary method falls under one of the release detection methods, fill in the box with (**PR)** (primary method), then proceed to the appropriate section of release detection methods as indicated in the right side column.

Only complete the section(s) for the Primary methods being used by the owner/operator for each tank, and piping system. Check (√) Not Applicable for all others.

A **(P)Pass** inspection in each section is for when the criteria applies and is met. A **(F) Fail** inspection is for when the criteria applies but is **NOT** met **COMPLETELY**.

(Any primary release detection section evaluated that is marked **(F)** Fail inspection at the bottom of each section is an indication that the release detection requirement is **Non-Compliant**.)

All motor fuel systems are required to have a method or methods of release detection. Emergency power generator UST systems and heating oil (on-site consumptive use) USTs are exempt from release detection, however these systems must be precision tested at 15 years of age, and every 5 years thereafter.

Exception: UST system storing heating oil **that is sold to the public** is required to have a method of release detection.

If the inspector indicates "**None Needed"** for release detection a complete explanation must be provided in the comments section of the form. **(Example):** heating oil UST used for on-site consumptive use is not required to have a method of release detection.

A **farm** or **residential** tank of **1,100-gallons or less capacity** used for storing motor fuel or heating oil for non-commercial purposes **is exempt** from COMAR 26.10.02–.11.

The release detection system must be installed, calibrated, operated, and maintained in accordance with manufacturer instructions, including routine maintenance, and service checks for operability or running condition. COMAR 26.10.05.01A(2).

Owners and operators shall perform daily inventory control as described in COMAR 26.10.04.01 (See Section 11). **In addition, one of the following methods of release detection shall be performed on a monthly basis:**

➢ Section 12a: Automatic Tank Gauge (ATG) COMAR 26.10.05.04E

Automatic tank gauging can be used for release detection for the **tank only**. The piping system must have another method of release detection.

Equipment for automatic tank gauging that tests for the loss of regulated substance and conducts inventory control shall meet the following requirements:
Automatic Tank Gauge
COMAR 26.10.05.04 E**.**

(1) The automatic regulated substance level monitor test shall be capable of detecting a 0.2 gallon per hour leak rate from any portion of the tank that routinely contains a regulated substance and
(2) Inventory control or another test of equivalent performance, is conducted in accordance with the requirements of §B of this regulation.

EPA's document for evaluating "*Automatic Tank Gauge Systems for Release Detection–Reference Manual For Underground Storage Tank Inspectors*" can be obtained at EPA's publications web site.

 # 1 Record the make and model of the ATG System for each tank.

 # 2 To pass the inspection the unit must be turned on and working. There should a visual display indicating the system is operating. COMAR 26.10.05.01A(2).

 # 3 The owner's manual for the ATG control box and tank probe that is in use must be on-site. COMAR 26.10.05.01A(2).

 # 4 Indicate the frequency the ATG is performing test: **(D)** daily; **(W)** weekly; or **(M)** monthly. This information can normally be found in the system setup or tank test reports. COMAR 26.10.05.04E(1).

 # 5 It is important the inspector review the National Work Group on Leak Detection Evaluations (NWGLDE) list for the ATG system being used. NWGLDE will provide specific limitations such as: applicable products the ATG can be used on; limits on tank capacity; testing periods; calibration requirements; and evaluation comments regarding the ATG. COMAR 26.10.05.01A(2).

The National Work Group on Leak Detection Evaluations (NWGLDE) List web site is www.nwglde.org.

 # 6 System setup is reviewed by the inspector to verify all probes are functioning and recording results. System setup procedures for evaluating ATG setup can be found in the ATG owners manual. Also most ATG systems are listed in the EPA document, "*Automatic Tank Gauge Systems for Release Detection – Reference Manual For Underground Storage Tank Inspectors*". COMAR 26.10.05.01A(2), and COMAR 26.10.05.04E(1).

 # 6a Attach a copy of the ATG leak test printout (see example below), to page 19 of the Report for the month prior to your inspection. If the ATG system is not equipped with a printer, attach the last monthly hand written record. COMAR 26.10.04.05 D(b).

MDE Headquarters
1800 Washington. Blvd.
Baltimore MD 21230

```
START IN-TANK LEAK TEST
TEST BY KEY
FEB  7, 2006 12:37 PM

TEST LENGTH  2 HOURS

T 1:REGULAR 1
VOLUME     =  4890 GALS
ULLAGE     =  4838 GALS
90% ULLAGE=  3865 GALS
TC VOLUME  =  4901 GALS
HEIGHT     = 46.20 INCHES
WATER VOL  =     0 GALS
WATER      =  0.00 INCHES
TEMP       =  56.6 DEG F

* * * * * END * * * * *
```

```
STOP IN-TANK LEAK TEST
T 1:REGULAR 1
FEB  7, 2006  2:37 PM
```

MDE Headquarters
1800 Washington. Blvd.
Baltimore MD 21230

```
FEB  7, 2006  2:37 PM

LEAK TEST REPORT

T 1:REGULAR 1
PROBE SERIAL NUM 812300

TEST STARTING TIME:
FEB  7, 2006 12:37 PM

TEST LENGTH =     2.0 HRS
STRT VOLUME = 4901.4 GAL

LEAK TEST RESULTS
 0.20 GAL/HR TEST PASS

* * * * * END * * * * *
```

 # 7 Inspector must review the last two months and evaluate if at the time the test was performed, the tank was filled to proper capacity, and was completed in the required duration of time. The required capacity for testing and duration of time required to perform the test can be found on NWGLDE List web site at: www.nwglde.org for the ATG system used. COMAR 26.10.05.01 A(2).

Examples of typical problems with ATG systems:

ATG setup - Setup may have a tank being tested during busy product dispensing times therefore, test cannot be performed properly. Best quiet times for testing is early morning hours (1:00-4:00 a.m.).

ATG systems cannot perform a test due to insufficient product levels. Marinas typically have this problem during the off-season when product levels in the tanks are low. **Release Detection using ATG may not be an applicable method at every tank site.**

Continuous Statistical Leak Detection (CSLD) has limitations on product throughput. **Example:** Veeder-Root ATG has a monthly maximum throughput of 221,890 gallons. **Monthly throughput exceeding the limitations may not use CSLD as method of release detection.**

 # 8 Verify that the monitoring console and tank probes are on the NWGLDE List (www.nwglde.org), and that the manufacturer produces, services, and supports the equipment. Evaluate any restrictions that may be posted. COMAR 26.10.05.04I.

 # 9 Confirm the past 12 months of ATG release detection records are available at the facility. Inspector must evaluate if the ATG system has performed a 0.2 gallons per hour leak test from any portion of the tank that routinely contains a regulated substance. COMAR 26.10.05.04E(1), and COMAR 26.10.04.05D(1)(a)(b).

