Alabama Department of Environmental Management

UST CLOSURE SITE ASSESSMENTS

GUIDANCE MANUAL - SECTION III

SEPTEMBER 2007

SECTION III

APPENDICES

III.1 INTRODUCTION

Effective December 22, 1988, federal and state regulations require compliance with the following if a regulated Underground Storage Tank (UST) is to be permanently closed.

1. At least 30 days before beginning permanent closure, owners or operators must notify the ADEM of their intent to permanently close.

2. Owners or operators must empty and clean tank(s) by removing all liquids and accumulated sludges. To permanently close a tank and/or piping, it must be either removed from the ground or filled with an inert solid material. Examples of an inert solid material include sand, concrete and foams classified as inert. If foams are used, additional measures should be taken to properly ballast the tank, such as partial filling with sand or concrete, where there is a possibility of a high water table. The notification referenced in Section 1. above should indicate whether the tank and/or piping will be removed or filled with an inert solid. If a tank and/or piping is to be filled with an inert solid, the type of inert solid should be identified. Additionally, all lines, manways and/or other connections must be capped or closed.

3. Before permanent closure is completed, owners or operators must measure for the presence of a release where contamination is most likely to be present at the UST site. **THE DISCOVERY OF PETROLEUM CONTAMINATION DURING CLOSURE SUCH AS PETROLEUM CONTAMINATED SOILS, DISSOLVED PRODUCT IN THE GROUNDWATER, OR FREE PRODUCT ON THE GROUNDWATER MUST BE REPORTED WITHIN 24 HOURS OF DISCOVERY. THE ENCLOSED UST CLOSURE SITE ASSESSMENT REPORT FORM NO. 474 MUST BE SUBMITTED TO THE ADEM WITHIN 45 DAYS OF INITIATING CLOSURE AT THE FOLLOWING ADDRESS:**

Alabama Department of Environmental Management
Groundwater Branch
Post Office Box 301463
Montgomery, Alabama 36130-1463

FAILURE TO PROVIDE PROPER RELEASE NOTIFICATION OR FAILURE TO SUBMIT THE CLOSURE SITE ASSESSMENT IN THE SPECIFIED TIME PERIOD IS A VIOLATION OF ADEM REGULATIONS AND MAY RESULT IN LOSS OF ALABAMA TANK TRUST FUND COVERAGE.

The UST Release Report form located in Appendix D may be used to report a suspected or confirmed release. The report may be mailed to the address above or faxed to 334-270-5631. A release may be reported by phone to the Montgomery ADEM office at 334-270-5655.

4. Guidelines for performing the closure site assessment are enclosed. The closure site assessment must be performed in accordance with acceptable soil and groundwater investigation practices by an Alabama Licensed Professional Geologist or an Alabama Registered Professional Engineer experienced in soil and groundwater investigations, and in accordance with the applicable State of Alabama licensure and registration Acts. A Geologist or Engineer must be present on site during closure site assessment activities.

5. Closure site assessment requirements may be waived if a properly designed vapor monitoring or groundwater monitoring release detection system was routinely used and properly operating at the time of closure and indicates no release has occurred.

6. Owners or operators must maintain records for at least 3 years following closure that are capable of demonstrating compliance with Sections 1. through 5. above.

7. Owners or operators must submit the following information to fulfill the current closure site assessment requirements:

- *Closure Site Assessment Form* Form 474 (current version)
- A UST Release Fact Sheet (if a release has occurred) Form 479 (current version)
- UST Site Classification System Checklist (if a release has occurred) Form 481 (current version)
- UST Release Report Form (if a release has occurred) Form 480 (current version)

8. Any questions concerning these requirements should be directed to the ADEM Groundwater Branch at 334-270-5655.

III.2 GENERAL INFORMATION

III.2.1 What Regulations Govern a Tank Closure?

Specific requirements for closure notification, required closure practices, and which UST systems must undertake a closure site assessment are outlined in ADEM Admin. Code R. 335-6-15-.33 through .37. ADEM Admin. Code R. 335-6-15-.26(2) through (6) contains the requirements for conducting the closure site assessment when the closure involves a removal of tanks. **When an in-place closure occurs, the requirements of ADEM Admin. Code R. 335-6-15-.26(1) and (3) through (6) are valid.**

III.2.2 Who Conducts A Closure Site Assessment?

The following information defines the ADEM's requirements for the type of personnel categories who are determined to be qualified to conduct various aspects of a closure site assessment. This information clarifies the requirements of ADEM Admin. Code R. 335-6-15-.26(6) for closure site assessments.

Required Personnel for Conducting Closure Site Assessments By Tank and/or Piping Removal:

- *Sampling of soils on tank walls/bottom/soil piles:*

Sampling must be performed by personnel who are experienced in the proper procedures for soil sampling, handling and preservation.

- *Oversight of soil sampling, handling and preservation activities, and description of soil samples:*

Performed by a Geologist experienced in soil and groundwater investigations or performed by an Engineer experienced in soil and groundwater investigations. The Geologist or Engineer must be present onsite during sampling operations.

- *Interpretation of Closure Data:*

Interpretations performed by an Alabama Licensed Professional Geologist experienced in soil and groundwater investigations or an Alabama Registered Professional Engineer experienced in soil and groundwater investigations.

- *Report Preparation:*

Report prepared and signed by an Alabama Licensed Professional Geologist experienced in soil and groundwater investigations or an Alabama Registered Professional Engineer experienced in soil and groundwater investigations.

- *Excavated Soil Sampling:*

Sampling must be performed by personnel who are experienced in the proper procedures for soil sampling, handling and preservation.

Required Personnel for Conducting In-Place Closure Site Assessments:

- *Oversight of drilling activities, oversight of soil sampling, handling and preservation activities, description of soil samples:*

Performed by a Geologist experienced in soil and groundwater investigations or performed by an Engineer experienced in soil and groundwater investigations. The Geologist or Engineer must be present onsite during drilling and sampling operations.

- *Soils and Groundwater Sampling:*

Performed by personnel experienced in the proper sampling, handling and preservation of soil and groundwater samples. Work is either performed by a

Geologist experienced in soil and groundwater investigations or an Engineer experienced in soil and groundwater investigations, or work is performed by experienced personnel while being overseen by Geologist or Engineer who is onsite during actual sampling activities.

- *Interpretation of Closure Data:*

Interpretations must be performed by an Alabama Licensed Professional Geologist experienced in soil and groundwater investigations or an Alabama Registered Professional Engineer experienced in soil and groundwater investigations.

- *Report Preparation:*

Report prepared and signed by an Alabama Licensed Professional Geologist experienced in soil and groundwater investigations or an Alabama Registered Professional Engineer experienced in soil and groundwater investigations.

III.2.3 When to Submit A Closure Site Assessment Report?

Closure site assessments are required to be submitted to the ADEM within 45 days of initiating closure, or within 45 days of release confirmation if a release has occurred. Failure to submit this required report within the regulatory time frame, places an owner/operator in violation of the Chapter 15 regulations and could result in the loss of Alabama Tank Trust Fund eligibility.

III.2.4 Where to Submit A Closure Site Assessment Report?

Closure site assessment reports should be submitted to the attention of the UST Corrective Action Section. The ADEM's address is located in Section III.1.3 of this guidance. The UST Corrective Action Section Staff conducts the initial reviews and if a release is indicated, the report is referred to the UST Compliance Unit Staff for a Tank Trust Fund eligibility determination. The release is then referred to the appropriate UST Corrective Action Section staff member for assignment of an incident number and further action.

III.3 ADEM GUIDELINES FOR PERFORMING A SITE ASSESSMENT FOR A UST CLOSURE

Where applicable, a UST owner or operator can perform either of the following two types of site assessments identified in Sections III.3.1 or III.3.2 below to comply with UST closure requirements. Excavated soil or soil boring cuttings should be handled in accordance with guidance in Section III.4 and the guidance and regulations located in Appendix B of this Section.

All closure site assessments should provide the results of a survey for domestic water supply wells and public water supply wells. The surveys should delineate the domestic wells located within a 500 ft. radius of the site and the public water supply wells located within a 1,000 ft. radius of the site. The survey should be accomplished by performing a field survey in coordination with phone inquiries with the local public water supply system.

A determination should also be made as to whether or not the UST site is located within a delineated wellhead protection area or source water assessment area. The local water supply system can assist in this determination.

Land use should be determined for the site. The current and most likely future land use for the property the UST is located on should be determined. A 500 ft. scan of the neighboring properties to determine the general use of the adjacent property should also be performed. If you are aware of sensitive receptors such as hospitals, schools, day care centers, wetlands, sensitive ecological habitats, etc., please note these on the closure site assessment form.

For sites where a release is documented, the names and addresses of the owners of the property on which the tank system was located and all adjacent property owners should be provided. This information should be listed on the closure assessment form and on a site map. Where this information is not available at the time of the submittal of the closure assessment report, the adjacent property owner information should be submitted within sixty days of the closure of the tank system and/or piping.

III.3.1 TANK and/or PIPING CLOSURE BY REMOVAL

The following procedures may be used in satisfying closure site assessment requirements when the tank excavation pit and/or piping trenches are completely open and available for representative sample collection. Any standing water should be removed and properly managed prior to taking soil samples. Collection of soil samples within the excavation should adhere to OSHA requirements

For closure site assessment requirements when piping is removed through chase piping, see section III.3.2 for sampling requirements.

1. SOIL SAMPLE LOCATIONS:

Soil samples shall be collected from the sides and base of the tank excavation pit and the bottom of the piping trenches. At least one sample shall be collected from each side of the excavation pit and at least one sample from the excavation pit base for every tank that was present in the excavation. In cases where multiple tanks are located in one excavation pit and/or the excavation pit is large, side samples shall be taken every 25 feet. Side samples shall be

collected from the lowest one-third of the tank diameter. One sample per 10 lineal feet shall be collected from the base of piping trenches. Samples from the tank excavation pit side, base, and piping trenches shall be representative of the area being sampled.

