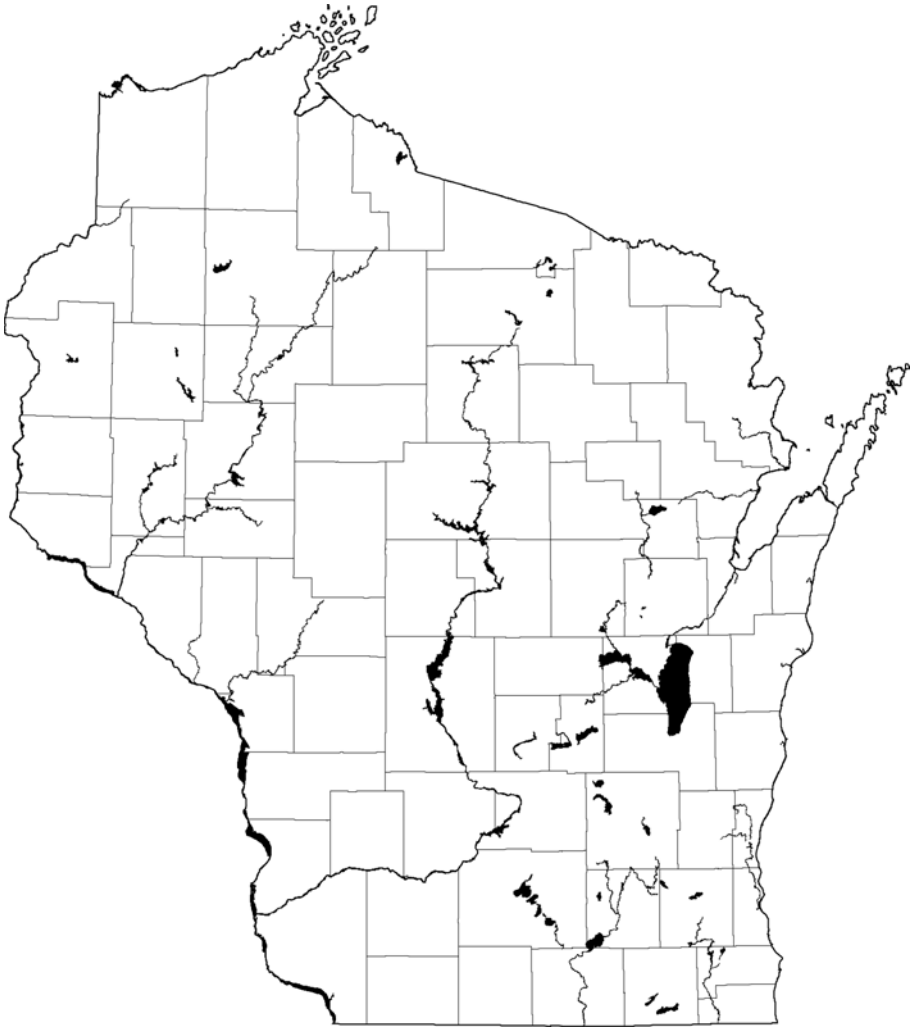
TANK-SYSTEM SITE ASSESSMENT

A GUIDE TO THE ASSESSMENT AND REPORTING OF SUSPECTED OR OBVIOUS RELEASES FROM UNDERGROUND AND ABOVEGROUND STORAGE TANK SYSTEMS



ERS-10874 (R.07/2013)

FORWARD

A thorough assessment of underground and aboveground storage tank systems is crucial for the protection of public health and the groundwater and surface waters of the State of Wisconsin. The purpose of this publication is to explain the Department of Agriculture, Trade and Consumer Protection (DATCP) expectations and requirements, in concert with the Administrative Code SPS 310 Flammable, Combustible and Hazardous Liquids, for assessing and reporting suspected or obvious releases as well as system leaks from underground and aboveground storage tank systems.

Responsibility for maintaining this tank-system site assessment publication for chapter SPS 310 (formerly chapter Comm 10) storage tank regulations lies with the Bureau of Weights and Measures. Many of the analytical standards and much of the protocol has been established by the Department of Natural Resources (DNR) via NR 700 and Wisconsin Statute 292.11 This publication supersedes previous site assessment guidance documents (Site Assessments for Underground Storage Tanks, Technical Guidance) previously issued by the DNR or the Department of Commerce.

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I. INTRODUCTION

Wisconsin Administrative Code dating back to 1932 has required that specific procedures be conducted to close or remove underground petroleum product storage tanks that are abandoned or no longer in use. Prior to August 1971, Chapter IND 8.25 required that Underground Storage Tanks (USTs) be closed by removing all liquids from the tank and piping, disconnecting all lines and system components, and either closing the tank in place by filling with water or a solid inert material, or removing the tank and associated equipment from the site. Between August 1971 and December 22, 1988, closure in place with a solid inert material was still allowed; however, filling with water was prohibited. Closure in place was prohibited all together after December 22, 1988, with only a few exceptions.

A. PURPOSE OF THIS PUBLICATION

This publication specifies technical procedures and prescribes reporting requirements that are acceptable to the Department of Agriculture, Trade and Consumer Protection (DATCP) for complying with assessment and release reporting requirements in chapter SPS 310, the chapter NR 700 series and State Statute 292.11. Given the large number, and wide variety of underground and aboveground storage tank system configurations found in Wisconsin, it is not possible to develop comprehensive practices applicable to every assessment situation. Therefore, if you encounter a situation not covered in this publication or, if you have questions about any aspect of the details contained in this document, contact James Moser at (608) 267-7533 or james.moser@wisconsin.gov.

B. WHAT IS A TANK-SYSTEM SITE ASSESSMENT (TSSA)?

What a TSSA is not.

- It is not an ASTM Phase I or II Environmental Site Assessment (E1527-05, E1903-02).
- It is not a Site Investigation.
- It is not restricted to a complete underground storage tank system (UST) closure.

The following terminology, “Site Assessment,” “Tank Closure Assessment” and “Site Investigation,” are just a few examples of language that has commonly been used to describe underground storage tank-system site assessments, especially UST closures. These terms have also been used interchangeably to describe comprehensive site investigations (SI), Phase I and II environmental site assessments (ESA) as well as tank closure assessments.