 # 10 This section **(F)** Fails the inspection if the monitoring results evaluated from the ATG release detection method indicate a release may have occurred. However, if the monitoring device is found to be defective and is immediately repaired, recalibrated, or replaced, and additional monitoring does not confirm the initial result, this section would be a **(PC)** Pass with Corrections**.** COMAR 26.10.08.01B(3).

➢ Section 12b: Vapor Monitoring (Tanks and/or Piping) COMAR 26.10.05.04 F

If vapor monitoring is the primary release detection method for the tank and/or piping system check (√) "Applicable" in the top right corner of the form and complete this section.

Field instruments such as field-screening instruments used by MDE are not an approved method for vapor monitoring.

CAUTION: MDE finds the majority of the facilities claiming to be using vapor monitoring as a method of release detection fails the inspection. The inspector must evaluate and complete this section carefully, and completely. Listing Vapor Monitoring as the primary method may target an audit from the Department.

Vapor Monitoring
(COMAR 26.10.05.04F) Within the excavation zone, vapor monitoring may be used for release detection if the following criteria are met:

(1) The materials used as backfill are sufficiently porous, such as pea gravel or sand, to readily allow diffusion of vapors from releases into the excavation area;
The stored regulated substance, or a tracer compound placed in the tank system, is sufficiently volatile to cause a vapor level that is detectable by the monitoring devices located in the excavation zone in the event of a release from the tank;
(3) The location of vapor monitoring devices is not subjected to ground water, rainfall, soil moisture, or other known interferences with vapor measurements for more than 30 consecutive days;
(4) The level of background contamination in the excavation zone will not interfere with the method used to detect releases from the tank;
(5) The vapor monitors are designed, calibrated, and operated to detect an increase in concentration of the regulated substance, a component of that substance, or a tracer compound placed in the tank system;
(6) In the UST excavation zone, the site is assessed to ensure compliance with the requirements in §F(1)—(4) of this regulation and to establish the number and positioning of vapor monitoring wells that will detect releases within the excavation zone from any portion of the tanks that routinely contains a regulated substance; and
(7) Vapor monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

Complete question #1 and answer for each UST system **(P)** Pass, **(PC)** Pass with/Corrections, **(F)** Fail, or **(NA)** Not Applicable for questions #2 - #11.

 # 1 Write in the make and model of the console for the Vapor Monitoring System.

 # 2 Determine if the Vapor Monitoring System panel/control box is working, (e.g., turned on, light on, display present). Fully automated vapor monitoring systems have permanently installed equipment to continuously, or periodically gather, and analyze vapor samples, and respond to a release with a visual or audible alarm. If there is no visual evidence the vapor monitoring system is working, the owner or operator must provide reasonable proof the system is operating. A complete description of proof of operation must be described in the comment section. COMAR 26.10.05.01A(2).

 # 3 Verify that the Vapor Monitoring System is listed on NWGLDE List (www.nwglde.org), and determine if there are any limitations. If there are limitations determine how they apply to this Vapor Monitoring System. COMAR 26.10.05.04I.

 # 4 Does the facility have an owner's manual or user's guide on site? Evaluate if the manual or guide is the correct document for the make and model being used. COMAR 26.10.05.01A(2).

 # 5 Can Vapor Monitoring be used based on the type of backfill material under and surrounding the USTs? The backfill material must be porous, such as pea gravel, or sand, to allow diffusion of vapors into the excavation zone. Normally an opening of the tank system such as a riser pipe can verify the type of backfill. The backfill should be clean enough that previous contamination does not interfere with the detection of a current leak. COMAR 26.10.05.04F(1).
If the backfill material is native soil that is not porous, this question **(F)** Fails the inspection (e.g., native soil must be porous sand). COMAR 26.10.03.04E(1–4) and PEI /RP 100-05 (5.4).

 # 6 Vapor monitoring senses or measures "fumes" from leaked product in the soil around the tank to determine if the tank or piping system is leaking. Research the NWGLDE List to determine the design, any calibration that may be necessary, and any time factor connected with the calibration, such as monthly or yearly, according to the manufacturer's instructions, operating functions of the Vapor Monitoring System, and any limitations listed.

Manually operated vapor monitoring systems range from equipment that immediately analyzes a gathered vapor sample to devices that gather a sample that must be sent to a laboratory for analysis. Monitoring results from manual systems are generally less accurate than those from automated systems. Manual systems must be used at least once a month to monitor a site and a log kept for each sample. COMAR 26.10.05.04F(5).

 # 7 Before installation of a vapor monitoring system a site assessment is necessary to determine the soil type, groundwater depth, flow direction, and the general geology of the site. Only a trained professional can accomplish this. The facility must have a Site Evaluation Report demonstrating and verifying this information, and evaluate any background contamination that was or is present that may interfere with the Vapor Monitoring System. The location of vapor monitoring devices cannot be subject to groundwater, rainfall, soil moisture, or other known interferences with vapor measurements for more than 30 consecutive days. Vapor monitoring wells are clearly marked and secured to avoid unauthorized access and tampering. COMAR 26.10.05.04F(6). **A copy of the Evaluation Summary (Site Assessment) cover sheet must be attached to this Report.**

 # 8 On an automatic vapor monitoring system review the system setup and verify that the settings are correct. It is crucial for the facility to have an owner's operation manual for the system to walk you through the system setup procedures for the proper settings and to verify that all of the probes are functioning. Beware of probes installed but either not working or not connected to the panel/ or control box.
COMAR 26.10.05.01A(2).

 # 9 Is the Vapor Monitoring System installed in the proper locations to confirm that the portion of the tank and piping that routinely contains product is being monitored (in the tank, and piping system backfill)? The system can either be manual or automatic. The sensors or probes cannot be outside the tank excavation and piping excavation to monitor the tank, and the piping system. The length of the piping system at a typical service station will require multiple vapor monitoring points and sensors to monitor the entire piping run. COMAR 26.10.05.04F(5) and COMAR 26.10.05.01A(2).

The inspector must review the vapor monitoring system on the NWGLDE List (www.nwglde.org) to determine the type of system being used, the operating principle, alarm conditions, calibration requirements, comments, and or restrictions.

 # 10 Owner/Operator must have available release detection records from the prior 12 months for your review at the time of the inspection with passing results. If a monthly vapor monitoring log or monthly results are not available, this question **(F)** Fails this inspection. COMAR 26.10.04.05D(b).

#11 After reviewing the release detection records you must determine if a suspected release has occurred. Each month of release detection records must show a "Pass" or this question **(F)** Fails the inspection. COMAR 26.10.08.01B(3).

➢ Section 12c: Interstitial Monitoring (Tank and Piping) COMAR 26.10.05.04 H

If Interstitial Monitoring is the primary release detection method for the tank and/or piping system check (√) "Applicable" in the top right corner of the form and complete this section.