Where the groundwater elevation is above the level where soil samples are normally required to be taken, soil samples are not required to be taken below the groundwater. Instead, soil samples should be taken just above the groundwater elevation from excavation pit walls and excavated soil piles as appropriate. Also, groundwater samples must *always* be taken when groundwater is above the level where soil samples are normally taken. **Excavation pit water samples may be taken to determine the appropriate method of properly handling the water only, but do not meet the requirement for groundwater sampling.**

2. SOIL SAMPLING PROCEDURES:

Collection, handling, preservation, and transportation of soil samples shall be performed in accordance with accepted ADEM and/or EPA protocol.

Soil samples shall be collected using clean sampling apparatus for each sample to prevent cross contamination. The sampler shall wear gloves to protect both the sampler and to prevent cross contamination. Gloves should be changed out frequently to assure clean sampling techniques.

Soil samples shall be placed in appropriate sample collection jars, syringes, or vials as appropriate to reduce volatilization from the soils. Samples shall be immediately placed on ice and transported to the laboratory. Samples shall be cooled to 4° C. A properly completed chain of custody shall document the custody of the samples.

3. SOIL ANALYSES

Owners/operators should have the soil samples analyzed such that previous use and the most current use of the tanks and lines are adequately addressed. The owner/operator has the choice of two options of sampling procedures to meet ADEM closure requirements - Total Petroleum Hydrocarbon (TPH) data can be obtained, or the appropriate Chemical of Concern (COC) data can be obtained. The two options are described as follows:

TPH Option:

Analyze soil samples for the presence of Total Petroleum Hydrocarbons in accordance with the methods listed in Section III.3.3. Where applicable, soils should be analyzed for lead in accordance with the methods listed in Section III.3.3.

Chemicals of Concern (COC) Option:

In support of a risk-based assessment, COC data can be obtained during closure in lieu of TPH data. The owner/operator should obtain the number of samples as listed in Section III.3.1.1. The analytical requirements are based on the product present at the site as listed in Section III.3.3.

4. DETERMINATION OF DEPTH TO GROUNDWATER

An evaluation of the depth to groundwater must be performed for every closure by removal to determine if groundwater is within five feet of the base of the tank pit or piping trench as applicable. The depth to groundwater may be obtained by one of the following methods:

a) Install a boring or monitoring well adjacent to tank system. The boring must be installed to a depth of at least five feet below the base of the tank excavation or until bedrock is encountered whichever is less. The boring must stay open a reasonable amount of time to determine if groundwater is present in the boring.

b) Excavate below the original base of the tank pit an additional five feet. Allow the pit to remain open for a reasonable amount of time to determine if groundwater is present in the extended excavation.

c) Measure groundwater elevations in monitoring wells currently existing on-site, which are screened across the groundwater table.

d) **If approved by the ADEM prior to use**, groundwater depth data may be obtained from topographical features that provide sufficient surface indication of the groundwater table. This data must be substantiated by literature values.

5. GROUNDWATER SAMPLING LOCATIONS

If an active domestic water supply well or an active public water supply well is located within 500 ft. or 1,000 ft. respectively of the UST site, or if the UST site is located within a delineated wellhead protection area or source water assessment area, the ADEM may require groundwater sampling to occur

at the UST site. If the groundwater sampling is not performed by the owner/operator during the closure site assessment, the ADEM may require that groundwater sampling occur as part of a Preliminary Investigation.

Where the analytical results of any or all of the required soil samples taken from the tank excavation pit and/or piping trench have a Total Petroleum Hydrocarbon concentration of greater than 10 ppm **and** where the seasonal high groundwater table is less than 5 feet below the bottom of the tank excavation pit and/or piping trench or where standing water in the excavation pit or piping trench is indicative of the groundwater table elevation, groundwater samples must be collected at a minimum of one up-gradient and three down-gradient locations just outside the tank/piping perimeter of the excavation unless directed to do otherwise by the ADEM. Groundwater samples shall be analyzed for the parameters identified in Item III.3.3 according to the type of product released.

6. GROUNDWATER SAMPLING & ANALYTICAL PROCEDURES

Groundwater samples may be obtained through soil borings, temporary monitoring wells, permanent monitoring wells, or direct push soil borings.

Collection, handling, preservation, and transportation of groundwater samples shall be performed in accordance with accepted ADEM and/or EPA protocol. Groundwater samples shall be collected using clean sampling apparatus for each sample to prevent cross contamination. The sampler shall wear gloves to protect both the sampler and to prevent cross contamination. Gloves should be changed out frequently to assure clean sampling techniques.

Groundwater samples shall be placed in appropriate sample collection vials and/or bottles as appropriate to reduce volatilization from the sample. Proper preservatives shall be added to the containers. Samples shall be immediately placed on ice and transported to the laboratory. Samples shall be cooled to 4° C. A properly completed chain of custody shall document the custody of the samples.

Owners or operators should have the groundwater samples analyzed such that previous use and the most current use of the tanks and lines are adequately addressed. Section III.3.3 indicates the chemicals of concern (COCs) which should be sampled for based on the type of product present in the tank system. TPH analyses should not be run on groundwater samples.

Groundwater analyses must be performed for the appropriate chemicals of concern (COCs) as shown in Section III.3.3. Approved analytical methods

must be utilized unless alternative methods are approved by the ADEM on a case-by-case basis.

7. SAMPLING RESULTS

All analytical results are to be submitted to the ADEM and inserted into the tables located in the Closure Site Assessment Form 474. Original chain of custody documentation and original laboratory data sheets are required to be submitted to the ADEM with the Closure Site Assessment Form.

Upon receipt of the required soil and groundwater data, an evaluation of data will be conducted.

TPH Option:

(a) Where the analytical results of all of the required soil samples taken from the tank excavation pit and/or piping trench have a TPH concentration of less than 10 ppm , the ADEM may consider the investigation to be complete and no further action will be required at that time.

(b) Where the analytical results of all the required soil samples taken from the tank excavation pit and/or piping trench have a Total Petroleum Hydrocarbon concentration of less than or equal to 100 ppm **and** where the seasonal high groundwater table is 5 feet or greater below the bottom of the tank excavation pit and/or piping trench, the ADEM may consider the investigation to be complete and no further action will be required at that time.

(c) Where the analytical results of any or all of the required soil samples taken from the tank excavation pit and/or piping trench have a Total Petroleum Hydrocarbon concentration of greater than 10 ppm **and** where the seasonal high groundwater table is less than 5 feet below the bottom of the tank excavation pit and/or piping trench or where standing water in the excavation pit or piping trench is indicative of the groundwater table elevation, groundwater samples must be collected at a minimum of one up-gradient and three down-gradient locations just outside the tank/piping perimeter of the excavation unless directed to do otherwise by the ADEM. Groundwater samples shall be analyzed for the parameters identified in Item III.3.3 according to the type of product released.

(d) Where the analytical results of any or all of the required soil samples taken from the tank excavation pit and/or piping trench have a Total Petroleum Hydrocarbon concentration of greater than 100 ppm **and** where the seasonal high groundwater table is 5 feet or greater below the bottom of the tank excavation pit and/or piping trench, the ADEM will not require groundwater samples during the closure assessment. However, the ADEM may require further assessment at a later date that could include groundwater sampling.

Chemicals of Concern Option:

(a) Where the seasonal high groundwater table is less than 5 feet below the bottom of the tank excavation pit and/or piping trench or where standing water in the excavation pit or piping trench is indicative of the groundwater table elevation, both soil and groundwater samples must be collected. Groundwater samples must be taken at a minimum of one up-gradient and three down-gradient locations just outside the tank perimeter of the excavation unless directed to do otherwise by the ADEM. Groundwater samples shall be analyzed for the parameters identified in Item III.3.3 according to the type of product released.

(b) Where the seasonal high groundwater table is 5 feet or greater below the bottom of the tank excavation pit and/or piping trench, the ADEM will not require groundwater samples during the closure site assessment. However, the ADEM may require further groundwater sampling as part of a Preliminary Investigation.

Subject to the results of the closure site assessment and the proximity of the UST site to water wells or it's location within a wellhead protection area or source water assessment area, the ADEM may require additional investigative and/or corrective actions to be performed.

III.3.2 TANK & PIPING CLOSURE WITHOUT REMOVAL (CLOSED IN-PLACE)

The following procedures may be used in satisfying closure site assessment requirements when the tank excavation pit and/or piping trench is **not** completely open and available for representative sample collection. **This also includes those cases where piping is removed from a chase pipe.**

1. SOIL SAMPLE LOCATIONS

Soil samples shall be collected to determine impacts from both the tank pit area and the piping and dispenser areas.

Tank Pit Area:

Soil samples shall be collected from just outside the perimeter of the tank pit area through use of soil borings. At least one boring shall be installed on each side of the tank pit area, for a minimum of four borings. The borings should be installed as close to the edges of the tank pit area as possible. In cases where the tank pit area is large, borings shall be made at least every 25 feet around the perimeter of the tank pit area.

A minimum of two samples shall be obtained from each boring. The first sample shall be obtained at a depth approximately even with the depth of the lowest one-third of the tank diameter, and the second at a depth approximately five feet below the base of the tank(s). The boring utilized for determining depth to groundwater should have, at a minimum, a third sample collected at the groundwater interface or at the total depth of the boring.

Boring logs should be prepared for each boring installed containing information about the materials encountered.

Piping/Dispenser Area:

One boring per 10 lineal feet of piping shall be installed. Borings should be located in close proximity to the location of the piping and dispensers. Soil samples shall be collected from the soil borings. A minimum of one sample should be collected from each boring. This sample should be located no greater than one foot below the buried depth of the piping. Additional soil samples may be located at depths greater than one foot below the base of the piping. Soil sampling shall be representative of the area and depths which most likely have been affected by a release.

Boring logs should be prepared for each boring installed containing information about the materials encountered.

Shallow Groundwater Situations:

Where the groundwater elevation is above the levels where soil samples are normally required to be taken, soil samples are not required to be taken below the groundwater, unless otherwise specified by the ADEM. Instead, soil samples should be taken just above the groundwater table from soil borings and excavated soil piles as appropriate. Also, groundwater

samples must always be taken when groundwater is above the level where soil samples are normally taken.

2. SOIL SAMPLING PROCEDURES:

Collection, handling, preservation, and transportation of soil samples shall be performed in accordance with accepted ADEM and/or EPA protocol.

Soil samples shall be collected using clean sampling apparatus for each sample to prevent cross contamination. The sampler shall wear gloves to protect both the sampler and to prevent cross contamination. Gloves should be changed out frequently to assure clean sampling techniques.