In order to provide some clarity, DATCP will use the following terminology – “Tank-System Site Assessment” or TSSA. It is hoped that this terminology will eliminate any confusion regarding the Department’s expectations for assessments of underground and aboveground storage tank systems.

In this publication, TSSA means the process by which the Department expects tank system owners or operators to determine if their tank system or any component of that system has leaked and if so, has there been a release of hazardous substances into soil, groundwater, or surface waters of the State of Wisconsin.

This process includes the following:

1) Identification of field conditions that suggest that a release has taken place – for example, petroleum stained soils and petroleum odors; pitting, holes, or cracks in tank system components; observable leaks; elevated in-field soil gas readings (PID or FID) or the detection of free product in the closure excavation(s) or tank-bed monitoring well/sump or free product on nearby surface waters;
2) Collection of soil samples for laboratory analysis of petroleum products or other hazardous substances, as prescribed later in this document, and
3) Reporting of field observations and sampling results in a format prescribed by the Department.

In general, TSSAs are to be performed at the time a UST or AST, or some component thereof, is to be taken out of service (closure) or replaced, or when a product release is suspected or has obviously occurred. The term “Tank-System Site Assessor,” refers to individuals who maintain a chapter SPS 305 Tank-System Site Assessor certification. This certification authorizes these individuals to perform TSSAs or to supervise others that may perform TSSAs.

C. PURPOSE AND NEED FOR THE TSSA

The purpose of the TSSA is to document whether a release from a UST or AST system has occurred and, if so, from which part of the system (source[s]) it originated and how (cause[s]). In general, a “release” is any discharge, including spilling, leaking, pumping, pouring, emitting, emptying, leaching, dumping or disposal of a flammable or combustible liquid or a federally regulated hazardous substance into soils, groundwater or surface water [SPS 310.050 (103)].

There are three situations when a TSSA must be performed:

1) Suspected or Obvious release (no exceptions).
2) Tank system closure. (*There are exceptions. See APPLICABILITY on page 8 of this document*)
3) In-place closure of federally regulated tank systems

For a suspected release, a TSSA must be performed if any component of a tank system is found not to be tight.

The primary activities that can reveal a suspected or obvious release, which then triggers the need for a TSSA, include the following:

- Tank system upgrade.
- Tank system closure
- Tank system change in service to store a non-regulated substance.
- Tank system repair.

“Tank system closure” is a procedure by which an entire tank system is evaluated and permanently rendered safe from contributing to human danger, fire, explosion, and environmental contamination. A “suspected” release [SPS 310.050 (113)] occurs where (1) there is an indication of a release, but there is no environmental evidence; or (2) there is environmental evidence, but the source is unknown. An “obvious” release [SPS 310.050 (76)] is where there is both environmental evidence and a known source. The only situation where a TSSA is required when there is neither a suspected nor an obvious release is during a complete “Tank-System Closure” (Exceptions as noted on page 8).

While SPS 310 requires TSSAs, and applicable federal law requires the same, there are exceptions. Even though a TSSA may not be required in some instances, failure to perform one may limit an owner's ability to sell or lease their property, and may also result in significant revenue losses.

Although the presence of free-phase liquid, strong odors, stained soil or backfill, or other conditions make it obvious (an obvious release) that a release from the system has occurred, it is still necessary to complete a thorough TSSA and report the findings to the Department and the DNR.

Figure 1 illustrates the process for determining if a TSSA must be performed.