Interstitial Monitoring
(COMAR 26.10.05.04H)
Interstitial monitoring between the UST system and a secondary barrier immediately around or beneath it shall be used, but only if the system is designed, constructed and installed to detect a leak from any portion of the tank that routinely contains a regulated substance, and also meets one of the following requirements:

(1) For double-walled UST systems, the sampling or testing method can detect a release through the inner wall in any portion of the tank that routinely contains a regulated substance;
(2) For UST systems with a secondary barrier within the excavation zone, the sampling or testing method used can detect a release between the UST system and the secondary barrier provided that:
(a) The secondary barrier around and beneath the UST system consists of artificially constructed material that is sufficiently thick and impermeable, at least 10-6 (exponent) centimeter/second for the regulated substance stored, to direct a release to the monitoring point and permit its detection;
(b) The barrier is compatible with the regulated substance stored so that a release from the UST system will not cause a deterioration of the barrier allowing a release to pass through undetected;
(c) For cathodically protected tanks, the secondary barrier shall be installed so that it does not interfere with the proper operation of the cathodic protection system;
(d) The ground water, soil moisture, or rainfall will not make the testing or sampling method used inoperative so that a release could go undetected for more than 30 consecutive days;
(e) The site is assessed to ensure that the secondary barrier is always above the ground water and not in a 25-year flood plain, unless the barrier and monitoring designs are for use under these conditions; and
(f) Monitoring wells are clearly marked and secured with bolts or a lock to avoid unauthorized access and tampering.
(3) For tanks with an internally fitted liner, an automated device can detect a release between the inner wall of the tank and the liner, and the liner is compatible with the substance stored.

Complete questions #1 and #3 for electronic interstitial monitoring systems and answer for each tank and piping system (P) Pass, (PC) Pass with/Corrections, (F) Fail, or (NA) Not Applicable for question #2 and #4 - #11.

Type of interstitial monitoring:
 # 1 Is the interstice space between the inner and outer walls of a tank, or piping system filled with a brine solution, an empty air space, or is there a vacuum present? List Liquid **(L)**, Air Space **(AS)**, Pressure/vacuum **(PV)** for each tank, and or piping system(s).

Manual/Visual Inspection Only:
 # 2 MDE does not recommend visual inspections of interstitial space as there is room for error due to inclement weather and schedules not allowing the required monthly check. Monitoring devices can be as simple as a gauging stick used at the lowest point of the containment to determine if liquid product has leaked and pooled there. Does the owner/operator have a gauging stick on site and calibrated (can you read the numbers) to the nearest 1/8-inch? COMAR 26.10.05.04A.

If the owner or operator does not have a written monthly log of the visual inspection this question **(F)** ails the evaluation.

Electronic System Only:
 # 3 What is the **Make** and **Model** of the console? List for each tank and piping system. Monitors can be sophisticated automated systems that continuously check for leaks.

#4 Is the console and sensor on the NWGLDE List (www.nwglde.org)? Inspector must evaluate limitations and how they apply to this Interstitial Monitoring System. Some monitors indicate the physical presence of the leaked product, either liquid, or gaseous. Other monitors check for a change in condition that indicates a hole in the tank, such as a loss of vacuum or a change in the level of a monitoring liquid (brine) between the walls of a double-walled tank or piping system. COMAR 26.10.05.04I.

#5 Determine if the Interstitial Monitoring System panel/control box is working, (e.g., turned on, light on, display present). Fully automated interstitial monitoring systems have permanently installed equipment to continuously or periodically monitor the space between the tank, or piping system and the secondary containment barrier. If there is not visual evidence the interstitial monitoring system is working, the owner or operator must provide reasonable proof the system is operating. A complete description of proof of operation must be described in the comment section. COMAR 26.10.05.01A.

#6 The interstice space must be monitored monthly and the inspector must evaluate if the probe or monitoring device is located in the correct position to alarm if there's a breach of the inner wall. Is the monitoring of the interstitial space at the lowest point of secondary containment for air filled or at the highest point of secondary containment for brine filled and is positioned so that other equipment will not interfere with its proper operation? If the interstitial system is not fully automated (electronic) the inspector must evaluate the monthly written log to determine if the interstitial space of the UST system (tank and/or piping) is monitored.

An example of monthly monitoring for the piping is that the containment sumps below the dispenser and the STP sump are visually inspected monthly and a log is maintained listing the date of inspection, person performing the inspection, and the locations inspected. COMAR 26.10.05.04A.

#7 Inspector must check that the monitoring device has been calibrated, operated, and maintained according to the manufacturer's instructions. Check on the NWGLDE List (www.nwglde.org), to determine if any limitations are listed for the monitoring device. Some manufacturers do not require calibration of monitoring devices, however every manufacturer must have an operability test procedure. COMAR 26.10.05.01A(2).

Summary:
#8 Owner/Operator must have prior 12 months of release detection records with passing results for the review at the time of your inspection. If one month shows a release or if the system showed a non-pass during the prior 12 month period the owner must have a written documentation to show the cause of the failure and what corrections were performed. If the full 12 months of release detection records are not available or no documentation is available for non-passing results, then this question is a **(F)** Fail. COMAR 26.10.04.05D(b).

#9 If the system incorporates an air space in the interstice between the inner and outer wall of the tank or piping system, there can be no evidence of liquid in the air filled space. If the system incorporates a liquid or brine solution in the interstice, there can be no loss or gain of the solution in the monitoring sump. If the system incorporates the use of a partial vacuum or an over pressure system, the gauge must read within the manufacturer's design specifications according to the owner's manual or what is listed on the NWGLDE List for that specific monitoring system. COMAR 26.10.05.01A(2).

#10 Owner/Operator must have prior 12 months of release detection records for your review at the time of your inspection with passing results. If one month shows a loss of product or suspected release or if the system showed a non-pass during the prior 12 month period the owner must have a written log, or documentation to show the cause of the failure, and what corrections were performed. If the full 12 months of release detection records are not available or no documentation is available with non-passing results, then this question **(F)** ails the inspection. COMAR 26.10.08.01B(3). **Note: Release of product or suspected loss of product is reportable to MDE.** COMAR 26.10.02.01A.

#11 Where possible visually inspect the secondary containment for holes, cracks, or leaks. Inspect the pressure or vacuum gauges for leaks or signs of aging (e.g. glass face on gauge cracked, or missing; reservoir that contains the solution has holes, cracks, or leaks; and riser pipes utilized as part of the interstitial monitoring system do not have damaged or missing manhole covers, are clearly marked, and secured with bolts, or a lock to avoid unauthorized access, and tampering). COMAR 26.10.05.01A(2).