Soil samples shall be placed in appropriate sample collection jars, syringes, or vials as appropriate to reduce volatilization from the soils. Samples shall be immediately placed on ice and transported to the laboratory. Samples shall be cooled to 4° C. A properly completed chain of custody shall document the custody of the samples.

3. SOIL ANALYSES

Owners/operators should have the soil samples analyzed such that previous use and the most current use of the tanks and lines are adequately addressed. The Owner/operator has the choice of two options of sampling procedures to meet ADEM closure requirements - Either Total Petroleum Hydrocarbon (TPH) data can be obtained, or the appropriate Chemical of Concern (COC) data can be obtained. The two options are described as follows:

TPH Option:

Analyze soil samples for the presence of Total Petroleum Hydrocarbons in accordance with the methods listed in Section III.3.3. Where applicable, soils should be analyzed for lead in accordance with the methods listed in Section III.3.3.

Chemicals of Concern Option:

In support of a risk-based assessment, analyze soil samples for the presence of Chemicals of Concern in accordance with the type of product present at the site and in accordance with the methods listed in Section III.3.3. Where applicable, soils should be analyzed for lead in accordance with the methods listed in Section III.3.3.

4. DETERMINATION OF DEPTH TO GROUNDWATER

All in-place closure assessments for tanks and/or piping inerted in-place, must include a determination of the depth to groundwater. Information on the depth to the groundwater table should be obtained from at least one of the borings located adjacent to the tank pit or piping, as appropriate.

For in-place closures of tanks/piping where groundwater is not encountered while installing the borings utilized to obtain soil samples at a depth of 5 feet below the tank pit, at least one boring should be extended to groundwater or to bedrock, whichever is encountered first. However, for the closure site assessment, this boring can be terminated at a depth of 40 feet, if no groundwater has been encountered. A soil sample shall be obtained and analyzed from the total depth of this boring as noted in Section III.3.2.1.

Should the boring not encounter groundwater at a depth of 40 ft., the boring may be terminated at that point and the closure report should reflect this information. However, a soil sample should be obtained at the total depth of this boring and analyzed for TPH or COCs as appropriate.

For cases where piping is removed through chase piping, the procedure to locate groundwater that may be deeper than 5' below the base of the piping trench is not required as part of the closure assessment. This is based on the fact that there will be an additional closure of that piping trench in the future.

5. GROUNDWATER SAMPLING & ANALYTICAL PROCEDURES

For tank(s) and piping closed in place:

> As part of the in-place closure site assessment, for sites where groundwater is within 5 ft. of the base of the tank pit, a minimum of four groundwater samples should be obtained around the tank system. Additional groundwater samples may be necessary where piping and dispensers are located at a significant distance from the tank pit area.
>
> At sites where groundwater is greater than 5 feet below the base of the tank pit, at least one boring should be extended to groundwater or to top of bedrock and a groundwater sample obtained from that boring. Should the boring not encounter groundwater at a depth of 40 ft., the boring may be terminated at that point and the closure report should reflect this information.

For piping closed-in place (capped, inerted, etc.) without tank closure:

> As part of the in-place closure site assessment for piping closed in place, for sites where groundwater is within 5 ft. of the base of the piping trench, a minimum of two groundwater samples should be obtained. Additional groundwater samples may be necessary where piping lengths are longer than normal.
>
> At sites where groundwater is greater than 5 feet below the base of the tank pit, at least one boring should be extended to groundwater or to top of bedrock and a groundwater sample obtained from that boring. Should the boring not encounter groundwater at a depth of 40 ft., the boring may be terminated at that point and the closure report should reflect this information.

For piping removals where the piping is removed through the chase piping:

> As part of the in-place closure site assessment for piping removed through the chase piping, for sites where groundwater is within 5 ft. of the base of the piping trench, a minimum of two groundwater samples should be obtained. Additional groundwater samples may be necessary where piping lengths are longer than normal.
>
> At sites where groundwater is greater than 5 feet below the base of the tank pit, no groundwater samples need to be collected as part of the closure site assessment. Groundwater samples will be required if appropriate when the piping is removed in the future by excavation or by capping/inerting.

Groundwater samples may be obtained through soil borings, temporary monitoring wells, permanent monitoring wells, or direct push soil borings. These samples should be located around the tank system area to be capable of detecting groundwater contamination that may be migrating in various directions.

Collection, handling, preservation, and transportation of groundwater samples shall be performed in accordance with accepted ADEM and/or EPA protocol. Groundwater samples shall be collected using clean sampling apparatus for each sample to prevent cross contamination. The sampler shall wear gloves to protect both the sampler and to prevent cross contamination. Gloves should be changed out frequently to assure clean sampling techniques.

Groundwater samples shall be placed in appropriate sample collection vials and/or bottles as appropriate to reduce volatilization from the sample. Samples shall be immediately placed on ice and transported to the laboratory. Samples shall be cooled to 4° C. A properly completed chain of custody shall document the custody of the samples.

Groundwater samples should be analyzed for parameters identified in item III.3.3 according to the type of product released.

6. SAMPLING RESULTS

All analytical results are to be submitted to the ADEM and recorded into the appropriate tables located in the Closure Site Assessment Form 474. Original chain of custody documentation and original laboratory data sheets are required to be submitted to the ADEM with the Closure Site Assessment Form.

Upon receipt of the required soil and groundwater data, an evaluation of data will be conducted.

TPH Option:

(a) Where the analytical results of all the required soil samples taken from around the tank and/or piping have a Total Petroleum Hydrocarbon concentration of less than or equal to 100 ppm **and** where the seasonal high groundwater table is 5 feet or greater below the bottom of the tank or piping, the ADEM may consider the investigation to be complete and no further action will be required at that time. This is provided that the groundwater sample obtained contains no COCs above screening levels.

(b) Where the analytical results of any or all of the required soil samples taken from around the tank and/or piping have a Total Petroleum Hydrocarbon concentration of greater than 10 ppm **and** where the seasonal high groundwater table is less than 5 feet below the bottom of the tank and/or piping, groundwater samples must be collected at a minimum of one up-gradient and three down-gradient locations just outside the perimeter of the original tank excavation unless directed to do otherwise by the ADEM. Groundwater samples shall be analyzed for the parameters identified in Section III.3.3 below according to the type of product released.

COC Option:

(a) Where the analytical results of all the required soil samples taken around the UST system closed in-place, are below screening levels for the COCs, the ADEM may consider the investigation to be complete and no further action will be required at that time. This is provided that the groundwater sample obtained contains no COCs above screening levels.

(b) Where the analytical results of any or all of the required soil samples taken from around the UST system exceed COC screening levels and where the seasonal high groundwater table is less that 5 feet below the bottom of the tank excavation pit and/or piping trench or where standing water in the excavation pit or piping trench is indicative of the groundwater table elevation, groundwater samples must be collected at a minimum of one up-gradient and three down-gradient locations just outside the tank perimeter of the excavation unless directed to do otherwise by the ADEM. Groundwater samples shall be analyzed for the parameters identified in Section III.3.3 according to the type of product released.

(c) Where the analytical results of any or all of the required soil samples collected are above the screening levels and where the seasonal high groundwater table is 5 ft. or greater below the bottom of the tank pit and/or piping trench, the ADEM may require additional investigative or corrective actions.

Subject to the results of the closure site assessment and the proximity of the UST site to water wells or it's location within a wellhead protection area or source water assessment area, the ADEM may require additional investigative and/or corrective actions to be performed.

III.3.3 ANALYTICAL METHODS AND PARAMETERS

The following parameters and methods should be utilized when utilizing the TPH Option for soil and groundwater sampling:

TPH OPTION SAMPLING REQUIREMENTS

PRODUCT	SOIL	METHOD	GROUNDWATER	METHOD
Gasoline Analytical Group **	TPH	Standard Method 5520 E & F or EPA 9071 or EPA 418.1 I.R. or SW-846 4030	Benzene, Ethylbenzene, Toluene & Total Xylenes; MTBE	EPA 602 or 624; or SW-846 8021 or 8260
Kerosene Analytical Group	TPH	Standard Method 5520 E & F or EPA 9071 or EPA 418.1 I.R. or SW-846 4030	Benzene, Ethylbenzene, Toluene & Total Xylenes & PAH	EPA 602 or 624; or SW-846 8021 or 8260 EPA 610 or 625; or SW-846 8310 or 8100 or 8270
Waste Oil Analytical Group **	TPH	Standard Method 5520 E & F or EPA 9071 or EPA 418.1 I.R.	Benzene, Ethylbenzene, Toluene & Total Xylenes PAH	EPA 602 or 624; or SW-846 8021 or 8260 EPA 610 or 625; or SW-846 8310 or 8100 or 8270
	Lead	EPA Method 239.2; or SW-846 7420 or 7421	Lead Volatiles	EPA Method 239.2 or SW-846 7420 or 7421 EPA Method 601; or SW-846 8260

****When leaded fuel products have been previously utilized at the site, lead samples must be obtained from soil and/or groundwater.**

Other analytical methods may be approved by the ADEM on a case by case basis.

The following parameters and methods should be utilized when utilizing the COC Option for soil and groundwater sampling:

COC OPTION ANALYTICAL REQUIREMENTS

PRODUCT	SOIL	METHOD	GROUNDWATER	METHOD
Gasoline Analytical Group **	Benzene, Ethylbenzene, Toluene & Total Xylenes; MTBE	SW-846 8021 or 8260	Benzene, Ethylbenzene, Toluene & Total Xylenes; MTBE	EPA 602 or 624; or SW-846 8021or 8260
Kerosene Analytical Group	Benzene, Ethylbenzene, Toluene & Total Xylenes & PAH	SW-846 8021 or 8260 SW-846 8310 or 8100 or 8270	Benzene, Ethylbenzene, Toluene & Total Xylenes & PAH	EPA 602 or 624; or SW-846 8021 or 8260 EPA 610 or 625; or SW-846 8310 or 8100 or 8270
Waste Oil Analytical Group	Benzene, Ethylbenzene, Toluene & Total Xylenes & PAH & Lead	SW-846 8021 or 8260 SW-846 8310 or 8100 or 8270 EPA Method 239.2; or SW-846 7420 or 7421	Benzene, Ethylbenzene, Toluene & Total Xylenes & PAH & Lead & Volatiles	EPA 602 or 624; or SW-846 8021 or 8260 EPA 610 or 625; or SW-846 8310 or 8100 or 8270 EPA Method 239.2 or SW-846 7420 or 7421 EPA Method 601; or SW-846 8260

****When leaded fuel products have been previously utilized at the site, lead samples must be obtained from soil and/or groundwater.**

Other analytical methods may be approved by the ADEM on a case by case basis.