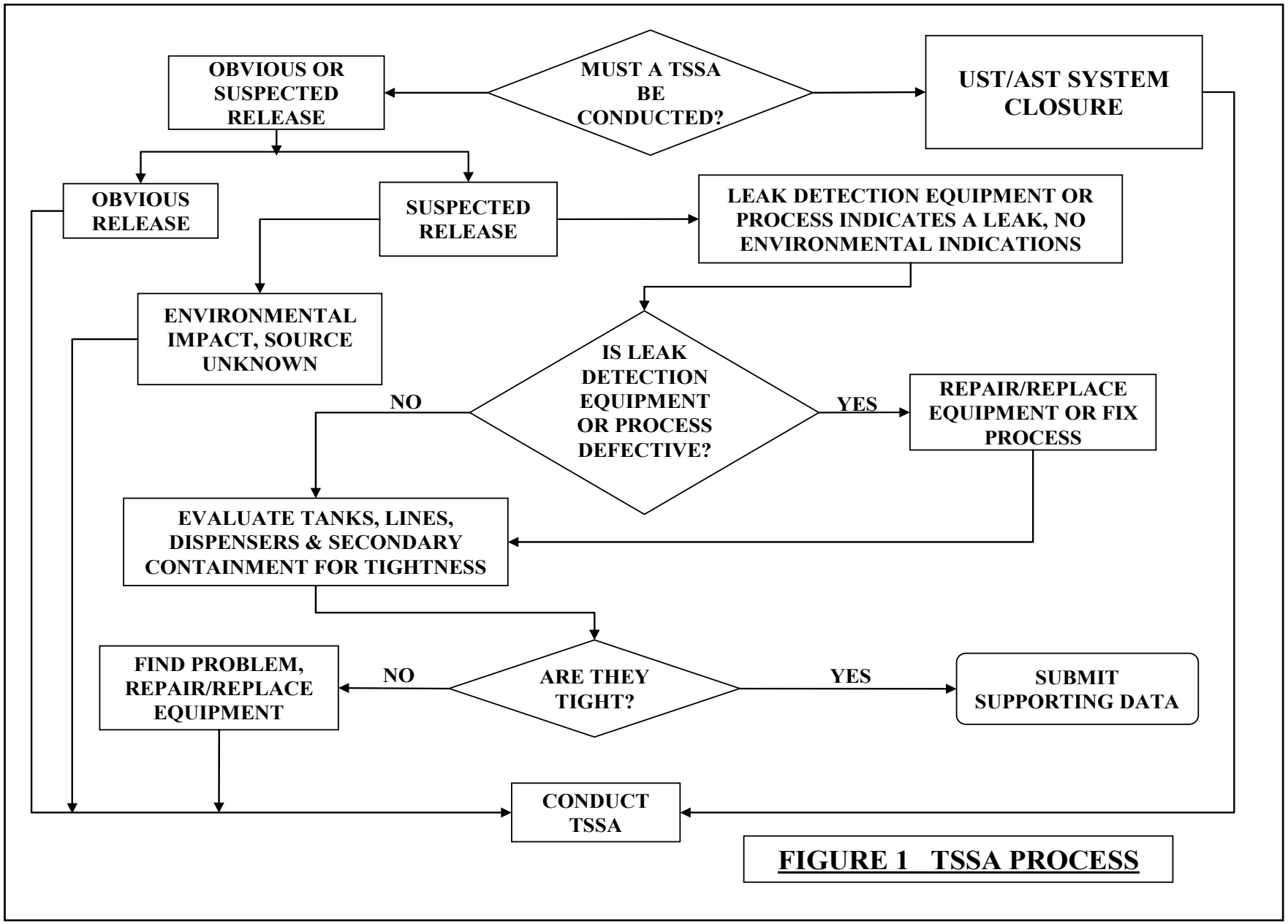

FIGURE 1 TSSA PROCESS

D. WHO SHOULD USE THIS PUBLICATION?

Environmental professionals seeking DATCP ERS release assessment and reporting information, such as registered Tank Specialty Firms, Tank-System Site Assessors, and Tank System Removers and Cleaners. The publication should also help owners and operators, as well as their environmental consultant, to understand and oversee release-assessment activities conducted at their storage tank sites, should it become necessary.

E. ABBREVIATIONS and ACRONYMS

AST – Aboveground Storage Tank

DHS – (Wisconsin) Department of Health Services

DNR – Department of Natural Resources

DATCP – Department of Agriculture, Trade and Consumer Protection

EPA – U.S. Environmental Protection Agency

BWM – Bureau of Weights and Measures

ESA – Environmental Site Assessment

LPO – Local Program Operator

PID – Photo-Ionization Detector

PVOC – Petroleum Volatile Organic Compound

TSSA – Tank-System Site Assessment

USGS – United States Geological Survey

UST – Underground Storage Tank

VOC – Volatile Organic Compound

II. PROGRAM OVERVIEW AND APPLICABILITY

A. OVERVIEW

The Bureau of Weights and Measures within the DATCP Division of Consumer Protection is responsible for the administration and regulation of UST and AST systems in Wisconsin. This is accomplished through the administrative and technical standards contained in Wisconsin Administrative Code chapter SPS 310. The Bureau's administrative and regulatory functions include:

- Technical code and standards consultation for chapter SPS 310.
- Permitting and registration of aboveground and underground flammable, combustible and hazardous liquid storage tank systems.
- Retail service station inspection and petroleum product testing.
- Maintenance of a statewide aboveground and underground storage tank database.
- Review of system design plans for storage or dispensing system installation, modification or upgrade.
- Credential administration for individuals working in specialties requiring certification.
- Administration of the SPS 310 Local Program Operator program.

SPS 310.580 (3) states that when an assessment of an underground tank-system site is required, the owner or operator must have a certified tank-system site assessor document field observations and sample for the presence of a release wherever contamination is identified or is most likely to be present at the tank site. If the assessor discovers obvious contamination, he or she must complete the appropriate assessment sampling – such as for the entire system; or for only the tank, or piping, or

sumps, or dispensers – and complete the documentation and reporting in its entirety. All sampling, documentation and reporting under this code section must be in a format prescribed by the Department.

SPS 310.465 (1) states that TSSAs for aboveground storage tanks must comply with the requirements of section SPS 310.580. It further states that assessment of aboveground storage tank systems must include evaluation of any underground piping, the loading rack or transfer area, and the area under each tank.

SPS 310.180 states that for violations of the rules of chapter SPS 310, penalties are assessed in accordance with section 101.09 (5) of the Wisconsin Statutes, as follows, and apply separately to each tank that is in violation of chapter SPS 310.

> *"Any person who violates this section or any rule or order adopted under this section shall forfeit not less than $10, nor more than $5,000 for each violation. Each violation of this section or any rule or order under this section constitutes a separate offense and each day of continued violation is a separate offense."*

SPS 310.180 further notes that section 40 CFR 281.41 allows the US EPA to assess fines of up to $5,000 or more for each tank, for each day of violation.

B. APPLICABILITY

In general, SPS 310 requires that a TSSA be performed at the time a storage tank system or some component thereof is to be upgraded, repaired or is to undergo a change in service to store a non-regulated substance – and there is a suspected or obvious release. A TSSA is also required when a tank system or some component thereof is to be removed from service. In this situation, there may be no suspected or obvious release initially.[1]

A TSSA is <u>not</u> required for the following tank systems or components thereof <u>unless there is a suspected or obvious release</u>:

1) Tanks which have a capacity of less than 4,000 gallons and which stored heating oil for consumptive use on the premises where stored.
2) Tanks located at a private residence or on a farm premises, which have a capacity of less than 1,100 gallons, and which stored fuel for dispensing into motorized vehicles.
3) The closure of double wall pipe when modification or upgrading is conducted on a system that will remain in operation, unless the piping is to be abandoned in-place.
4) Where an entire underground tank system, including the connections at the tank and dispensers, has been placed in liquid-tight secondary containment for the entire life of the system.
5) Aboveground storage tanks or underground piping that have been placed in secondary containment complying with section SPS 310.420 (2) (d), (e) or (g) for their entire operational life.
6) Loading racks or transfer areas that have been placed in secondary containment complying with section SPS 310.420 (5) for their entire operational life.
7) Aboveground storage tanks with a capacity less than 5,000 gallons.

Conditions are variable and typically complex at sites where an investigation and cleanup is ongoing or has taken place and the closure is conditional. Conditional closures typically allow for some level of contamination to remain in place (often referred to as residual contamination). The need for a TSSA at these sites will be determined on a case-by-case basis due to their complex nature. **The Department of Agriculture, Trade and Consumer Protection (James Moser, (608) 224-5157 or james.moser@wisconsin.gov) must be contacted prior to performing any activities at these sites.**

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[1] Note: The definition of a "tank system" in SPS 310 includes all associated piping. A separate assessment is required for other system components if they are removed from service or upgraded at a time different from that of the UST.
Note: SPS 310 allows closure in-place only in a limited number of situations. Written permission must be obtained from the Department.

