



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF UNDERGROUND STORAGE TANKS
TECHNICAL GUIDANCE DOCUMENT – 013

EFFECTIVE DATE: JANUARY 21, 1994
REVISED DATE: AUGUST 1, 1996
REVISED DATE: FEBRUARY 1, 2008

RE: FUND ELIGIBILITY SITE CHECK

PURPOSE

The Tennessee Petroleum Underground Storage Tank Fund (Fund) will not cover either investigative or corrective action costs or third party liability claims associated with a release of petroleum which occurred during the time of fund ineligibility. As one of the regulatory requirements for establishing or restoring fund eligibility, a site check conducted in accordance with this Technical Guidance Document (TGD) must demonstrate that there have been no releases during the time of fund ineligibility. However, if non-fund eligible releases have occurred and the associated costs have been paid using financial resources other than the fund, fund eligibility may be restored if future releases can be distinguished from the old non-fund eligible release(s) as determined by the Division of Underground Storage Tanks (Division).

GENERAL INFORMATION

Site check activities and the evaluation of the subsurface investigation shall be directed by a licensed professional geologist under the Tennessee Geologist Licensure Act of 2007 (T.C.A. § 62-36-101 *et seq.*), or a registered professional engineer under the Tennessee Architects, Engineers, Landscape Architects, and Interior Designers Law (T.C.A. § 62-2-101 *et seq.*) and the rules promulgated thereunder.

If at any point during the site check activities free product is encountered on site, then the free product shall be managed in accordance with the current TGD – 004, Requirements for Free Product Management.

All site check activities shall be conducted in accordance with all relevant sections of the current Environmental Assessment Guidelines (EAG). The results shall be reported in accordance with the current Site Check Report Guidelines and submitted to the appropriate environmental field office.

Prior to conducting the fund eligibility site check, the category of the site shall be determined. The categories are:

- I. There is **no** evidence that there has ever been a confirmed release at the site.
- II. There is evidence of a confirmed release at the site in the past. However, the contamination case was closed under the cleanup levels established by rule [The effective dates for these rules were

April 15, 1990 through October 24, 2005.] or under the site specific standards which were established for the site at the time of case closure.

- III. There is evidence of a confirmed release at the site in the past. However, the contamination case was closed under the site specific standard [Risk Based Cleanup Level (RBCL) and/or Site Specific Cleanup Level (SSCL)] established for the site as determined by using TGD - 017 (revision date September 1, 2006, or any subsequent version).
- IV. There is evidence of a confirmed release at this site and there is ongoing release response, remediation and/or risk management at the site. A Site Specific Standard (RBCL and/or SSCL) has been established for the site as determined by using TGD - 017 (revision date September 1, 2006, or any subsequent version).

Fund Eligibility site check activities conducted in accordance with this TGD for the purpose of establishing or restoring Fund eligibility shall not be eligible for reimbursement from the Tennessee Petroleum Underground Storage Tank Fund.

The Division may be contacted for assistance in determining the applicable category if, after review of the Division file and all other applicable data, a determination cannot be made.

INITIAL SITE CHECK PROCEDURES

[Note: These procedures may not apply to Category IV sites. Please see the discussion of Category IV below under Category-Specific Instructions.]

- A. **Notify the appropriate UST Field Office at least one working day prior to conducting the site work.**
- B. Tankhold Sampling

The number of borings to be installed shall be in accordance with the following table. A tankhold is the basin created upon installation of an underground storage tank (UST) system. It contains one or more tanks along with the backfill material. As used in this document “total tankhold capacity” is defined as the sum of the volumes of all tanks within a tankhold.

Total Tankhold Capacity (gallons)	Minimum Number of Samples	Sample Location
1,120 or less	2	See Figure 1
1,121 – 15,000	4	See Figure 1
15,001 – 30,000	6	See Figure 1
30,001 – 45,000	8	See Figure 1
45,001 – 60,000	10	See Figure 1
Greater than 60,000	Site specific	Site specific

All soil samples taken around the tankhold shall be taken from a depth of one foot below the depth of the bottom of the tankhold into undisturbed soil or at the soil/bedrock interface, whichever occurs first.