III.4 MANAGEMENT OF CONTAMINATED SOILS

Excavated soils or soil cuttings containing greater than 100 ppm Total Petroleum Hydrocarbons are considered to be petroleum contaminated soils. Requirements for the proper management of petroleum contaminated soils are located in Appendix B of this section. Soils containing less than 100 ppm TPH are not required to be managed under these guidelines. Removal of petroleum contaminated soils (TPH > 100 ppm) off the site of origin is prohibited unless approval is first granted by the ADEM Groundwater Branch UST Program staff and if removed without approval may be determined to constitute an unpermitted landfill which violates ADEM regulations. Soils with TPH values less than 100 ppm are considered not regulated and do not require approval for removal.

The ADEM currently requires that when soil is excavated, that within ninety (90) days of excavation or as otherwise directed by the ADEM, a soil management plan and/or report should be submitted to the ADEM documenting how the tank owner or operator plans to manage the contaminated soils. This requirement is generally issued after the ADEM has reviewed the closure site assessment reports.

The ADEM Land Division pre-approves all petroleum contaminated soil being disposed of at permitted landfills. Pre-approval of the disposal activity must be coordinated with the Land Division Staff.

Petroleum contaminated soils on the site of origin or at another approved site which contains TPH concentrations which exceed 100 ppm TPH must be properly managed. Owners of petroleum contaminated soils which are not properly managed may be subject to further ADEM enforcement actions and the costs for managing the soils will not be covered under the Tank Trust Fund.

Proper on-site management includes the following, at a minimum:

- All soils must be bermed with material that will prevent excessive surface water runoff from the soil piles;
- All soils must be covered during rain events so that excessive runoff will not occur. Soils undergoing treatment by aeration must be properly managed to provide for the addition and removal of a cover material to prevent excessive runoff;
- All soils must be placed on an impermeable base to prevent contaminated material from coming into contact with non-contaminated media;
- A site where soils are exposed to stormwater may be subject to obtaining an NPDES stormwater runoff permit.

APPENDIX A

ADEM UST CLOSURE SITE ASSESSMENT FORM

FORM 474

*** The most current version of this form is on the ADEM website at adem.alabama.gov**

ADEM UST CLOSURE
SITE ASSESSMENT REPORT

(Use a Separate form for a group of tanks in each tank pit)

FACILITY I.D. NO.: _____

DATE OF THIS REPORT: _____

INCIDENT NO. (If applicable). UST __ __ - __ __ - __ __

UST OWNER: _____

FACILITY COUNTY: _____

ADDRESS: _____

FACILITY NAME: _____

CONTACT NAME: _____

LOCATION: _____

CONTACT PHONE #: _____

ADDRESS: _____

NAME OF CONTRACTOR USED TO CLOSE (REMOVE) TANK: _____

NAME OF CONSULTANT CONDUCTING ASSESSMENT: _____

NAME OF LABORATORY USED: _____

PRIOR TO BEGINNING CLOSURE, THE CONTRACTOR SHOULD BECOME FAMILIAR WITH ALL CLOSURE PROCEDURES IN AMERICAN PETROLEUM INSTITUTE (API) BULLETIN 1604, "REMOVAL AND DISPOSAL OF USED UNDERGROUND PETROLEUM STORAGE TANKS" AND API BULLETIN 2015 "CLEANING PETROLEUM STORAGE TANKS". THESE API BULLETINS ARE AVAILABLE FROM THE AMERICAN PETROLEUM INSTITUTE.

NUMBER OF TANKS CLOSED: _____

NUMBER OF TANKS REMAINING AT SITE: _____

CLOSURE DATE: _____

UNIQUE TANK #:					
TANK SIZE:					
TANK CAPACITY:					
TANK AGE:					
DATE TANK LAST USED:					
SUBSTANCE STORED:					
TYPE OF PRODUCT PIPING:					
(Pressurized/Suction)					
FARM TANK:	☐	☐	☐	☐	☐
HEATING OIL TANK:	☐	☐	☐	☐	☐

1. COMPLETE THE FOLLOWING SECTION FOR ALL CLOSURES:

a. Provide the results of a 500 ft. survey for domestic water supply wells in the following table and place their locations on the attached site map:

Name of Owner of Domestic Water Supply Well	Distance from UST Site	Depth of Well	Status: Active or Inactive?

b. Provide the results of a 1,000 ft. survey for public water supply wells in the following table and place their locations on the attached site map:

Name of Owner of Public Water Supply Well	Distance from UST Site	Depth of Well	Status: Active or Inactive?

c. Is the UST site located in a delineated wellhead protection or source water area?

YES ☐ **NO** ☐

d. Are there any public water supply surface water intakes within 500 ft. of the UST site?

YES ☐ **NO** ☐

If yes, locate the intake on the attached site map.

NOTE: If an active domestic water supply well or an active public water supply well is located within 500 ft. or 1,000 ft. respectively of the UST site, or if the answer to 1c. or 1d. is Yes, the Department may require groundwater sampling to occur at the UST site. If the groundwater sampling is not performed by the owner/operator during the closure site assessment, the Department may require that groundwater sampling occur as part of a Preliminary Investigation.

Groundwater sampling remains a requirement of the closure site assessment when shallow groundwater is present or when performing an in-place closure site assessment.

e. Indicate the current on-site land use and the most likely future land use:

Current On-Site Land Use			Most Likely Future On-Site Land Use	
Residential	☐		Residential	☐
Commercial	☐		Commercial	☐
Other	☐		Other	☐
Describe:			Describe:	

f. Describe the current off-site land use within 500 ft of the UST site. State whether the area, in general, is residential, commercial, mixed residential/commercial or other:

North:		
	Northeast:	
	Northwest:	
South:		
	Southeast:	
	Southwest:	
West:		
East:		

g. For sites where there is any evidence of a release, provide the names and addresses of the property on which the tank system is/was located and the adjacent property owners. The property owner names and addresses should be indicated on a site map attached to this form.

Name and Address of Onsite Property Owner:

Name	Address	City	State	Zip

Name and addresses of Adjacent Property Owners:

Name	Address	City	State	Zip

COMPLETE THE FOLLOWING SECTIONS AS APPROPRIATE BASED ON THE TYPE OF CLOSURE CONDUCTED:

2. TANK CLOSURE BY REMOVAL:

a. Attach a topographic map showing the location of the facility and a general site map showing the area surrounding the UST site.

b. Attach plan and sectional views of the excavation and include the following:

1. All appropriate excavation dimensions.
2. All soil sample locations and depths using an appropriate method of identification.
3. Location of areas of visible contamination.
4. Former location of tank(s), including depth, with tank Identification Number.

c. Is the groundwater more than 5 feet below the bottom of the excavation? YES ☐ NO ☐

If no, provide the depth from the ground surface to the groundwater table. Feet: _____

Indicate method used to determine water table depth:

	YES	NO
1. Excavation extended 5 feet below base of pit:	☐	☐
2. Boring or monitoring well:	☐	☐
3. Topographic features (Method must be approved by ADEM prior to use):	☐	☐

d. Was there a notable odor found in the excavation? YES ☐ NO ☐

If yes,

(1) The odor strength was (mild) (strong) (other) describe: _____

(2) The odor indicates what type of product: (gasoline)(diesel) (waste oil) (kerosene) (other) describe: _____

e. Was there water in the excavation? YES ☐ NO ☐

If yes, how was it handled?

	YES	NO
1. One time discharge to sanitary sewer with local approval?	☐	☐
2. Hauled to facility capable of treating constituents of petroleum products in water?	☐	☐
3. Hauled to local POTW with local approval?	☐	☐
4. Treated on-site with NPDES approved discharge?	☐	☐
5. Other? Explain: _____		

f. Was free product found in the excavation? YES ☐ NO ☐

If yes,

1. How was free product handled? Describe: _____
2. What was the measured thickness of free product? _____

g. Were visible holes noted in the tank(s)? YES ☐ NO ☐

If yes,

Indicate which tanks(s) by the Unique Tank Number: _____

Also, describe the location(s) and provide general description as to the size and number of holes for above noted tanks, (Example: 3 square feet of pinholes or 3 inch diameter hole):

_____

_____

_____

_____

h. Describe the soil type and thickness of all soil layers encountered in the excavation:

_____

_____

i. Was the excavation backfilled? YES ☐ NO ☐

If yes, provide the date of backfilling: _____

DO NOT BACKFILL WITH MATERIAL THAT HAS OR POTENTIALLY HAS A TPH OF GREATER THAN 100 PPM!