III. CERTIFICATION REQUIREMENTS AND ENFORCEMENT FOR TANK-SYSTEM SITE ASSESSORS

SPS 305.83 (1) (a) states that no person may conduct a TSSA required under chapter SPS 310 unless that person holds a certification issued by the Department as a certified Tank-System Site Assessor.

SPS 305.83 (1) (b) further declares that tank-system site assessments are not to be performed by a person, even though they might be certified, with a personal or monetary interest in the facility or whose employer has a personal or monetary interest in the facility.

Penalties for violations of chapter SPS 305 will be assessed in accordance with section 101.09 (5) of the Statutes.[2]

Information on contractor certification may be obtained at the following web address (press Ctrl then click on the link): http://apps2.commerce.wi.gov/SB_Credential/SB_CredentialApp/SearchByCredType

IV. TSSA PROCEDURES

A. PRE-ASSESSMENT STEPS

Check Local Ordinances
Always check for a local ordinance that may govern tank system closure. SPS 310 specifies minimum statewide standards, and local governments may have requirements that are more restrictive.

Contact Program Operators
(State, LPO). For Local Program Operator (LPO) jurisdictions, see the following Web site: http://DSPS.wi.gov/php/er-lpolists/lpo_agency_list.php. For LPO contact information, see http://DSPS.wi.gov/php/er-lpolists/lpo_contacts_list.php.

B. SUSPECTED AND OBVIOUS RELEASES

According to chapter SPS 310, a suspected release occurs where (1) there is an indication of a release, but there is no environmental evidence; or (2) there is environmental evidence of a release, but the source is unknown. An obvious release is one in which there is both environmental evidence and a known source.

1. Evidence

Suspected Release

A release is considered suspected when one or more of the following occur:

- A tank system exhibits unusual operating conditions (for example, erratic dispenser behavior, loss of product, or the appearance of water in the tank or sump containment).
- Release detection monitoring triggers an alarm, or otherwise indicates a problem.
- There is direct visual or olfactory observation of released product into the environment – for example, a sheen is visible on surface water; product or vapors are found in a utility conduit; free-phase liquid is discovered in observation wells, the tank bed, or in other portions of the storage tank system; or analytical results of samples collected during a TSSA or routine real estate transfer assessment (Phase II ESA) reveal the presence of petroleum contamination, but the contaminant source is unknown.
- Inventory verification records indicate an unexplained loss of tank contents.

[2] "Any person who violates this section or any rule or order adopted under this section shall forfeit not less than $10 or more than $5,000 for each violation. Each violation of this section or any rule or order under this section constitutes a separate offense and each day of continued violation is a separate offense." Note: Section 40 CFR 281.41 allows the US EPA to assess fines of up to $5,000 or more for each tank for each day of violation.

Obvious Release

A release is considered obvious when *both* of the following conditions exist:

- Environmental contamination is present, and
- The source of the contamination is known.

Examples of obvious releases include finding environmental contamination during the investigation of a suspected release, identifying the unknown source of a previously discovered release, or confirming a tank-system failure that resulted in the release of product.

2. Action Required

Suspected Release

Assessment activities should consist of making visual and olfactory observations; taking photos of impacted soils, free-phase liquid, and trench and tank-bed excavations (all side walls and floor); evaluating for vapors using a field vapor-sampling device, such as a photo ionization detector (PID) or a flame ionization detector (FID); and conducting environmental sampling. Sampling procedures are presented below.

If you find environmental contamination at any step in the assessment of a suspected release, or if you determine the source of a previously discovered release, then the suspected release becomes an obvious release. More on obvious releases follows.

Obvious Release

Unless directed otherwise by the Department, owners and operators must report obvious releases to the DNR immediately. (See page 38 for further information about reporting.)

V. SAMPLING

A. GENERAL CONSIDERATIONS

1. Quality and Representative Samples

The importance of collecting samples that are representative of the compounds stored in the tank, both recent and historical, and site conditions cannot be overstated. Since flammable, combustible or federally regulated hazardous substances consist largely of volatile organic compounds (VOCs), special care in collecting samples is required. Soil samples collected during the TSSA process must be analyzed in accordance with the following (see table below):

WHAT TO SAMPLE FOR						
SAMPLE PARAMETER	MATRIX					
	GASOLINE	DIESEL	WASTE OIL	KEROSENE	FUEL OIL	CHLORINATED SOLVENTS[3]
VOC			X			X
PVOC	X	X		X	X	
NAPHTHALENE	X	X	X	X	X	

[3] For Chlorinated compounds common to dry cleaner solvents refer to the petroleum Analysis EPA Method 8260B Volatile Organic Compounds (VOC) via GC/MS at the following URL (press Ctrl then click on the link):

http://www.epa.gov/osw/hazard/testmethods/sw846/pdfs/8260b.pdf

2. Compositing

Because compositing of samples in the field does not yield sample results that are representative of site conditions, sample compositing is not allowed for release determination. Only discrete grab samples are acceptable for this purpose.

3. When and Where to Collect Soil Samples[4]

In general, one must always collect samples from native soil. If necessary, all backfill materials must be removed from an excavation prior to sampling to ensure that native soil is sampled. Samples must be collected from both the floor (when conditions permit) and sidewalls of an excavation. More specifically, from native soil that remains in the floor or sidewalls of the excavation and which appear to be the most contaminated or the most likely to be contaminated. All samples must be collected from a minimum depth of twelve (12) inches into the floor or sidewall as soon as possible after the native soil is exposed to the atmosphere. This procedure will minimize loss of contaminants through volatilization into the atmosphere. Compositing of samples (including sampling of the backfill) is not permitted. Each sample that is collected must be analyzed separately.