➢ Section 12d: Statistical Inventory Reconciliation COMAR 26.10.05.04B

If Statistical Inventory Reconciliation (SIR) is the primary release detection method for the tank and/or piping system check (√) "Applicable" in the top right corner of the form, and complete this section.

To use SIR as a method of release detection the daily inventory records required to be maintained in Section 11 must be reviewed by a Department approved third party Company to reconcile for inventory variations. The Department accepts third party vendors listed on the NWGLDE List web site (www.nwglde.org).

Statistical Inventory Reconciliation
(COMAR 26.10.05.04)

(1) Product inventory control, or another test of equivalent performance, shall be conducted monthly to detect a release with a probability of detection of at least 0.95 and a probability of false alarm of at most 0.05.
(2) Detection level shall be:
  (a) 0.2 gallon per hour leak rate; or
  (b) 150 gallons within a month.
Statistical Inventory Reconciliation (SIR), shall be performed in the following manner:
(a) Inventory volume measurements shall be performed in accordance with COMAR 26.10.04.01E and F; and
(b) Records are reviewed on a monthly basis by a Department-approved third party to reconcile for inventory variations.

Answer **(P)** Pass, **(PC)** Pass with Corrections, or **(F)** Fail for questions #1 through #4.

#1 SIR is a leak detection method that uses sophisticated computer software to conduct a statistical analysis of inventory, delivery, and dispensing data. SIR methods are either quantitative, or qualitative, and not all SIR methods can be used on manifolded tank systems. Research the SIR method to determine if the method is on the NWGLDE List and if there are any limitations or restrictions listed. Write the method name in the space provided. COMAR 26.10.05.04I.

#2 Review the dates of the inventory to determine if the records or data are being sent to the vendor within 5 days of the 30-day monitoring period.
COMAR 26.10.05.04B(3)(b).

#2a Review the dates of the SIR vendor results to determine if the results were received by the owner/ operator within 15 days of submittal of the data to the vendor, (when is the owner/ operator receiving the results back from the vendor?). Enter **(P)** Pass if the owner operator is receiving the results within the 15-day period. COMAR 26.10.05.04B(3)(b).

#3 Check the SIR results to determine if the vendor had sufficient amount of inventory data from the owner/operator to evaluate to determine if the UST system is within 0.2 gph leak rate or 150 gallons within the month. The third party vendor will normally list "insufficient data" on the report if the owner/operator did not submit enough data to evaluate. COMAR 26.10.05.04B(2)(a) and (b).

#4 Review each month's leak detection results to determine if there is evidence that shows a fail or inconclusive for any of the prior 12-month period.
COMAR 26.10.08.01B(3).

SIR Third Party Evaluation:

Pass:—According to the analyzed data, the UST system tests tight or the detection level is at or under the leak threshold of 0.2 gallon per hour leak rate, or 150 gallons within a month.

Fail:—Analyzed data indicate a loss of product from the system or an influx of groundwater. However, a FAIL does not *necessarily* indicate that the system is leaking. A (F)AIL may indicate dispensers are not calibrated, inaccurately metered deliveries, or stolen product. There is also a chance that a FAIL is a false alarm. The owner/operator must determine the possible reasons for the FAIL.

Inconclusive: —The analyzed data cannot determine a pass or fail. The information provided to the SIR vendor is incomplete and it is not possible to make a determination. This often can be traced back to poor tank sticking or bookkeeping practices (for example, a new employee who has received inadequate training). If using an electronic (ATG) method for product inventories, re-calibration may be required. Whatever the reason, an **INCONCLUSIVE** result means, in effect, that the owner/operator has failed to perform leak detection on the UST system in question for that month and the possible reasons for the inconclusive result must be determined.

➢ Section 12e: Groundwater Monitoring COMAR 26.10.05.04 G

If Groundwater Monitoring is the primary release detection method for the tank and/or piping system check (√) "Applicable" in the top right corner of the form and complete this section.

Note: The Department has found very few owners using groundwater monitoring (GWM) as a method of release detection although they list it on the registration form submitted to the Department. The inspector must evaluate and complete this section carefully, and completely. Listing GWM as the primary method may target an audit from the Department.

Groundwater Monitoring
(COMAR 26.10.05.04G)

Testing or monitoring to detect a regulated substance on the ground water shall meet all of the following requirements:

(1) The regulated substance stored is immiscible in water and has a specific gravity of less than one;

(2) Ground water is never more than 15 feet from the ground surface and the hydraulic conductivity of the soil or soils between the UST system and the monitoring wells or devices is not less than 0.01 centimeter/second, with the soil consisting of gravels, coarse to medium sands, coarse silts, or other permeable materials;

(3) The slotted portion of the monitoring well casing shall be designed to prevent migration of natural soils or filter pack into the well and to allow entry of regulated substance on the water table into the well under both high and low ground water conditions;

(4) Monitoring wells shall be sealed from the ground surface to the top of the filter pack;

(5) Monitoring wells or devices shall intercept the UST excavation zone or be positioned as close to it as is technically feasible;

(6) The method of measuring the contents of the well, whether automatic or manual shall be capable of detecting the presence of at least 1/8 of an inch of free product on top of the ground water in the monitoring wells;

(7) Within and immediately below the UST system excavation zone, the site is assessed to ensure compliance with the requirements in §G(1)—(5) of this regulation and to establish the number and positioning of monitoring wells or devices that will detect releases from any portion of the tank that routinely contains a regulated substance;

(8) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering;

(9) A key, a lock combination number, or access tool for all monitoring wells is provided to the Administration upon request and made available on the site where the UST system is located.

Answer **(P)** Pass, **(PC)** Pass with Corrections, or **(F)** Fail for each question for the tank, and piping system using Groundwater Monitoring (GWM). If GWM is used for the tank but not the piping indicate N/A in the appropriate box.

#1 Use a measuring device such as an electronic interface probe or water measuring tape that has been decontaminated, measure the distance from the top of casing (TOC) to the air/water interface in the well casing to determine if the groundwater is within 15 feet from ground surface. If the water table interface is deeper than 15 feet from ground surface then question # 1 **(F)** Fails inspection. COMAR 26.10.05.04G(2).

#2 Review the monitoring well drilling logs in the site evaluation or site assessment report to determine if the well screen (slotted portion) of the casing intercepts the water table to allow entry of product into the well. The monitoring well must be constructed with screen with a minimum slot size of 0.02 inch and a maximum slot size of 0.025 inch. The screen must be placed at a minimum 10 feet below the detected water table and 10 feet above the water table, at a minimum.

In some cases for shallow water table conditions (10 feet above the water table), the requirements cannot be met. In this instance the screen may be extended to within 2 feet of the ground surface to allow for a proper surface seal, however the well screen must be across the water interface. COMAR 26.10.05.04G(3).