3. TANK CLOSURE WITHOUT REMOVAL (CLOSED IN-PLACE):

a. Attach a topographic map showing the location of the facility and a general site map showing the area surrounding the UST site.

b. Attach plan and sectional views of the site and include the following:

1. Location of the tank(s) including depth,
2. Location of tank(s) with respect to other tanks, if applicable,
3. Soil boring locations and depths at which soil samples were taken,
4. Boring logs.

c. **Groundwater sample(s) must be collected as part of an in-place closure assessment**. Attach groundwater sampling data, as required based on depth to groundwater.
Refer to Closure Site Assessment Guidance for further details regarding requirements for groundwater sampling.

d. Is the groundwater more than 5 feet below the bottom of the tank? YES ☐ NO ☐

Provide the depth from the ground surface to the groundwater table. Feet: _____

Refer to Closure Site Assessment Guidance (page 11) for further details regarding requirements for determining groundwater elevation.

e. Was there a notable odor found in the bore holes? YES ☐ NO ☐

If yes,
(1) The odor strength was (mild) (strong) (other) describe: _____

(2) The odor indicates what type of product: (gasoline) (diesel) (waste oil) (kerosene) (other) describe: _____

f. Was free product found in the bore holes? YES ☐ NO ☐

If yes,
1. How was free product handled? Describe: _____

2. What was the measured thickness of free product? _____

g. Describe the soil type and thickness of all soil layers encountered in the bore holes and provide boring logs:

_____

h. Specify the inert solid material used to fill the tank(s):

i. Provide the date the tank(s) were filled: _____

j. Were the bore holes properly sealed with bentonite/soil? YES ☐ NO ☐
If yes, provide the date: _____

4. PRODUCT PIPING CLOSURE BY REMOVAL:

a. Attach a topographic map showing the location of the facility and a general site map showing the area surrounding the UST site.

b. If the piping was longer than 10 feet, attach plan and sectional views of the piping trench and include the following:

1. All appropriate excavation dimensions and length of piping,
2. All soil sample locations and depths using an appropriate method of identification.
3. Location of areas of visible contamination.

c. Was the piping purged of product prior to closure? YES ☐ NO ☐
If yes, was the product properly disposed of? ☐ ☐

d. Is the groundwater more than 5 feet below the bottom of the piping trench? YES ☐ NO ☐

If no, provide the depth from the ground surface to the groundwater table. Feet: _____

Indicate method used to determine water table depth: YES NO
1. Excavation extended 5 feet below base of trench: ☐ ☐
2. Boring or monitoring well: ☐ ☐
3. Topographic features (Method must be approved by ADEM prior to use): ☐ ☐

e. Was there a notable odor found in the piping trench? YES ☐ NO ☐

If yes,
(1) The odor strength was (mild) (strong) (other)
describe: _____

(2) The odor indicates what type of product:
(gasoline) (diesel) (waste oil) (kerosene) (other)
describe: _____

f. Was there water in the piping trench? YES ☐ NO ☐

If yes, how was it handled? YES NO
1. One time discharge to sanitary sewer with local approval? ☐ ☐
2. Hauled to facility capable of treating constituents of petroleum products in ☐ ☐

water?

3. Hauled to local POTW with local approval? ☐ ☐
4. Treated on-site with NPDES approved discharge? ☐ ☐
5. Other? Explain:

_____

_____

_____

g. Was free product found in the piping trench? YES ☐ NO ☐

If yes,

1. How was free product handled? Describe: _____

2. What was the measured thickness of free product? _____

h. Were visible holes noted in the piping? YES ☐ NO ☐

If yes, indicate the location(s) and provide a general description as to the size and number of holes:

_____

_____

i. Describe the soil type and thickness of all soil layers encountered in the piping trench:

_____

_____

_____

_____

j. Was the piping trench backfilled? YES ☐ NO ☐

If yes, provide the date of backfilling: _____

DO NOT BACKFILL WITH MATERIAL THAT HAS OR POTENTIALLY HAS A TPH OF GREATER THAN 100 PPM!

5. PRODUCT PIPING CLOSURE WITHOUT REMOVAL (CLOSED IN-PLACE)*:

*Includes piping removed from a chase pipe.

a. Attach a topographic map showing the location of the facility and a general site map showing the area surrounding the UST site.

b. Attach plan and sectional views of the site and include the following:

1. Location of the piping including depth,
2. Location of piping with respect to tank(s), if applicable.
3. Soil boring locations and depth at which soil samples were taken,
4. Boring logs.

c. **Groundwater sample(s) must be collected as part of an in-place closure assessment**. Attach groundwater sampling data, as required based on depth to groundwater.
Refer to Closure Site Assessment Guidance for further details regarding requirements for groundwater sampling.

d. Was the piping purged of product prior to closure? YES ☐ NO ☐
If yes, was product properly disposed of? ☐ ☐

e. Was the piping capped? YES ☐ NO ☐

f. Is the groundwater more than 5 feet below the bottom of the excavation? YES ☐ NO ☐

Provide the depth from the ground surface to the groundwater table. Feet: _____

Refer to Closure Site Assessment Guidance (page 11) for further details regarding requirements for determining groundwater elevation.

g. Was there a notable odor found in the bore holes? YES ☐ NO ☐

If yes,
(1) The odor strength was (mild) (strong) (other)
describe: _____

(2) The odor indicates what type of product:
(gasoline) (diesel) (waste oil) (kerosene) (other)
describe: _____

h. Was free product found in the bore holes? YES ☐ NO ☐

If yes,
1. How was free product handled? Describe: _____
2. What was the measured thickness of free product? _____

i. Describe the soil type and thickness of all soil layers encountered in the bore holes and provide boring logs:

_____
_____
_____
_____

j. Were the bore holes properly sealed with bentonite/soil? YES ☐ NO ☐
If yes, provide the date: _____

6. GROUNDWATER SAMPLING (If required by the closure guidelines):

a. Indicate the following on the plan and section views required by Section 2.b., 3.b, 4.b, or 5.b. above:

1. The location and depth of the borings or monitoring wells. (Monitoring wells in lieu of borings are not required, but may be desirable in certain situations.)

2. The most probable direction of groundwater flow. State basis for determining direction:

_____

_____

_____

b. Was a monitoring well used? YES ☐ NO ☐

If yes, attach a schematic drawing of the well(s) and all boring logs.

c. **SUMMARY OF GROUNDWATER SAMPLING RESULTS:**

Date of Sampling: _____

Boring or MW #:							
	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Benzene							
Ethylbenzene							
Toluene							
Xylenes							
MTBE							
Anthracene							
Benzo(a)anthracene							
Benzo(a)pyrene							
Benzo(b) fluoranthene							
Benzo(k)fluoranthene							
Benzo(g,h,i)perylene							
Chrysene							
Fluoranthene							
Fluorene							
Naphthalene							
Phenanthrene							
Pyrene							
Lead							

Note: Attach additional tables as needed based on number of groundwater samples or variations in sampling dates.

d. Attach the original chain of custody record (**copies are not acceptable**) and the original laboratory data sheet (**copies are not acceptable**) for each sample.

7. SUMMARY OF SOIL ANALYTICAL DATA

a. Provide the analytical data obtained from the site in the following tables:

TANK PIT SAMPLES:

Date of Sampling: _____

Sample #:							
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
TPH OPTION:							
TPH							
Lead							
COC OPTION:							
Benzene							
Ethylbenzene							
Toluene							
Xylenes							
MTBE							
Anthracene							
Benzo(a)anthracene							
Benzo(a)pyrene							
Benzo(b) fluoranthene							
Benzo(k)fluoranthene							
Benzo(g,h,i)perylene							
Chrysene							
Fluoranthene							
Fluorene							
Naphthalene							
Phenanthrene							
Pyrene							
Lead							

Note: Attach additional tables as needed based on number of soil samples or variations in sampling dates.

PIPING & DISPENSER SAMPLES:

Date of Sampling: _____

Sample #:							
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
TPH OPTION:							
TPH							
Lead							
COC OPTION:							
Benzene							
Ethylbenzene							
Toluene							
Xylenes							
MTBE							
Anthracene							
Benzo(a)anthracene							
Benzo(a)pyrene							
Benzo(b) fluoranthene							
Benzo(k)fluoranthene							
Benzo(g,h,i)perylene							
Chrysene							
Fluoranthene							
Fluorene							
Naphthalene							
Phenanthrene							
Pyrene							
Lead							

Note: Attach additional tables as needed based on number of soil samples or variations in sampling dates.

b. Attach the original chain of custody record (**copies are not acceptable**) and the original laboratory data sheet (**copies are not acceptable**) for each sample.

8. EXCAVATED SOIL

ALL EXCAVATED SOIL REQUIRES ANALYSIS PRIOR TO DISPOSAL UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. TANK CLOSURE SAMPLES FROM THE EXCAVATION MAY NOT BE REPRESENTATIVE OF THE LEVEL OF CONTAMINATION IN THE EXCAVATED SOIL.

For safety and other considerations, it is recommended that open pits and piping trenches should be backfilled as soon as possible with **clean backfill. Soils which have TPH levels greater than 100 ppm or soils for which the level of contamination has not been determined shall not be returned to the excavation pit(s) or piping trenches.**

a. If tank was closed by removal, provide an estimate of the volume of soil removed: _____ cubic yds

b. Provide a summary of analytical results for the excavated soil:

Date of Sampling: _____

Sample #	TPH Results mg/kg	Lead Results (If applicable) mg/kg

Note: Attach additional tables as needed based on number of soil sample or variations in sampling dates.

c. Attach the original chain of custody record (**copies are not acceptable**) and the original laboratory data sheet (**copies are not acceptable**) for each sample.

d. Attach the "Total Potential VOC Emissions Calculations" for soil removed.

e. Indicate current method and location of soil management and/or treatment prior to final disposal:

f. Check the method of soil disposal used or to be used:

- ☐ Return to the excavation pit only when TPH is less than or equal to 100 ppm and depth of groundwater is greater than 5 feet from the base of the pit.
- ☐ Spread in a thin layer (6" or less) on site only when TPH is less than or equal to 100 ppm
- ☐ Disposal in a landfill (See attached "Guidelines for the Disposal of Non-Hazardous Petroleum Contaminated Wastes").
- ☐ Incineration.
- ☐ Thermal volatilization.
- ☐ Recycling facility
- ☐ Other _____

g. If soil was disposed of prior to the submittal of this form, indicate the final destination below and attach copies of invoices, receipts, and "certificate of burn" (if soil was incinerated):

9. TANK CLEANING

	YES	NO
a. The tank(s) were cleaned in accordance with American Petroleum Institute (API) Bulletin 2015 "Cleaning Petroleum Storage Tanks"?	☐	☐

If no, describe how tank(s) were cleaned:

b. Provide an estimate of the volume of sludge removed from the tank: _____ Gallons

c. Indicate the final destination of the sludge and attach invoices or receipts:

10. ATTACHMENTS

Attach the following to the closure form in the following order as applicable to the type of closure site assessment performed. Check each box to indicate that a particular map or information is attached to the closure site assessment form. The section of the closure site assessment form that indicates the required attachment is shown.