*(**Note**: The Department does not consider water in an excavation to be relevant to the release determination process at this point; therefore, water sampling is not required during the TSSA process)*

If a backhoe is used to collect soil samples, the above sampling criteria must still be followed. Immediately upon removal from the excavation, discrete grab samples must be collected from 12 inches into the unexposed soil in the backhoe bucket.

In selecting sample types, locations, and analytical testing methods, consider the nature of the stored substance, the type of initial release detection alarm or cause for suspicion, the composition of the native soils, depth to groundwater, and any other factors appropriate for identifying the presence and source of a release. Because a tank system can fail at any point, the entire system – fill port, transition containment unit(s), tanks, piping runs, secondary containment units for submersible pumps or dispensers, or dispensers – must be assessed.

Always give preference to collecting discrete grab samples of soil in areas where:

- There are obvious (visual, olfactory, or field-instrument) indications that contamination is present, or
- There are no obvious indications of a release – collect samples from locations where releases are most likely to migrate, e.g. from submersible pump containment units, from areas of corrosion on USTs, ASTs, spill buckets and piping; from system joints and from dispensers and transition containment units. All can and have failed due to corrosion, cracks, failed sump entry fittings and installation complications.

Examples of some typical sample locations at a facility are shown in Figure 2 (Top of next page). More detailed examples are presented later in this document.

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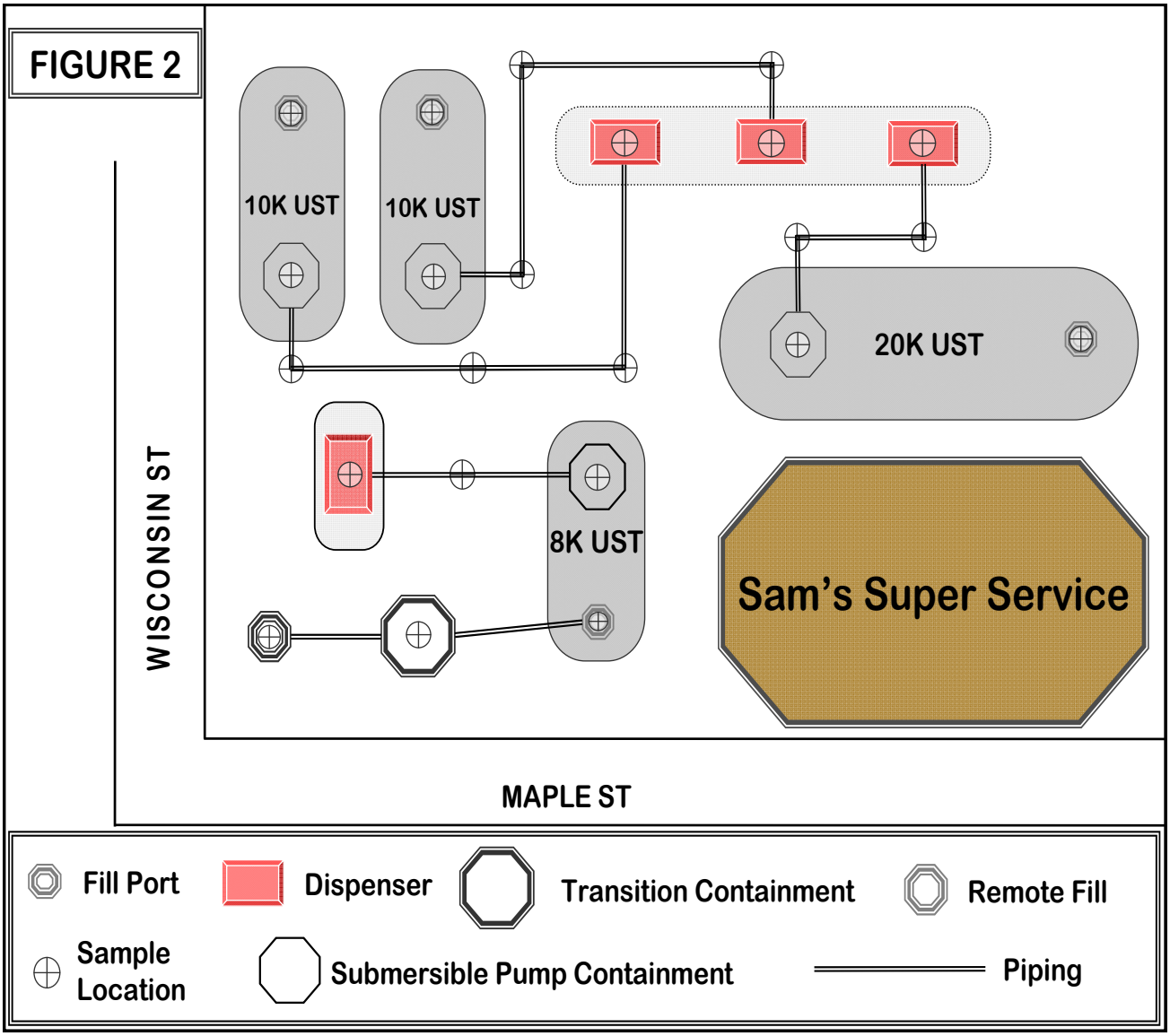
[4] Sample locations given in this publication are primarily for UST systems; however, the same general selection methodology can be used for routine AST system removals and routine environmental site assessments (ESAs). Always give priority to sampling in areas displaying obvious visual, olfactory, or field-instrument indications of contamination.



B. GENERAL DESCRIPTION OF TANK BED SAMPLING

1. Floor

Tank-bed sample locations depend upon the size (length & diameter) of the UST(s), number of tanks in the system, their proximity and orientation to one another and whether there are encumbrances, such as perched water, shallow groundwater, shallow bedrock or a concrete slab present. Selection of sample locations will also depend upon site conditions as well as use history. The number of parameters to analyze for will depend upon current and past products stored in the tanks

2. Side Wall Sampling

Samples of native soil are to be collected, at a minimum, from 12 inches into the wall of the tank-bed. There must be at least 1 sidewall sample collected from each tank bed wall and every 10-feet of horizontal wall, or portion thereof (e.g. for an excavation with 10 ft long walls at least 1 sample must be collected from each wall; for an excavation with 17 ft long excavation walls at least 2 samples must be collected from each wall of the excavation).