- C. Piping and Dispenser Sampling

A boring shall be placed adjacent to the midpoints of each of the following, in the assumed downgradient direction:

- a) Dispenser island(s), and
- b) Piping runs (trenches) greater than fifteen (15) feet in length.

These borings shall be placed no more than three (3) feet from items a) and/or b) above and advanced to a depth of six (6) feet below the ground surface or to the soil/bedrock interface, whichever occurs first.

D. Obtain the appropriate sample containers from the laboratory and follow the appropriate sections in the current EAG instructions for collecting and preserving the samples. The required analyses for soil and groundwater are listed in the attached Chemicals of Concern (COC) table (Reference 1), which includes laboratory methods. The Tennessee Polycyclic Aromatic Hydrocarbon (PAH) list is attached as Reference 2.

E. Groundwater Monitoring Well

Any of the following conditions shall warrant the installation of one groundwater monitoring well at the location where contamination is most likely to be encountered:

- 1. Surface and/or groundwater environmental impact;
- 2. Groundwater and/or free product is encountered in one or more soil borings; or
- 3. Tank(s) and/or piping installed at or below the soil/bedrock interface.

CATEGORY-SPECIFIC INSTRUCTIONS

CATEGORY I SITES

For a site for which there is no evidence that a release has ever been confirmed at the site, sample results obtained in accordance with the Initial Site Check Procedures section of this TGD shall be compared to the initial screening levels in Table 1, attached to this TGD. If a release is discovered, then the regulatory requirements for release reporting and release response shall be followed.

CATEGORY II SITES

For a site for which there is evidence of a confirmed release at the site in the past and the contamination case was closed under the cleanup levels established by rule [The effective dates for these rules were April 15, 1990 through October 24, 2005.] or under the site specific standards which were established for the site at the time of case closure, sample results obtained in accordance with the Initial Site Check Procedures section of this TGD shall be compared to the cleanup levels established by rule **or** the site specific standards which were established for the site at the time of case closure, whichever is applicable. This comparison shall be for the purpose of determining whether or not a new release, which has not been addressed, has occurred during the time of fund ineligibility. If a new release is discovered, then the regulatory requirements for release reporting and release response shall be followed. If it is unclear whether contamination on the site is from a new release or from a release that has reached case closure, then the Division may be contacted for assistance in making such a determination.

It should be noted that **nothing in this TGD should be interpreted as meaning** that levels of petroleum contamination present on a site that are at or below cleanup levels established by rule or site specific standards established prior to the development of TGD - 017 (revision date September 1, 2006, or any subsequent version) **do or do not** pose a current risk to human health, safety or the environment.

CATEGORY III SITES

For a site for which there is evidence of a confirmed release at the site in the past and the contamination case was closed under the site specific standard (RBCLs and/or SSCLs) established for the site as determined by using TGD - 017 (revision date September 1, 2006, or any subsequent version), the sample results shall be compared to the approved site specific standard (RBCLs and/or SSCLs), provided that none of the receptor information used to determine the risk has changed since the site specific standard was approved by the Division.

If there has been a change in the receptor information used to determine the risk for the site **that has potentially increased the risk** associated with the release, including, but not limited to receptors that are present now that were not present at the time the site specific standard was approved or the distance to receptors has decreased, then the risk shall be re-evaluated in accordance with TGD – 017 (Revision Date September 1, 2006, or any subsequent version) or the determination method for Category I can be utilized for the site, i.e., the sample results shall be compared to the initial screening levels in Table 1, attached to this TGD.

If a new release is discovered, then the regulatory requirements for release reporting and release response shall be followed.

CATEGORY IV SITES

For a site for which there is evidence of a confirmed release at the site, there are ongoing release response, remediation and/or risk management activities at the site, and a Site Specific Standard (RBCL and/or SSCL) has been established for the site as determined by using TGD - 017 (revision date September 1, 2006, or any subsequent version), existing site data and/or the results of additional sampling may be used **for some, but not all, sites** to determine if a release has occurred during the time of fund ineligibility.