☐	Topographic Map showing location of site (Section 2.a., 3.a., 4.a., & 5.a.)	
☐	Area map showing general location of the site. Include land use on-site and within 500' of site. Indicate property owner names and addresses if a release has occurred. (Section 1)	
	☐	Include locations of domestic and public water supply wells, and surface water intakes (Section 1)
☐	Plan and sectional views of the site including the following: (Section 2.b., 3.b., 4.b., & 5.b.)	
	☐	Location of the closed tanks and piping including depth. Include any remaining tanks or piping at site. Include tank identification numbers.
	☐	Excavation dimensions of the tank system
	☐	Locations of soil samples taken for piping and tank which includes the analytical results.
	☐	Location of areas of visible contamination
	☐	Location of any stockpiled excavated soil
	☐	Location of soil borings for an in-place closure
☐	The location and depth of the one up-gradient and 3 down-gradient borings or monitoring wells (Section 6.a.)	
☐	Map illustrating the most probable direction of groundwater flow (Section 6.a.)	
☐	Schematic diagrams of the monitoring wells installed (Section 6.b.)	
☐	Boring logs of soil borings (Section 3.b., 5.b. &6.b.)	
☐	Site Classification Checklist	
☐	**Invoices and/or receipts for sludge disposal (Section 9.c.)**	
☐	Invoices, manifests and certificates of burn or disposal for soil disposal (Section 8.f.)	

☐	Attach the **original** chain of custody record (copies are not acceptable) for each sample which includes at least the following: (Sections 6.d., 7.b., & 8.c.)	
	☐	Sample identification number,
	☐	Date and time sample was taken,
	☐	Name and title of person collecting sample (see certification requirement on page 15 of this form),
	☐	Type of sample (soil or water),
	☐	Type of sample container,
	☐	Method of preservation,
	☐	Date and time sample was relinquished,
	☐	Person relinquishing sample,
	☐	Date and time sample was received by lab,
	☐	Person receiving sample at lab.

☐	Attach the **original** laboratory data sheet (**copies are not acceptable**) which includes at least the following: (Sections 6.d., 7.b., & 8.c.)	
	☐	A sample identification number which can be cross referenced with the soil sample locations indicated on the plan and sectional views required by Section 2.b., 3.b., 4.b., or 5.b. above
	☐	The sample analytical results with appropriate units,
	☐	The method used to analyze each sample,
	☐	The date and time the sample was analyzed,
	☐	The person analyzing the sample.

11. SIGNATURES

This form should be completed, signed, and returned, along with any other pertinent information, to the following address:

The Alabama Department of Environmental Management
Groundwater Branch
Post Office Box 301463
Montgomery, AL 36130-1463
(334) 270-5655

INCOMPLETE FORMS WILL BE RETURNED FOR CORRECTION.

Name of person taking soil and/or groundwater samples: _____

Company: _____
Telephone Number: _____

I certify under penalty of law that I have obtained representative soil and/or groundwater samples using accepted sampling procedures.

Signature: _____ Date: _____
Print Name: _____

Either an Alabama Licensed Professional Geologist or an Alabama Registered Professional Engineer must sign this form:

I certify under penalty of law that I have performed this closure site assessment in accordance with accepted soil and groundwater investigation practices; I am either an Alabama Licensed Professional Geologist or an Alabama Registered Professional Engineer; I am experienced in soil and groundwater investigations; and the information I have submitted, to the best of my knowledge and belief, is true, accurate, and complete.

Signature of Alabama Licensed Professional Geologist:		Date:
Print Name:		
Alabama P.G. License Number:		

Signature of Alabama Registered Professional Engineer:		Date:
Print Name:		
Alabama P.E. Registration Number:		

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents and that based on those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Signature of Tank Owner: _____ Date: _____

Print Name: _____

FOR ADEM USE ONLY:

Reviewed By: _____ Date: _____

COMMENTS:

FOR ADEM OFFICE USE ONLY	
TO: _____ Air Division	FROM: _____ UST Compliance Section

MEMORANDUM

January 28, 1991

ADEM UST CLOSURE
TOTAL POTENTIAL VOC EMISSIONS CALCULATIONS

FACILITY I.D. NO.: _____

DATE OF THIS REPORT: _____

INCIDENT NO. (If applicable). UST __ __ - __ __ - __ __

UST OWNER:

FACILITY COUNTY: _____

ADDRESS: _____

FACILITY NAME: _____

CONTACT NAME: _____

LOCATION: _____

CONTACT PHONE #: _____

ADDRESS: _____

Name of Consultant who performed calculations: _____

Consultant's Phone Number: _____

	a		b		c	
		ppm x		cyds x .002 =		lbs. VOC emissions
Sample 1		ppm x		cyds x .002 =		lbs. VOC emissions
Sample 2		ppm x		cyds x .002 =		lbs. VOC emissions
Sample 3		ppm x		cyds x .002 =		lbs. VOC emissions
Sample 4		ppm x		cyds x .002 =		lbs. VOC emissions
Sample 5		ppm x		cyds x .002 =		lbs. VOC emissions
Sample 6		ppm x		cyds x .002 =		lbs. VOC emissions
Sample 7		ppm x		cyds x .002 =		lbs. VOC emissions
Sample 8		ppm x		cyds x .002 =		lbs. VOC emissions
Sample 9		ppm x		cyds x .002 =		lbs. VOC emissions
Sample 10		ppm x		cyds x .002 =		lbs. VOC emissions
Sample 11		ppm x		cyds x .002 =		lbs. VOC emissions
Sample 12		ppm x		cyds x .002 =		lbs. VOC emissions
Sample 13		ppm x		cyds x .002 =		lbs. VOC emissions
Sample 14		ppm x		cyds x .002 =		lbs. VOC emissions
Sample 15		ppm x		cyds x .002 =		lbs. VOC emissions

TOTAL POTENTIAL EMISSIONS = [ ] lbs. VOC emissions

*** NOTE - If more samples are taken than indicated on this form, please attach additional pages as necessary.**

This form must be completed and submitted with the ADEM UST Closure Site Assessment Report Form.

ADEM FORM #492 8/02

APPENDIX B

GUIDELINES FOR MANAGEMENT OF PETROLEUM CONTAMINATED SOILS GENERATED FROM UST SITES

GUIDELINES FOR THE MANAGEMENT OF PETROLEUM CONTAMINATED SOIL GENERATED FROM UNDERGROUND STORAGE TANK SITES

When petroleum contaminated excavated soil is present on an underground storage tank site, it should be properly managed in accordance with local, state and federal requirements. These guidelines present management guidelines for petroleum contaminated soils. For the purpose of excavated soil management and disposal, petroleum contaminated soils are those soils that have a Total Petroleum Hydrocarbon (TPH) value of greater than 100 ppm. Excavated soils that are suspected to be contaminated with petroleum hydrocarbons should be handled as if they were contaminated, until laboratory analysis confirms that the soil is not regulated (<100 ppm TPH).

While most soils are excavated as part of an underground storage tank system closure, soils removed during upgrades, repairs or other remedial activities, should also be managed in a manner that does not pose a threat to human health and the environment.

The following information provides a brief description of key management procedures to be utilized in properly managing, treating, and disposing of petroleum contaminated soils generated at an underground storage tank site.

APPLICABILITY TO SOILS:

Excavated petroleum contaminated soils for disposal and management purposes, includes soil that has a Total Petroleum Hydrocarbon (TPH) content greater than 100 ppm. Excavated soils with TPH concentrations of 100 ppm or below are not subject to these management guidelines and as such can be spread on site or removed off-site without further oversight by the ADEM.

Soils with lead concentrations less than 100 ppm total lead are not subject to further remediation or management. If total lead levels exceed 100 ppm, TCLP analyses for lead must be performed. If the TCLP result is less than 5 ppm, then the soil is not subject to further management requirements for the lead content. If the TCLP exceeds 5 ppm, the soil may be considered hazardous and should be managed in accordance with the ADEM Land Division requirements. Please contact the ADEM Land Division to determine what additional management requirements will be necessary for these types of soils.

SUBMITTAL OF PLANS:

Depending upon the choice of soil management, treatment or disposal option, a plan may need to be submitted prior to implementing a particular soil management, treatment or disposal option. The plan should be submitted to the UST Corrective Action Section staff member who issued soil management correspondence to the owner/operator.

SUBMITTAL OF REPORTS:

A brief report documenting the management and/or disposal of the petroleum contaminated soil should be submitted to the Department within 90 days of soil excavation or at an interval otherwise directed by the Department, and at 90 day intervals (or as otherwise directed by the Department) until final disposal of the soil occurs.

ON-SITE SOIL MANAGEMENT, TREATMENT AND/OR DISPOSAL:

Storage of soils:

On-site storage of soil should be performed in a manner that does not pose a threat to surface water quality or groundwater quality. Therefore, stored soils should be placed on an impervious material and be covered with an impermeable material such as plastic at all times.

Aeration of Soils:

On-site aeration of soil should be performed in a manner that does not pose a threat to surface water quality or groundwater quality. Therefore, soils being treated by aeration should be placed on an impervious material. Coverage of the soil should occur during rain events to prevent runoff of pollutants. Sites where soils are exposed to stormwater may be subject to obtaining an NPDES stormwater runoff permit.

In addition, on-site soil aeration should meet the requirements of the ADEM Air Division September 26, 2001 memorandum regarding "Remediation of Soils, Groundwater, Surface-Water and other Contaminated Media", a copy of which is included for your reference.

On-Site Remediation (other than aeration) of Soils:

When remediation enhancements, such as nutrients or microbes, are proposed for use, a plan should be submitted to the ADEM prior to any application of such remediation enhancers.

LANDFILL DISPOSAL:

Requirements for the disposal of petroleum contaminated soils in a Solid Waste Landfill are included in ADEM Admin. Code R.335-13-4-.26 Requirements for Management and Disposal of Special Waste. A copy of this regulation is attached. Copies of the complete set of ADEM Solid Waste regulations can be obtained from the ADEM Office of General Counsel at (334)270-5606 or on the ADEM website at adem.alabama.gov.

The ADEM Land Division requires that all petroleum contaminated soils receive prior approval before being placed in a landfill. Please contact the ADEM Land Division for further information on landfill disposal approvals at (334)271-7700.

PERMITTED INCINERATORS OR PERMITTED SOIL TREATMENT FACILITIES:

Removal of soil to an ADEM permitted incinerator or soil treatment facility can be undertaken without additional approval of the Department. If the origin of the soil is an Alabama Tank Trust Fund eligible site, approval of the cost proposal should occur before the removal of the soil unless otherwise directed by the Department.