Use the following sample-collection protocols:

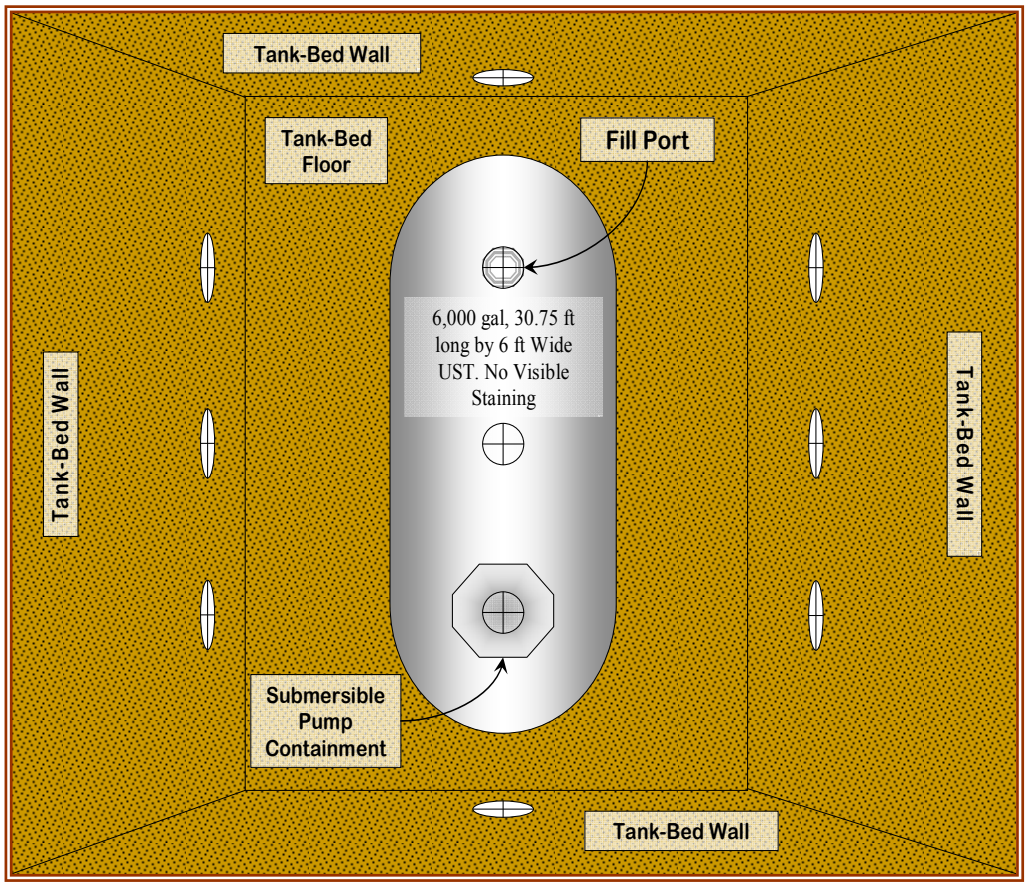
a) Collect samples from the most obvious, most heavily contaminated soil – to the least obvious, least contaminated soil.

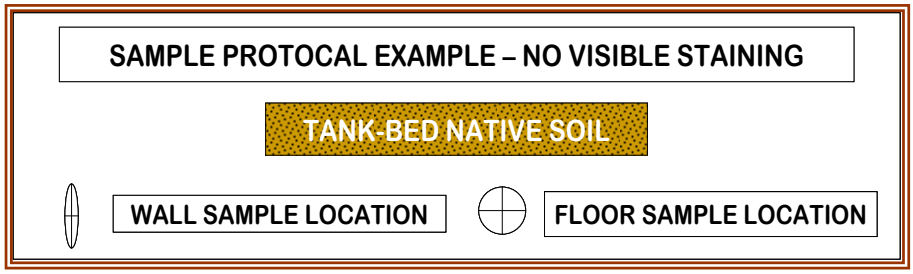
b) If there are no areas of obvious contamination, then collect native soil from areas to which a release is most likely to migrate (e.g., in line with the fill port, the submersible pump containment and piping connections).