#3 Monitoring wells must either intercept the UST excavation zone and/or be positioned so they are as close as technically feasible to the UST excavation and the soils must consist of gravels, coarse to medium sands, coarse silts, or other permeable materials. Wells located away from the tank, and piping systems may not detect a release. GWMs for the piping system may require multiple wells especially for facilities with many dispensers. COMAR 26.10.05.04G(5).

#4 Are the regulated substances immiscible in water and have a specific gravity of less than one? This means the regulated substance **<u>will not</u>** blend or mix with water, and it is light enough to float on top of water. COMAR 26.10.05.04G(1).

#5 Review the site evaluation report (may be called phase II evaluation or site assessment) to obtain and verify the above information, and also to determine if the evaluation contains information pertaining to data demonstrating that any residual contamination (if present) will not interfere with the groundwater monitoring (previous releases of product that would falsely indicate a current release). **Attach a copy of the evaluation cover page to this Report.** MDE will request a complete copy of the report at the time of the audit review. COMAR 26.10.05.04G(7).

#6 The device used to monitor the groundwater must be capable of detecting as little as 1/8 inch of free phase product on the groundwater and the records kept demonstrate the results are recorded on a monthly basis. The devices may be manual or electronic. If using a manual device it must be operated at least once a month and recorded in a Logbook. Electronic devices can be permanently installed in the well for automatic, continuous measurements for leaked product. The Department has observed monthly groundwater laboratory analysis for monitoring each site well. If groundwater sampling is used the proper U.S. Environmental Protection Agency sampling method is 8260 full suite for volatile organic compounds (VOCs). If the inspector has questions regarding the appropriate sample method they should contact the laboratory performing the analysis or contact MDE Oil Control Program. COMAR 26.10.05.04G(6).

➢ Section 12f: Manual Tank Gauging (Tank Only) COMAR 26.10.05.04C

Manual Tank Gauging can be used for the tank **only**.

If Manual Tank Gauging is the primary release detection method for the tank check (√) "Applicable" in the top right corner of the form and complete this section.

Manual Tank Gauging
(COMAR 26.10.05.04C)

(1) Manual tank gauging using equipment maintained in good operating condition, and capable of measuring the level of oil over the full range of the tank's height to the nearest 1/8 inch, shall be performed as follows:

(a) Tank liquid level measurements shall be taken at the beginning and ending of a period of at least 36 hours during which liquid may not be added to or removed from the tank;

(b) Level measurements shall be based on an average of two consecutive stick readings at both the beginning and ending of the period; and

(c) A release is indicated and subject to the requirements of COMAR 26.10.08 if the variation between beginning and ending measurements exceeds the weekly or monthly standards in the following table:

Nominal Tank Capacity	**Weekly Standard** (one test)	**Monthly Standard** (average of four tests)
550 gallons or less	10 gallons	5 gallons
551—1,000 gallons	13 gallons	7 gallons
1,001—2,000 gallons	26 gallons	13 gallons

(2) Only tanks of 550 gallons or less nominal capacity may use manual tank gauging as the sole method of release detection in accordance with COMAR 26.10.05.04C. Tanks of 551 to 2,000 gallons may use manual tank gauging, but only in conjunction with precision tightness testing or hydrostatic testing conducted every 5 years as permitted under COMAR 26.10.07. Tanks of greater than 2,000 gallons nominal capacity may not use this method to meet release detection requirements.

Correct gauging, recording, and interpretation are the most important factors for successful tank gauging. The accuracy of the gauging can be greatly increased by applying product-finding paste on the gauge stick before taking measurements. EPA publication, "Manual Tank Gauging For Small Underground Storage Tanks", explains how to perform gauging found at: www.epa.gov/swerust1/pubs/manual.htm.

Answer questions #1 through #4 for each tank **(P)** Pass, **(PC)** Pass with/Corrections, **(F)** Fail, or **(NA)** Not Applicable.

Inspector must evaluate the tank capacity to determine if question #1 or #2 is applicable. Use a valid tank chart from the owner/operator for a tank that is **less** than 550 gallons capacity. Another option to determine the approximate tank capacity is to take a direct stick reading from the bottom of the tank to the top of the fill pipe, then insert a tape measure into the fill pipe sliding along the wall of the pipe until the end of the tape measure "snags" the fill pipe where it is threaded into the top of the tank. Subtract this measurement from the first measurement taken of the entire height of the tank and the fill pipe. The number that is the answer after the subtraction is the approximate diameter in inches of the tank. Use a tank chart to determine the approximate size of the tank capacity. Tanks with a capacity of 550 gallons or less and not metered may use weekly manual tank gauging conducted in accordance with COMAR 26.10.05.04C.
If the tank capacity is 551 through 2,000 gallons, in addition to manual stick gauging requirements the owner/operator must also perform tightness testing as required in COMAR 26.10.07. Tanks greater than 2,000 gallons nominal capacity **may not** use this method to meet the release detection requirements.

#1 If the tank capacity is 550 gallons or less indicate **(P)** Pass in the appropriate tank box. COMAR 26.10.05.04C(2).

#2 If the tank capacity is 551 through 2,000 gallons indicate **(P)** Pass in the appropriate tank box. **Note:** Manual tank gauging must be combined with tightness testing. COMAR 26.10.05.04C(2).

#3 The owner/operator must have a rigid gauging stick on site capable of measuring the full height of the tank from the bottom to, at a minimum, the top of the fill pipe without bouncing the stick on the bottom of the tank. The stick must have readable measuring increments to 1/8 inch. Inspector must verify for the presence of a rigid gauging stick and confirm that a tank gauging chart for the tank using manual tank gauging is present on site to **(P)** Pass this question. COMAR 26.10.05.04C(1).

#4 To **(P)** Pass this question, the inspector must confirm a weekly written log or an electronic log is maintained. COMAR 26.10.05.04C(1) and COMAR 26.10.04.05C(4).

#5 Inspector must evaluate the prior 12 months records to determine if the variation is between the weekly and monthly variation standard listed on the chart below.
If the monthly records for 12 consecutive months do not exceed the appropriate standard, this question **(P)** Passes the inspection. COMAR 26.10.08.01B(3).

Nominal Tank Capacity	**Weekly Standard** (one test)	**Monthly Standard** (average of four tests)
550 gallons or less	10 gallons	5 gallons
551—1,000 gallons	13 gallons	7 gallons
1,001—2,000 gallons	26 gallons	13 gallons

If using manual tank gauging as the sole method of release detection, the UST is less than 2,000 gallons capacity, and the system is **metered**, then **Go to Section 11: Inventory Control and complete the section.**

➢ Section 12g: Safe Suction (Suction Piping Only) COMAR 26.10.05.02D(3)

Suction Piping
(COMAR 26.10.05.02D(3))

Underground piping that conveys regulated substances under suction shall be tested for tightness at least every 2 years with a precision test performed for 1 hour at a pressure between 5 and 15 pounds per square inch that detects a 0.025 gallon per hour release, or be monitored monthly in accordance with Regulation .04F—I of this chapter.