DISPOSAL OF SOIL AT OUT-OF-STATE FACILITIES:

If soil is to be disposed of or treated at an out-of-state facility, documentation from the state in which the facility is located should be submitted to the Department indicating that the facility is permitted for petroleum contaminated soil handling, treatment, and/or disposal.

If the origin of the soil is an Alabama Tank Trust Fund eligible site, approval of the cost proposal should occur before the removal of the soil unless otherwise directed by the Department.

SOIL RELOCATION:

If petroleum contaminated soil is to be remediated at a site other than the site of origin or at a permitted disposal site, a soil management plan should be submitted to the Department for review before the soil can be removed from the site of origin. This plan should be submitted to the project manager overseeing the site remediation. The plan should contain the following information, at a minimum:

1. The volume of petroleum contaminated soil to be moved;
2. Analytical data indicating the TPH concentration in the soil;
3. A topographic map of the area showing the location of surface water bodies, and adjacent properties and their land use within 500 ft. of the proposed site;
4. A site location map of the proposed remediation area;
5. A water well inventory of public water supply wells within 1,000 ft. and private water supply wells within 500 ft. of the proposed site;
6. The proposed storage, treatment, or disposal methods to be used at the proposed site;
7. The name of the property owner who owns the proposed site.

Upon receipt of the off-site management plan, the Department will review the site for soil management suitability and supply a written response to the owner/operator. No petroleum contaminated soil should be removed from the site of origin to a relocation site without Department approval.

PETROLEUM CONTAMINATED SOIL SAMPLING & ANALYTICAL REQUIREMENTS:

Sampling requirements for UST excavated soils are as follows:

Number of samples: 5 grab samples composited to 1 sample for each 20 cubic yds of soil

PETROLEUM TYPE	COC	ANALYTICAL METHOD
Gasoline Analytical Group & Kerosene Analytical Group	TPH	Standard Method 5520 E & F or EPA 9071 or EPA 418.1 I.R. or SW-846 4030
Waste Oil Analytical Group	TPH	Standard Method 5520 E & F or EPA 9071 or EPA 418.1 I.R.
	Lead	EPA Method 239.2; or SW-846 7420 or 7421

ALABAMA TANK TRUST FUND COVERAGE:

The treatment, storage and disposal of petroleum contaminated soil is an eligible expense for sites that are deemed Trust Fund eligible, provided certain requirements are met.

Soil management, transportation and disposal costs associated with a tank closure can be reimbursed provided the soil is deemed contaminated (TPH>100 ppm) and the quantity of soil removed from the excavation was a reasonable amount. These sites must also receive a "Notification of Requirement to Conduct Investigative and Corrective Actions (NOR)" and receive a Notification of Trust Fund Eligibility in order to have these costs considered for reimbursement.

Soil management, transportation and disposal costs associated with a tank upgrade can be reimbursed provided the soil is deemed contaminated (TPH>100 ppm) and the quantity of soil removed from the excavation was a reasonable amount. These sites must also have received a "Notification of Requirement to Conduct Investigative and Corrective Actions (NOR)" and receive a Notification of Trust Fund Eligibility in order to have these costs considered for reimbursement. Some soil removal during upgrades may reveal the discovery of a new release that should be properly reported to ADEM.

At a typical closure, the Trust Fund does not reimburse for the cost of the initial sampling of the excavated soil or for the cost of removal of the soil. Only when the over-excavation of soil is approved by ADEM and the site receives eligibility and an NOR, will any of the over-excavation removal costs be considered for reimbursement.

The ADEM may deny coverage for soil management, transportation, and/or disposal costs if the site activities and/or their associated costs were not approved by ADEM or deemed not necessary for site rehabilitation.

ADEM Solid Waste Branch Requirements for Management and Disposal of Special Waste, Specifically Petroleum Contaminated Waste

The following is information regarding disposal of petroleum contaminated waste located in the ADEM Admin. Code R. 335-13-4-.26 regulation:

Definition of Petroleum Contaminated Waste as it relates to excavated soil disposal:

> *Petroleum Contaminated Waste (PCW) – any material, including but not limited to soil, debris, absorbent pads/booms, oil dry, etc., that has been exposed to petroleum products in such a manner that the petroleum product can be detected by a total petroleum hydrocarbon (TPH) analysis using Standard Method 503 D & E, EPA Methods 9071 or 418.1 Infra Red, and that analysis exceeds 100 ppm TPH.*

335-13-4-.26(4) Disposal requirements for petroleum contaminated waste.

Any person who disposes of petroleum contaminated waste shall comply with the following practices:

(a) Petroleum contaminated waste must be disposed of in a MSWLF and/or a synthetically lined facility having a solid waste disposal permit issued by the Department and having groundwater monitoring wells.

(b) Prior to disposing of a petroleum contaminated waste in accordance with subparagraph (a) of this paragraph, the generator of the waste must provide the Department with a written certification that the waste is non-hazardous.

1. The generator of a petroleum contaminated waste may use his knowledge of the processes producing the waste to certify that the waste is non-hazardous; however the Department, on a case-by-case basis, may require additional information and/or laboratory analyses to support the generator's certification.

2. The written certification that the waste is non-hazardous must include laboratory analysis for metals if the source of the petroleum contamination is leaded gasoline, used automotive crank case oil, or if the generator has reason to believe that the source contains TCLP metals.

(c) Small quantities of petroleum contaminated waste may be disposed in MSWLFs, C/DLFs, or ILFs, and shall not require approval and/or testing, provided that the waste:

1. Contains less than twenty-five (25) gallons of petroleum; and
2. Total material (i.e., soil, rags, sorbent, etc.) is less than five (5) cubic yards per occurrence.

APPENDIX C

AIR DIVISION MEMORANDUM

ADEM

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

POST OFFICE BOX 301463 36130-1463 • 1400 COLISEUM BLVD. 36110-2059
MONTGOMERY, ALABAMA
WWW.ADEM.STATE.AL.US
(334) 271-7700

MES W. WARR
ECTOR

DON SIEGELMAN
GOVERNOR

Facsimiles: (334)
Administration: 271-7950
General Counsel: 394-4332
Air: 279-3044
Land: 279-3050
Water: 279-3051
Groundwater: 270-5631
Field Operations: 272-8131
Laboratory: 277-6718
Mining: 394-4326
Education/Outreach: 394-4383

September 26, 2001

MEMORANDUM

TO: Interested Parties

FROM: Ronald W. Gore, Chief
Air Division

RE: Remediation of Soils, Groundwater, Surface-Water and other Contaminated Media -- NOTE: This Memoranda supercedes all previous Air Division Memoranda on this subject.

The purpose of this memorandum is to outline the procedures and requirements of the ADEM Air Division for minimizing and analyzing emissions from the remediation of soils, groundwater, surface-water and other media contaminated with "petroleum" and/or "non-petroleum" products. These remediation processes could include evaporation, thermal incineration, air stripping, air sparging and other activities. This guidance applies to remediation processes in all areas of the State except those located within Jefferson County and those located within the city limits of the City of Huntsville. The local air pollution control agencies should be contacted to determine requirements in those areas.

The utilization of these remediation processes provides the opportunity for contaminants to merely be transferred from one contaminated media (soil, groundwater, and surface-water) to the atmosphere. Therefore, it is necessary for the Air Division to assess any potential emissions from these remediation processes and determine the need for any specific air pollution control equipment. These assessments will be based upon analytical data that is specific to the type(s) of contaminant, the contaminant concentrations, the type(s) of contaminated media and the type(s) of remediation process that is proposed.

Remediation processes that have little or no potential for vapor emissions, such as disposal in a hazardous/solid waste landfill or bio-remediation, are not within the purview of the Air Division. The utilization of these remediation processes would be subject to approval by the ADEM Land Division or UST Section.

Due to the fact that there is such a wide variety of "petroleum" and "non-petroleum" contaminants, it is not feasible to write one guidance document that outlines all of the

requirements for minimizing vapor emissions during the remediation process. However, it is still necessary for the Air Division to assess any potential emissions from these remediation processes and determine the need for air pollution control equipment. Therefore, all remediation processes which have the potential for contaminants to be transferred from one contaminated media to the atmosphere must be evaluated (and approved) by the Air Division prior to implementation.

For the remediation of all "**petroleum**" products the Air Division utilizes the following guidelines to determine whether an air pollution control device (APCD) will be required:

- *Remediation of contaminated water* – Emissions in excess of **0.1 lbs./hr of volatile organic compounds** (VOCs) could represent a significant impact on air quality and could require an air pollution control device. In the event air emissions are greater than 0.1 lbs./hr, air dispersion modeling should be performed to assure there is not a significant impact on air quality or an APCD should be utilized.

- *Remediation of contaminated soils* – **Potential emissions greater than 2,000 pounds of VOCs over the duration of the event** will be expected to utilize an air pollution control device. Potential emissions may be calculated by using the information on the attached page.

Since the term "non-petroleum" encompasses such a wide variety of products, a general emission threshold for all "non-petroleum" products can not be established. Therefore, for the remediation of all "**non-petroleum**" products, the Air Division will conduct a case-by-case evaluation for each event based on the information provided.

In order for the Air Division to evaluate (and possibly approve) "petroleum" and "non-petroleum" remediation processes, certain site-specific information must be submitted. This site-specific information should include, but not be limited to, the information outlined below:

1) Site map (drawn to scale)
2) Number of samples collected
3) Location where samples were collected
4) Analytical results of all samples collected
5) List of known contaminants
6) Type of contaminated media (soil, groundwater etc...)
7) Type of remediation system proposed

8) Stack parameters (if applicable) to include height above ground (m), inside diameter (m), velocity (m/sec), gas temperature at exit (K), groundwater recovery rate (gal/min) and specific concentrations of compounds released.
9) Potential emissions of contaminants and actual emissions of contaminants (include all calculations)
10) Project manager name and telephone number
11) Proposed date of implementation
12) Type and efficiency of air pollution control device proposed

The submittal of the requested information, in a timely manner, will allow Air Division personnel to evaluate the remediation process and determine the need for air pollution control equipment. If you have any questions concerning these guidelines, feel free to call the ADEM Air Division at (334) 271-7861.