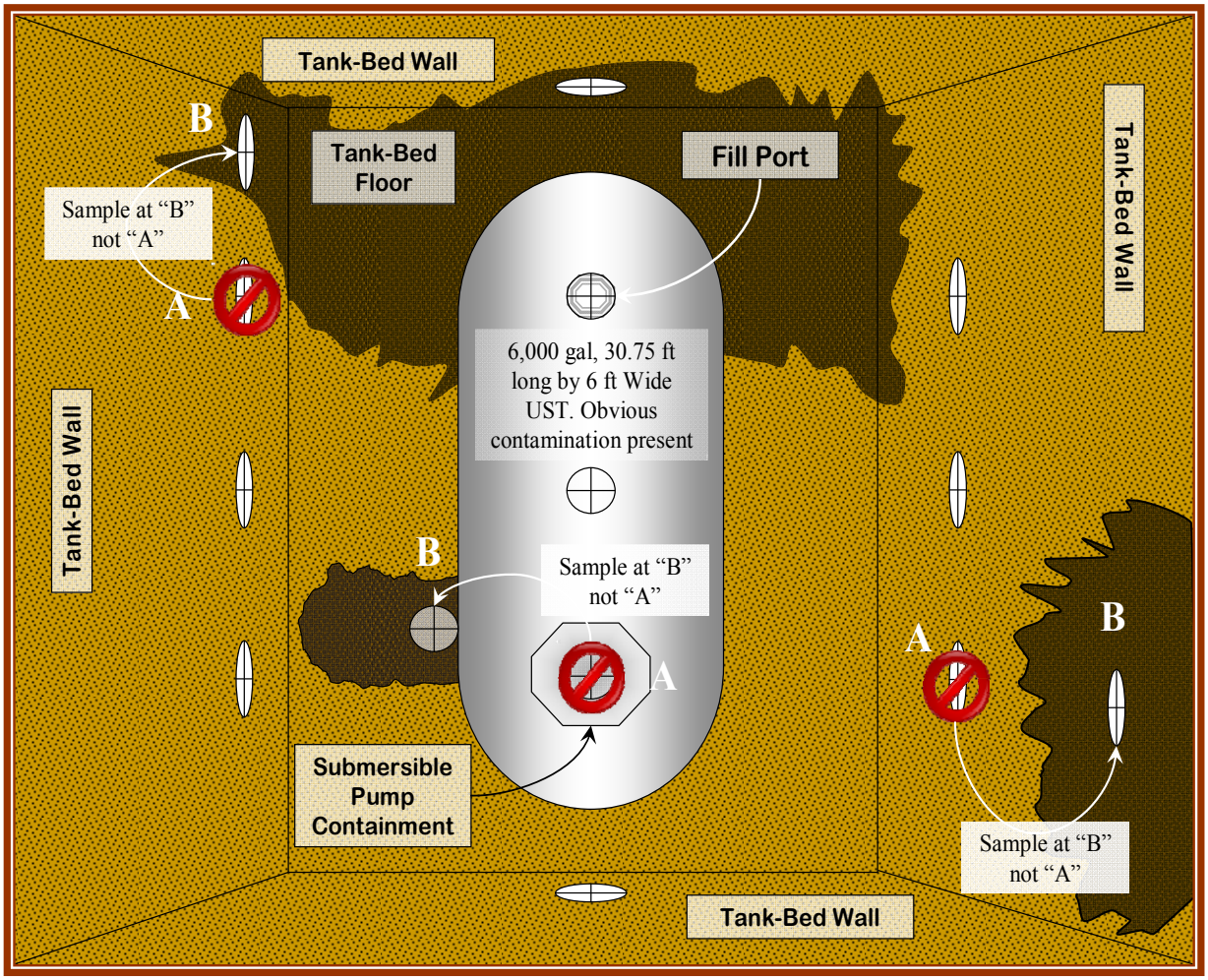
c) Type of soil and geology (more importantly the porosity and permeability) should also be taken into consideration.

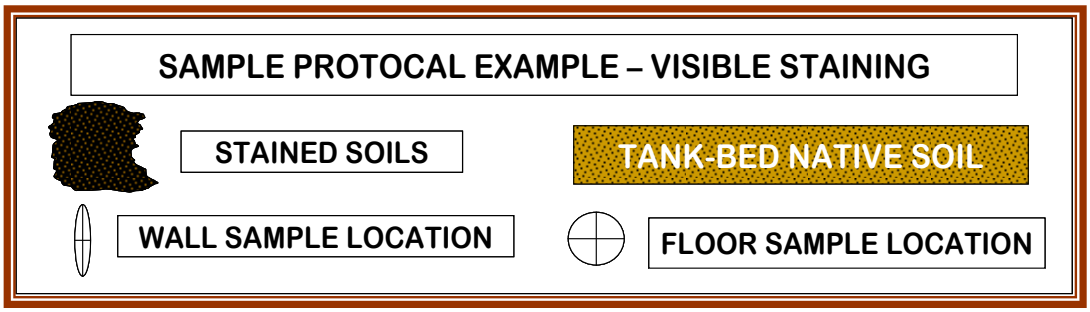
Photographs of the site, the excavated tank-bed (to include floor and all sidewalls), piping and dispenser trenching, as well as examples of both contaminated and uncontaminated areas must be taken. Indicate on these images where samples were collected and submit them along with parts A and B of this document.

See the following general diagrams for guidance in determining where to collect side-wall and floor samples.