Release detection **is not** required for suction piping when, **(also called safe suction)**:

(a) The piping operates at less than atmospheric pressure;

(b) The piping is sloped so that the contents of the pipe will drain back into the storage tank if the suction is released;

(c) A single check valve is included in each suction line;

(d) The check valve is located directly below and as close as practical to the suction pump; and

(e) A method for visual inspection to determine compliance is provided.

If the inspector determines the suction piping is **Safe Suction** in accordance with the above standards check (√) "Applicable" in the top right corner of the form and complete this section. Answer **(P)** Pass, **(F)** Fail, or **(PC)** Pass with Corrections for each question.

 # 1 Inspector must visually evaluate that the piping is sloped back to the tank and operates under atmospheric pressure or less. The proper slope can be difficult to visually determine with accuracy. If the dispenser pump is located down gradient of the top of the tank (on a slope or hill) safe suction **cannot** be used as release detection for the pipe.

If visual evaluation indicates the slope is to the tank, this question **(P)** Passes the inspection. COMAR 26.10.05.02D(3)(b).

 # 2 The UST system **cannot** have a check valve at the tank and one under the dispenser pump. **The check valve must be located directly under the dispensing pump**. The inspector must evaluate the presence of the check valve by visual inspection or documentation provided by the tank owner. Some testers document the presence of check valves on the precision test reports. If it cannot be verified by visual observation or documentation then the union, coupling, or check valve housing will have to be disassembled to verify if the check valve is present. This would only have to be performed once to document. COMAR 26.10.05.02D(3)(d).

➢ Section 12h: Automatic Line Leak Detectors (Pressurized Piping Only) COMAR 26.10.05.02D(2)

All pressurized piping systems must be equipped with an Automatic Line Leak Detector. If the product piping is pressurized check (√) "Applicable" in the top right corner of the form and complete this section.

Pressurized Piping
COMAR 26.10.05.02D(2)

Underground piping that conveys regulated substances under pressure shall:

(a) Be equipped with an automatic line leak detector which is tested annually and which will:

(i) Alert the operator to the presence of a leak by restricting or shutting off the flow of a regulated substance through piping or triggering an alarm, and

(ii) Detect a release of a regulated substance of at least 3 gallons per hour at 10 pounds per square inch line pressure within 1 hour;

(b) Be tested for tightness annually, with a precision test that detects a 0.10 gallon per hour release at 1.5 times the operating pressure, and the test shall be performed for at least 1 hour; or

(c) Be monitored monthly in accordance with Regulation .04F—I of this chapter.

Complete question #1 and answer questions #2 through #7 with a **(P)** Pass, **(F)** Fail, or **(PC)** Pass with Corrections.

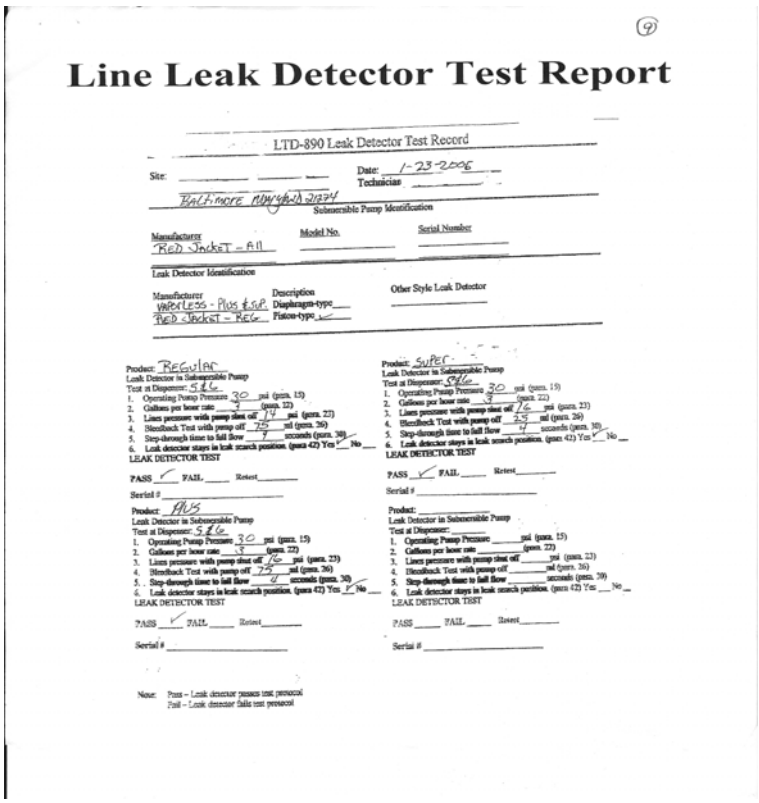
 # 1 Which type of automatic line leak detector (ALLD) is being used? The ALLD can be found on submersible turbine pump (STP) or in line using an approved "T" fitting: mechanical – (**M**) no wire connected to it; or electronic – (**E**) hard wired or wireless. Enter either an **M** or **E** for each piping system.

If the inspector is unsure of the type of ALLD research the appropriate model by checking the NWGLDE List or with the manufacturer of the ALLD. Most manufacturers have information posted on their web site.

 # 2 Review the NWGLDE List at: www.nwglde.org, to determine if the automatic line leak detector (ALLD) is third party certified. If the ALLD is listed as approved this question **(P)** Passes the inspection. The NWGLDE List may also state restrictions and the manufacturer's limitations. COMAR 26.10.05.04I.

#3 All ALLDs must **pass** an annual field test for operability for detection of a 3.0 gph leak at 10 psi. Obtain and review from the owner/operator the prior year's operability test for each pressurized piping system ALLD.

A test report certificate indicating "PASS" with no data support **is not** an acceptable test report. COMAR 26.10.05.02D(2)(a). Inspector must evaluate the test data sheet (example listed below).