Subject to review and approval by the Division, **in some instances** results of sampling that has been required by rule 1200-1-15-.06 and/or an approved Corrective Action Plan may be utilized to determine if a release has occurred during the time of Fund ineligibility. The Division may consider such factors as those listed below:

1. The direction of groundwater flow;
2. The locations where contamination is most likely to be found if a release has occurred during the time of Fund ineligibility; and/or
3. The locations and concentrations of contamination associated with the ongoing release response, remediation and/or risk management at the site.

In some instances the Division may require that additional sampling be done in those locations where a new release is most likely to have occurred.

If the concentrations of COCs are such that it cannot be determined at the time of sampling whether or not an additional release has occurred, then restoration or establishment of Fund eligibility for future releases may have to be postponed until such time as that determination can be made.

If a new release is discovered, then the regulatory requirements for release reporting and release response shall be followed.

TABLE 1 – INITIAL SCREENING LEVELS

CHEMICALS OF CONCERN	SOIL *Residential	SOIL *Commercial	GROUNDWATER Drinking Water	GROUNDWATER Non-Drinking Water
ORGANICS	[mg/kg]	[mg/kg]	[mg/l]	[mg/l]
**EPH	500	500	NA	NA
Benzene	0.0729	3.80	0.005	0.072
Toluene	6.78	62.2	1	4.31
Ethylbenzene	143	1310	0.7	10.3
Xylenes (Total)	9.60	88.0	10	3.57
Methyl-tert-butyl-ether (MtBE)	39.6	364	0.02	175
Acenaphthene	NA	NA	0.939	NA
Acenaphthylene	NA	NA	0.939	NA
Anthracene	NA	NA	0.0434	NA
Benzo(a)anthracene	NA	NA	0.00117	NA
Benzo(a)pyrene	NA	NA	0.0002	NA
Benzo(b)fluoranthene	NA	NA	0.00117	NA
Benzo(g,h,i)perylene	NA	NA	0.0007	NA
Benzo(k)fluoranthene	NA	NA	0.0008	NA
Chrysene	NA	NA	0.0016	NA
Dibenzo(a,h)anthracene	NA	NA	0.000117	NA
Ethylene Dibromide (EDB)	NA	NA	0.00005	NA
Ethylene Dichloride (EDC)	NA	NA	0.005	NA
Fluoranthene	NA	NA	0.206	NA
Fluorene	NA	NA	0.626	NA
Indeno(1,2,3-c,d)pyrene	NA	NA	0.00117	NA
Naphthalene	135	403	0.02	9.81
Phenanthrene	NA	NA	0.469	NA
Pyrene	NA	NA	0.135	NA
METALS			[mg/l]	
Cadmium	NA	NA	0.005	NA
Chromium	NA	NA	0.1	NA
Lead	NA	NA	0.015	NA
Silver	NA	NA	0.1	NA
Zinc	NA	NA	5	NA

NA= Not Applicable

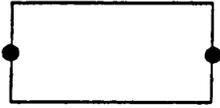
* Based on residential or commercial current use and reasonable future use of the property. If soil contamination also exists on an adjacent property, then a residential/commercial use determination shall also be performed on the adjacent property.

** EPH is used as a soil screening mechanism for the potential installation of a monitoring well only.

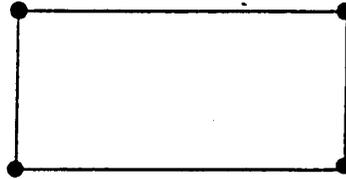
FIGURE 1

SAMPLE LOCATIONS FOR UST FUND ELIGIBILITY SITE CHECK

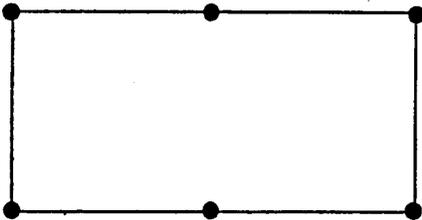
1,120 gal. or LESS



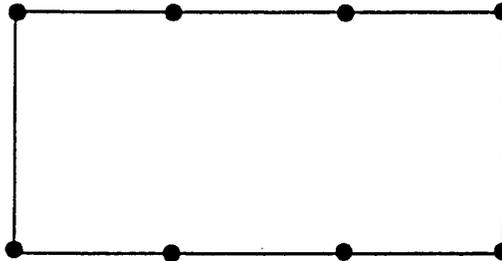
1,121 to 15,000 gal.