RWG/ASH/dwb

TOTAL POTENTIAL VOC EMISSIONS CALCULATIONS

	a	ppm x	b	cyds x	0.002	=	c	lbs VOC emissions
Sample 1		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 2		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 3		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 4		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 5		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 6		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 7		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 8		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 9		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 10		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 11		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 12		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 13		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 14		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 15		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 16		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 17		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 18		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 19		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 20		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 21		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 22		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 23		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 24		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 25		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 26		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 27		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 28		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 29		ppm x		cyds x	0.002	=		lbs VOC emissions
Sample 30		ppm x		cyds x	0.002	=		lbs VOC emissions

TOTAL POTENTIAL EMISSIONS _____ lbs VOC emissions

* NOTE – If more samples are taken than indicated on this form, please attach additional pages as necessary.

This form must be completed & submitted with the ADEM UST Closure Assessment

APPENDIX D

UST RELEASE REPORT FORM

For ADEM Use Only

UST INCIDENT NO.: _ _ _ _ _ _ - _ _ - _ _

Report Received by: _____

UST RELEASE REPORT

RELEASE REPORT INFORMATION

RELEASE REPORTED BY: _____

PHONE NO.: _____

DATE RELEASE REPORTED: _____

SITE INFORMATION

SITE NAME: _____

SITE STREET ADDRESS: _____

CITY: _____ COUNTY: _____ ZIP: _____

FACILITY I.D. No.: _ _ _ _ _ _ - _ _ _ - _ _ _ _ _ _

FACILITY OWNER INFORMATION

OWNER/OPERATOR NAME: _____

COMPANY NAME: _____

OWNER/OPERATOR STREET ADDRESS: _____

CITY: _____ COUNTY: _____ ZIP: _____

OWNER/OPERATOR PHONE NO.: _____

DESCRIPTION OF RELEASE

DATE OF DISCOVERY OF RELEASE: _____

SUBSTANCE RELEASED: ☐ Gasoline ☐ Gasoline with ethanol blend ☐ Diesel
☐ Waste Oil ☐ Kerosene ☐ Biodiesel ☐ Other (Specify) _____

ESTIMATED AMOUNT OF SUBSTANCE RELEASED: _____

HOW WAS RELEASE DISCOVERED?
☐ During closure ☐ Tank Tightness Test
☐ Line Tightness Test ☐ Line Leak Detector ☐ Vapor Monitoring
☐ Vapors Detected ☐ Environmental Audit ☐ Citizen Complaint
☐ Groundwater Monitoring ☐ Inventory Loss/Gain ☐ General Maintenance Visit
☐ Cathodic Protection Upgrade ☐ Inside Secondary Containment Sump
☐ State Inspector

☐ Statistical Reconciliation ☐ Other (Specify)
☐ Unexplained Loss _____
☐ Inconclusive _____

CAUSE OF RELEASE:
☐ Overfill ☐ Spill ☐ Tank Leak ☐ Line Leak
☐ Dispenser leak ☐ Leak Detector Leak ☐ Physical or Mechanical Damage
☐ Corrosion ☐ Install Problem
☐ Other: _____ ☐ Unknown at this time

SOURCE OF RELEASE:
☐ Tank ☐ Piping ☐ Dispenser ☐ Submersible Turbine Pump
☐ Delivery Problem ☐ Other (specify) _____

MANUFACTURER OF EQUIPMENT:
Tank Manufacturer: _____
Piping Manufacturer: _____
Leak Detection Manufacturer: _____

TYPE OF PIPING: ☐ Pressurized ☐ Suction
PIPING MATERIAL: ☐ Metal ☐ Fiberglass ☐ Thermoplastic (Flexible)

BRIEF DESCRIPTION OF RELEASE

Briefly describe the release (including but not limited to: where release was discovered, amount of free product present, location of free product). Provide/attach a sketch of the location of the release (specific or general location).

MEDIA IMPACTED BY RELEASE

☐ Surficial Soil ☐ Subsurface Soil ☐ Groundwater ☐ Drainage Ditch ☐ Creek, stream, river, lake
☐ Sanitary sewer ☐ Storm sewer ☐ Public water supply well ☐ Domestic water supply well
☐ Non-potable water supply well ☐ Vapors inside residences ☐ Vapors inside onsite commercial building
☐ Vapors inside offsite commercial building

NAMES AND ADDRESSES OF PROPERTY OWNERS

Provide the names and addresses of the UST site property owner, and the adjacent property owners. If the names and addresses aren't available at the time of the reporting of the release, this information should be submitted within thirty (30) days. Provide a sketch identifying the owners of the adjacent offsite properties.

Name and Address of Onsite Property Owner:

Name	Address	City	State	Zip

Name and addresses of Adjacent Property Owners:

Name	Address	City	State	Zip

ATTACH OTHER COMMENTS AS NECESSARY

REPORTING OF RELEASES REQUIRED WITHIN 24 HOURS OF DISCOVERY

REPORT BY PHONE (334) 270-5655 REPORT BY FAX (334) 270-5631

REPORT BY OVERNIGHT MAIL : ADEM GROUNDWATER BRANCH
1400 COLISEUM BOULEVARD
MONTGOMERY, ALABAMA 36110

APPDENDIX E

UST RELEASE FACT SHEET

UST RELEASE FACT SHEET

GENERAL INFORMATION:

SITE NAME: _____

ADDRESS: _____

FACILITY I.D. NO.: _ _ _ _ _ _ - _ _ _ _ - _ _ _ _ _ _ _

UST INCIDENT NO.: _ _ _ _ _ _ - _ _ - _ _

RESULTS OF EXPOSURE ASSESSMENT:

How many private drinking water wells are located within 1,000 ft. of site?	
How many public water supply wells are located within 1 mile of the site?	
Have any drinking water supply wells been impacted by contamination from this release?	
Is there an imminent threat of contamination to any drinking water wells?	{ } Yes { } No
Have vapors or contaminated groundwater posed a threat to the public?	{ } Yes { } No
Are any underground utilities impacted or imminently threatened by the release?	{ } Yes { } No
Have surface waters been impacted by the release?	{ } Yes { } No
Is there an imminent threat of contamination to surface waters?	{ } Yes { } No
What is the type of surrounding population?	

CONTAMINATION DESCRIPTION:

Type of contamination at site: { } Gasoline, { } Diesel, { } Waste Oil
{ } Kerosene, { } Other _____

Free product present in wells? { } Yes { } No Maximum thickness measured:

Maximum TPH concentrations measured in soil:

Maximum BTEX or PAH concentrations measured in groundwater:

APPENDIX F

UST SITE CLASSIFICATION FORM

ADEM GROUNDWATER BRANCH

UST SITE CLASSIFICATION SYSTEM

CHECKLIST

Please read all of the following statements and mark either yes or no if the statement applies to your site. If you have conducted a Preliminary or Secondary Investigation, all questions should be answered. Closure site assessment reports may not provide you with all the necessary information, but answer the statements with the knowledge obtained during the closure site assessment.

SITE NAME: _____
SITE ADDRESS: _____

FACILITY I.D. NO.: _____
UST INCIDENT NO.: _____

OWNER NAME: _____
OWNER ADDRESS: _____

NAME & ADDRESS OF PERSON COMPLETING THIS FORM: _____

CLASSIFICATION	*DESCRIPTION*	*YES*	*NO*
CLASS A	IMMEDIATE THREAT TO HUMAN HEALTH, HUMAN SAFETY OR SENSITIVE ENVIRONMENTAL RECEPTOR		
A.1	Vapor concentrations at or approaching explosive levels that could cause health effects, are present in a residence or building.	☐	☐
A.2	Vapor concentrations at or approaching explosive levels are present in subsurface utility system(s), but no buildings or residences are impacted.	☐	☐
CLASS B	IMMEDIATE THREAT TO HUMAN HEALTH, HUMAN SAFETY OR SENSITIVE ENVIRONMENTAL RECEPTOR		
B.1	An active public water supply well, public water supply line, or public surface water intake is impacted or immediately threatened.	☐	☐
B.2	An active domestic water supply well, domestic water supply line or domestic surface water intake is impacted or immediately threatened.	☐	☐
B.3	The release is located within a designated Wellhead Protection Area I.	☐	☐
CLASS C	IMMEDIATE THREAT TO HUMAN HEALTH, HUMAN SAFETY OR SENSITIVE ENVIRONMENTAL RECEPTOR		
C.1	Ambient vapor/particulate concentrations exceed concentrations of concern from an acute exposure, or safety viewpoint.	☐	☐
C.2	Free product is present on the groundwater, at ground surface, on surface water bodies, in utilities other than water supply lines, or in surface water runoff.	☐	☐

CLASSIFICATION	*DESCRIPTION*	*YES*	*NO*

CLASS D.1	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS		
D.1	There is a potential for explosive levels, or concentrations of vapors that could cause acute effects, to accumulate in a residence or other building.	☐	☐
D.2	A non-potable water supply well is impacted or immediately threatened.	☐	☐
D.3	Shallow contaminated surface soils are open to public access, and dwellings, parks, playgrounds, day care centers, schools or similar use facilities are within 500 feet of those soils.	☐	☐
CLASS E.1	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS		
E.1	A sensitive habitat or sensitive resources (sport fish, economically important species, threatened and endangered species, etc.) are impacted and affected.	☐	☐
CLASS F	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS		
F.1	Groundwater is impacted and a public well is located within 1 mile of the site.	☐	☐
F.2	Groundwater is impacted and a domestic well is located within 1,000 feet of the site.	☐	☐
F.3	Contaminated soils and/or groundwater are located within designated Wellhead Protection Areas (Areas II or III).	☐	☐
CLASS G	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS		
G.1	Contaminated soils and/or groundwater are located within areas vulnerable to contamination from surface sources.	☐	☐
CLASS H	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS		
H.1	Impacted surface water, stormwater or groundwater discharges within 500 feet of a surface water body used for human drinking water, whole body water-contact sports, or habitat to a protected or listed endangered plant and animal species.	☐	☐
CLASS I	LONG TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS		
I.1.	Site has contaminated soils and/or groundwater but does not meet any of the above mentioned criteria.	☐	☐

ADDITIONAL COMMENTS:

Complete the classification evaluation questions listed above. Upon completion, determine the highest rank of the site (A.1 is the highest rank) based on the statements answered with a yes.

Enter the determined classification ranking	

ADEM GROUNDWATER BRANCH
SITE CLASSIFICATION CHECKLIST

ADEM Form #481 8/02