9

Line Leak Detector Test Report

LTD-890 Leak Detector Test Record

Site: Date: 1-23-2006
Technician:
Baltimore MD 21224
Submersible Pump Identification

Manufacturer: RED JACKET - All
Model No.
Serial Number

Leak Detector Identification

Manufacturer: VAPORLESS - PLUS & SUP. RED JACKET - REG
Description: Diaphragm-type ___ Piston-type ✓
Other Style Leak Detector

Product: REGULAR
Leak Detector in Submersible Pump
Test at Dispenser: Side
1. Operating Pump Pressure 30 psi (para. 15)
2. Gallons per hour rate 3 (para. 22)
3. Lines pressure with pump shut off 14 psi (para. 23)
4. Headback Test with pump off 25 ml (para. 26)
5. Step-through time to full flow 7 seconds (para. 30)
6. Leak detector stays in leak search position. (para 42) Yes ✓ No ___
LEAK DETECTOR TEST
PASS ✓ FAIL ___ Retest ___
Serial # ___

Product: SUPER
Leak Detector in Submersible Pump
Test at Dispenser: Side
1. Operating Pump Pressure 30 psi (para. 15)
2. Gallons per hour rate 3 (para. 22)
3. Lines pressure with pump shut off 16 psi (para. 23)
4. Headback Test with pump off 24 ml (para. 26)
5. Step-through time to full flow 4 seconds (para. 30)
6. Leak detector stays in leak search position. (para 42) Yes ✓ No ___
LEAK DETECTOR TEST
PASS ✓ FAIL ___ Retest ___
Serial # ___

Product: PLUS
Leak Detector in Submersible Pump
Test at Dispenser: Side
1. Operating Pump Pressure 30 psi (para. 15)
2. Gallons per hour rate 3 (para. 22)
3. Lines pressure with pump shut off 16 psi (para. 23)
4. Headback Test with pump off 24 ml (para. 26)
5. Step-through time to full flow 4 seconds (para. 30)
6. Leak detector stays in leak search position. (para 42) Yes ✓ No ___
LEAK DETECTOR TEST
PASS ✓ FAIL ___ Retest ___
Serial # ___

Product:
Leak Detector in Submersible Pump
Test at Dispenser:
1. Operating Pump Pressure ___ psi (para. 15)
2. Gallons per hour rate ___ (para. 22)
3. Lines pressure with pump shut off ___ psi (para. 23)
4. Headback Test with pump off ___ ml (para. 26)
5. Step-through time to full flow ___ seconds (para. 30)
6. Leak detector stays in leak search position. (para 42) Yes ___ No ___
LEAK DETECTOR TEST
PASS ___ FAIL ___ Retest ___
Serial # ___

Note: Pass – Leak detector passes test protocol
Fail – Leak detector fails test protocol

#4 Review that the ALLD is calibrated, operated, and maintained per manufacturer instructions in addition to limitations listed on the evaluation summary of the NWGLDE List. If the ALLD meets the manufacturer and NWGLDE requirements this question **(P)**Passes the inspection. COMAR 26.10.05.01A(2) and COMAR 26.10.05.04I.

 # 5 Inspector must visually inspect each ALLD for signs of leakage. Any sign of leakage, weeping, or dripping of product from the ALLD is a **(F)** Fail for this question. **Note:** ALLDs do not monitor or test themselves for leaks, therefore leaks in the ALLD may occur without detection in the system. COMAR 26.10.08.01B(3).

 # 6 Each pressurized piping system must be monitored by an ALLD. This includes any satellite piping system typically used at truck stops for fueling both sides of the vehicle. Satellite pipes must be evaluated closely to determine if the ALLD is monitoring the pressurized pipe. If the inspector determines all product pipes are monitored by an ALLD this question **(P)** Passes the inspection. COMAR 26.10.05.02D(2)(a).

 # 7 There must be a period of **quite-time (i.e. dispensing must be shut down)** for an electronic ALLD to perform its required test. Inspector must evaluate the ALLD test history and set-up on the ATG to determine if there is documentation to support the ALLD has performed a test within the previous 72 hrs of the inspection. If documentation is available the ALLD has tested the line within 72 hrs, this question **(P)**Passes the inspection. COMAR 26.10.05.02D(2)(ii).

 # 8 Determine the STP will shut off when the dispensers stop pumping. The STP may be wired incorrectly or there may be a malfunction somewhere in the system allowing the STP to keep running even when the dispensers are not dispensing product. A quick check will require all dispensers to be turned off for approximately 15 seconds while the inspector touches the pump head with a hand or screw driver to detect vibration. If vibration is detected while dispensers are in the off position, this question **(F)** Fails the inspection. NFPA 30A- (6.3.3).

➢ Section 13: Suspected Release Notification COMAR 26.10.02.01 and 26.10.08.01

Check (√) **Yes** or **No** for question #1 and if yes answer #2.

#1 Do you suspect or have you detected a release during this inspection? Several individual findings may constitute a release. This may include but is not limited to, detection of saturated soil; odors or free phase product in tank field monitoring pipes, or wells; inventory discrepancies; or a release detection results showing failures. If you detected or suspect a release, check (√) **Yes** for the question and complete #2. COMAR 26.10.02.01A.

Please use common sense for surface leaks. If a weep, or drip is detected and it can be corrected or stopped, and cleaned up, even in dispenser pans, or sumps and/or containment sumps (unless they are full of petroleum product), it **does not** need to be reported to MDE, however it must be noted in the inspection report.

#2 Under Maryland Law, and Regulation, a suspected or detected release must be reported to the Department **immediately but no later than 2 hours** after detection. Check (√) **Yes**, or **No** for this question. Did you report the suspected, or detected release to the Department? If a report was made, list the date, and time of the report. **Note:** The Department takes reporting releases very seriously and **failure to notify the Department** may result in enforcement action that could include revoking your Inspector Certification, civil penalties, and other legal sanctions. COMAR 26.10.01.03B(1–7).

MDE REPORTING NUMBERS: 410-537-3442 or after hours 1-866-633-4686.

COMAR 26.10.02.01 Underground Storage Tanks

.01 Program Scope

A. A person may not pump, discharge, spill, throw, drain, deposit, or cause to be deposited, oil, other matter containing oil, into, near, or in an area likely to pollute waters of the State.

B. A person violating these regulations is subject to sanctions under Environment Article, Title 4, Subtitle 4, Annotated Code of Maryland, in addition to the permit and license modification, suspension, or revocation proceeding and in addition to any other sanctions provided by law.

C. Responsibility for the prompt control, containment, and removal of any released regulated substance shall be with the person responsible for the discharge, the owner of the property, the owner of the regulated substance, the owner and operator of the storage system, and the person-in-charge of the facility, vessel, or vehicle involved in the release. For releases occurring from improperly abandoned storage systems, the current landowner, and any person who owned, leased, or was otherwise responsible for a system at the time it was abandoned shall also be responsible. This responsibility shall continue until removal of the released regulated substance has been accomplished to the satisfaction of the Department.

D. These regulations are not intended to and do not relieve the owners or operators of the duty to comply with all other government regulations

COMAR 26.10.08.01 Release Reporting, Investigation and Confirmation

.01 Reporting of Suspected Releases.

A. If a storage system fails a test for tightness, is otherwise determined to be leaking, or there exists evidence of a discharge, the person conducting the test, the owner, and the operator of the storage system shall notify the Department within 2 hours. Two consecutive inconclusive tests are considered a failure and shall be reported as required in this chapter.