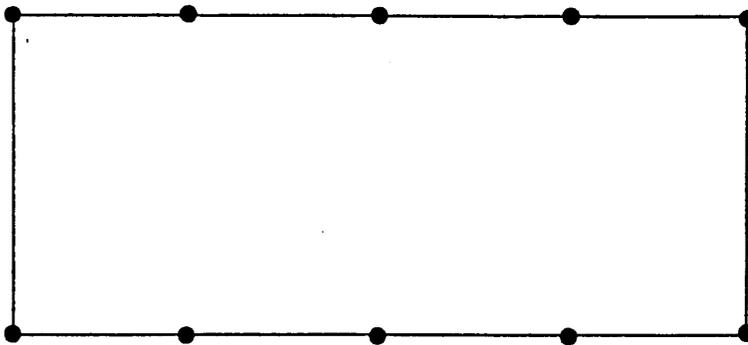
15,001 to 30,000 gal.



30,001 to 45,000 gal.



45,001 to 60,000 gal.



● - Sampling point

REFERENCE 1

Chemicals of Concern Tennessee Division of Underground Storage Tanks

Effective April 1, 2007

Product Released	Chemicals To Sample Drinking Water	Chemicals To Sample Non-Drinking Water	Chemicals To Sample Surface Drinking Water***	Chemicals To Sample Surface Non-Drinking Water***
Gasoline	Benzene Ethylbenzene Toluene Total Xylenes MtBE Naphthalene	Benzene Ethylbenzene Toluene Total Xylenes MtBE Naphthalene	Benzene Ethylbenzene Toluene Total Xylenes	Benzene Ethylbenzene Toluene
Diesel* Jet Fuel Kerosene	Benzene Ethylbenzene Toluene Total Xylenes MtBE PAHs	Benzene Ethylbenzene Toluene Total Xylenes MtBE Naphthalene	Benzene Ethylbenzene Toluene Total Xylenes Benzo(a)pyrene	Benzene Ethylbenzene Toluene Modified PAHs****
Waste Oil* Used Oil	PAHs Cadmium Chromium, Total Lead, Total Silver Zinc	Naphthalene	Benzo(a)pyrene Cadmium Chromium, Total Lead, Total	Modified PAHs****
Aviation Fuel*	Benzene Ethylbenzene Toluene Total Xylenes MtBE EDB***** EDC PAHs Lead, Total	Benzene Ethylbenzene Toluene Total Xylenes MtBE Naphthalene EDB EDC	Benzene Ethylbenzene Toluene Total Xylenes EDB***** EDC Benzo(a)pyrene Lead, Total	Benzene Ethylbenzene Toluene EDC Modified PAHs****
Unknown**	Aviation + Waste Oil	Aviation + Waste Oil	Aviation + Waste Oil	Aviation + Waste Oil

*EPH to be sampled only during closure and analyzed by TN Extractable Petroleum Hydrocarbons (EPH) Method, GRO is no longer required

**Tanks with unknown contents will be required to analyze all COCs

***Chemicals to be sampled only at the surface water receptor

****Modified PAHs - Reference 2 list minus Acenaphthylene, Benzo(g,h,i)perylene, Naphthalene, and Phenanthrene. Include these COCs in all ground water sample analysis if a surface water is a potential receptor. Do NOT add to soil analysis.

*****EDB ground water samples shall be analyzed by EPA method 8011

BTEX, MtBE, Naphthalene, EDB, and EDC shall be analyzed by EPA method 8260B

PAHs in water shall be analyzed by either EPA method 8270C SIM or EPA method 8310 (water samples shall be field filtered using a 4 micron filter); PAHs in soil use 8270C

Metals shall be analyzed by EPA method 200.7 for water and EPA method 6010/3050 for soil

REFERENCE 2

Effective April 1, 2007

TENNESSEE PAH LIST

Acenaphthene
Acenaphthylene
Anthracene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Benzo(k)fluoranthene
Chrysene
Dibenzo(a,h)anthracene
Fluoranthene
Fluorene
Indeno(1,2,3-c,d)pyrene
Naphthalene
Phenanthrene
Pyrene