B. Circumstances evidencing a discharge that require reporting under §A of this regulation include, but are not limited to, the following:

(1) The discovery of released regulated substances at the UST site or in the surrounding area, such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface water;

(2) Unusual operating conditions such as the erratic behavior of product-dispensing equipment, the sudden loss of a regulated substance from the UST system, or an unexplained presence of water in the tank, unless system equipment is found to be defective but not leaking, and is immediately repaired or replaced; and

(3) Monitoring results from a release detection method required under COMAR 26.10.05.02 and .03 that indicate a release may have occurred, unless the monitoring device is found to be defective, and is immediately repaired, recalibrated, or replaced, and additional monitoring does not confirm the initial result.

- **Return Original Report to MDE No Later Than (30) Days After Inspection Date.**

The Certified Inspector and Owner/Operator must sign page 2 and initial the bottom of page 24 of the inspection form.

Inspections commonly result in the discovery of failed line leak detectors, malfunctioning overfill and spill prevention equipment, and continuous electronic leak detection equipment that needs to be replaced. Trained and certified Inspectors also holding a valid Technician certification have the capacity of replacing such non-functioning parts on existing systems.

The relevant equipment manufacturers shall properly certify Inspectors and Technicians on their equipment.

UST Repair Activities (COMAR 26.10.06.01)

A. The Department shall issue certifications to individuals for the following underground storage tank categories:

B. Individuals shall only perform work for which they have received Department certification.

C. Individuals may obtain certification in one or more categories if they meet the requirements of COMAR 26.10.06.01–.04.

Inspector Requirements COMAR 26 10 .06.04

A. A certified inspector is allowed to conduct environmental compliance audits and inspections of underground storage tank systems if the following requirements are met:

(1) A score of 90 percent or better is achieved on the underground storage systems inspector certification test given by the Department or its representative; and

(2) There is verifiable proof of completion of all of the following:

(a) One or more nationally recognized and Department approved training courses, classes, examinations, or workshops pertaining to UST design, installation, testing, or inspection;

(b) An inspector orientation course provided by the Department; and

(c) Payment of a $300 application fee for certification remitted to the Department, and made payable to the Maryland Oil Disaster Containment, Clean-up, and Contingency Fund.

B. The requirements in §A(2)(a) of this regulation may be waived if the applicant has equivalent training or education as determined by the Department

Refusal, Suspension, or Revocation COMAR 26.10.06.07

A. Certification obtained under this chapter may be suspended or revoked in accordance with State Government Article, §10-226, Annotated Code of Maryland.

B. The Department may deny an application for certification if the applicant has demonstrated a history of noncompliance with the provisions of this subtitle.

C. The Department may revoke the certification of a technician, inspector, or remover if the individual has done one or more of the following:

(1) Demonstrated a willful disregard or repeated violations of the regulations in this subtitle;

(2) Willfully submitted false information to the Department; or

(3) Committed an act requiring suspension after having certification suspended previously.

D. A certified technician, inspector, or remover shall surrender all State certification documents to the Department upon notification of suspension or revocation.

A certified UST inspector must be cooperative with MDE, be knowledgeable of the regulations pertaining to UST systems and have proof of certification during inspections. The inspector must also utilize proper safety equipment (e.g. traffic cones to close off the areas to be inspected from vehicles) and have proper hand tools, clothing, field instruments, etc.

Conflict of Interest COMAR 26.10.06.10

A. Except as provided in §B of this regulation, a certified inspector may not be:

(1) The owner or operator of the tank;

(2) An employee of the tank owner; or

(3) A certified technician on the same installation, replacement, or upgrade activity for which the technician is a certified inspector.

B. A certified inspector who is also a certified technician may correct deficiencies during a compliance inspection of the operation of an underground storage system.

C. The Department may allow an oil storage facility or UST system owner to employ one or more certified inspectors if the Department determines the owner:

(1) Establishes procedures to prevent falsification of inspections and inspection documents;

(2) Demonstrates that continuing education, especially targeting pollution prevention and tank management, is practiced by the UST owner; and

(3) Signs an agreement with the Department that defines expectations, standard operating procedures, and quality assurance plans that the owner shall implement to ensure a conflict of interest does not occur.

An underground storage system shall be installed, upgraded, and repaired only in the continuous on-site presence and under the direction of an individual who is a certified underground storage system technician. COMAR 26.10.06.01D

The following UST activities require a certified technician to be present on site during the entire process:

1. Removing, abandonment in place or a change in service of underground tanks, or piping.

2. Testing, repairs, or upgrades on a UST system that requires excavation, or cutting the concrete. This includes work on tanks, piping (product, vapor recovery, riser or vent), corrosion protection, automatic tank gauge (ATG) interstitial sensors, monitoring wells, lining, proving structural integrity including tightness testing, riser pipes, spill buckets, and overfill protection devices.

3 Installing an overfill device (i.e. drop tube Flapper valve overfill alarm or ball float valve). Replacing or repairing a damaged spill bucket.

4. Installing a drop tube.

5. Reconstructing, abandoning, or closing monitoring pipes in the tank backfill.

6. Installing heat shrinking sleeves or watertight boots to flex connectors for corrosion protection.

7. Installing or replacing anodes on risers or flex connectors for corrosion protection.

8. Installing an ATG (in-tank leak detection device) or interstitial sensors, where the conduit and riser were not previously installed.

9. Installing additional anodes or an impressed-current system to an existing UST system.

10. Overseeing an internal inspection of a tank.

11. Replacing a UST system component with a different model component.

An underground storage system shall be closed only in the continuous on-site presence and direction of an individual who is an underground storage system **technician or remover**. COMAR 26.10.06.01E

USTs that are **not** required to be registered and are excluded from the requirements of COMAR 26.10.02–26.10.11:

(1) Any UST system holding hazardous wastes listed or identified under Subtitle C of the Resource Conservation and Recovery Act or a mixture of such hazardous waste and other regulated substances;

(2) Any wastewater treatment tank system that is part of a wastewater treatment facility regulated under §402 or 307(b) of the Clean Water Act (33 U.S.C. §466 et seq.);

(3) Equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks;

(4) Any UST system that contains a de minimus concentration of regulated substances;

(5) Any emergency spill or overflow containment UST system that is expeditiously emptied after use;

(6) Any residential UST system as defined under COMAR 26.10.02.04B(64);

(7) Any farm UST system as defined under COMAR 26.10.02.04B(64).

****Disclaimer****

This handbook is intended only as a guidance to aid the public and Inspectors in understanding and implementing MDE regulatory requirements. It is not intended to supplement or replace any statutory or regulatory requirements and does not create any enforceable rights at law or equity. In the event of any inadvertent conflict between this guidance handbook and MDE's statutes and regulations, the statutes and regulations shall control.