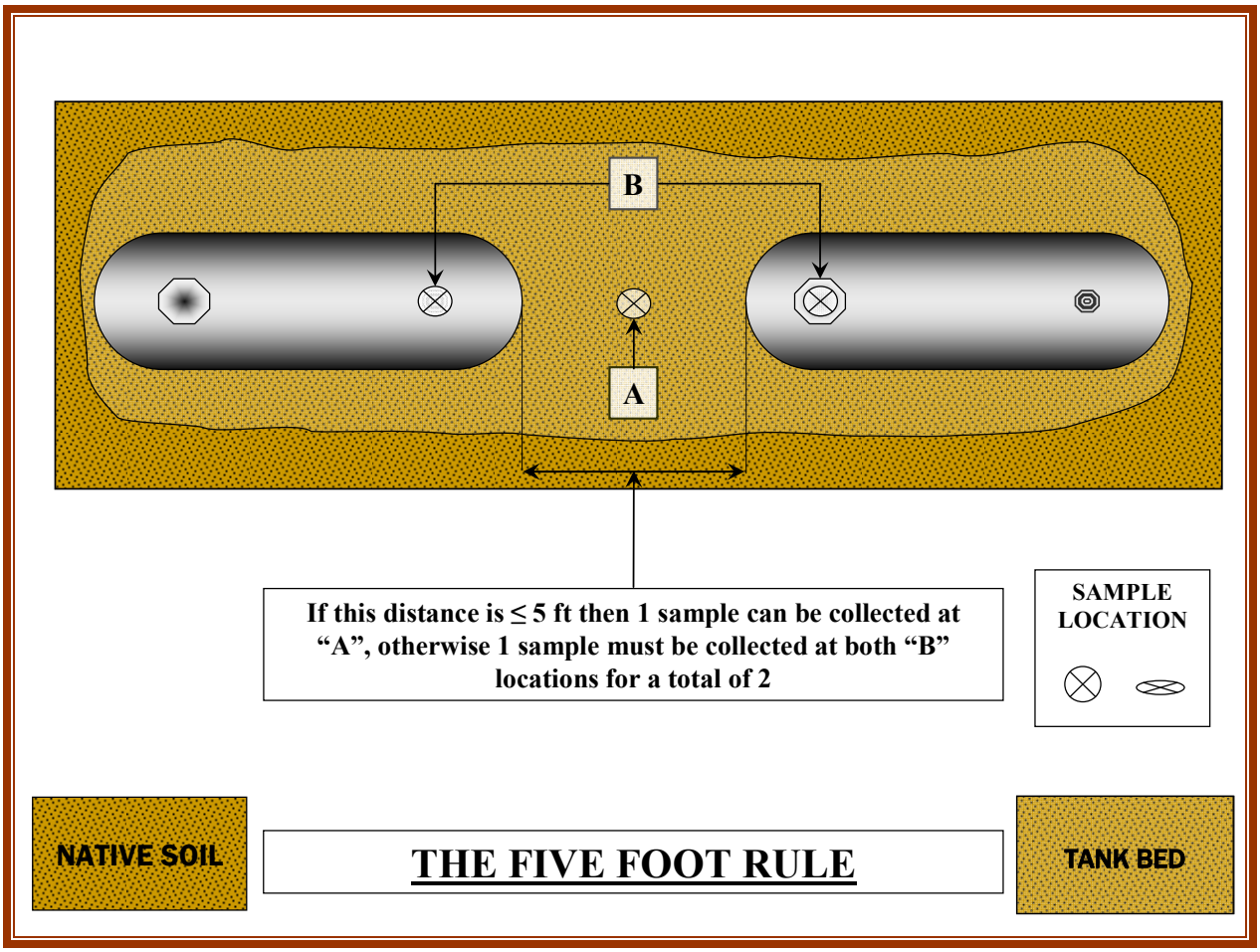



Tank-Bed Wall
B
Tank-Bed Floor
Fill Port
Tank-Bed Wall
Sample at "B" not "A"
A
6,000 gal, 30.75 ft long by 6 ft Wide UST. Obvious contamination present
Tank-Bed Wall
B
Sample at "B" not "A"
A
A
B
Submersible Pump Containment
Sample at "B" not "A"
Tank-Bed Wall


SAMPLE PROTOCAL EXAMPLE – VISIBLE STAINING
STAINED SOILS
TANK-BED NATIVE SOIL
WALL SAMPLE LOCATION
FLOOR SAMPLE LOCATION

C. RECOMMENDED SAMPLING LOCATIONS

The following diagrams illustrate the recommended sampling locations for tanks of various sizes and number, and various types of encumbrances. The sample locations that are shown between tanks are for tanks which are spaced no more than 5 feet apart (The Five Foot Rule). For wider spacing between tanks, the number of samples increases to 2 and each sample is to be collected adjacent to its respective tank.



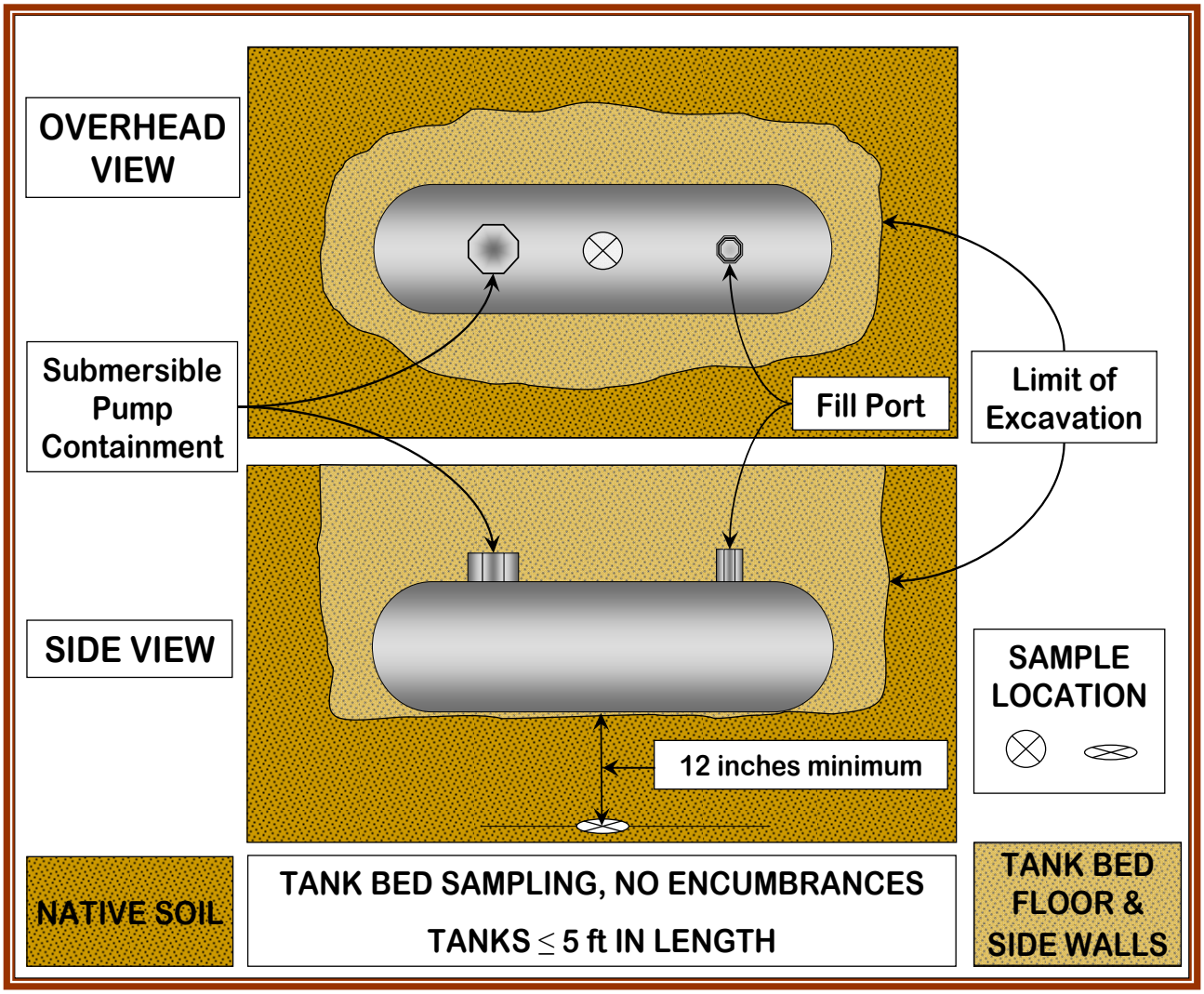
1. FLOOR SAMPLING

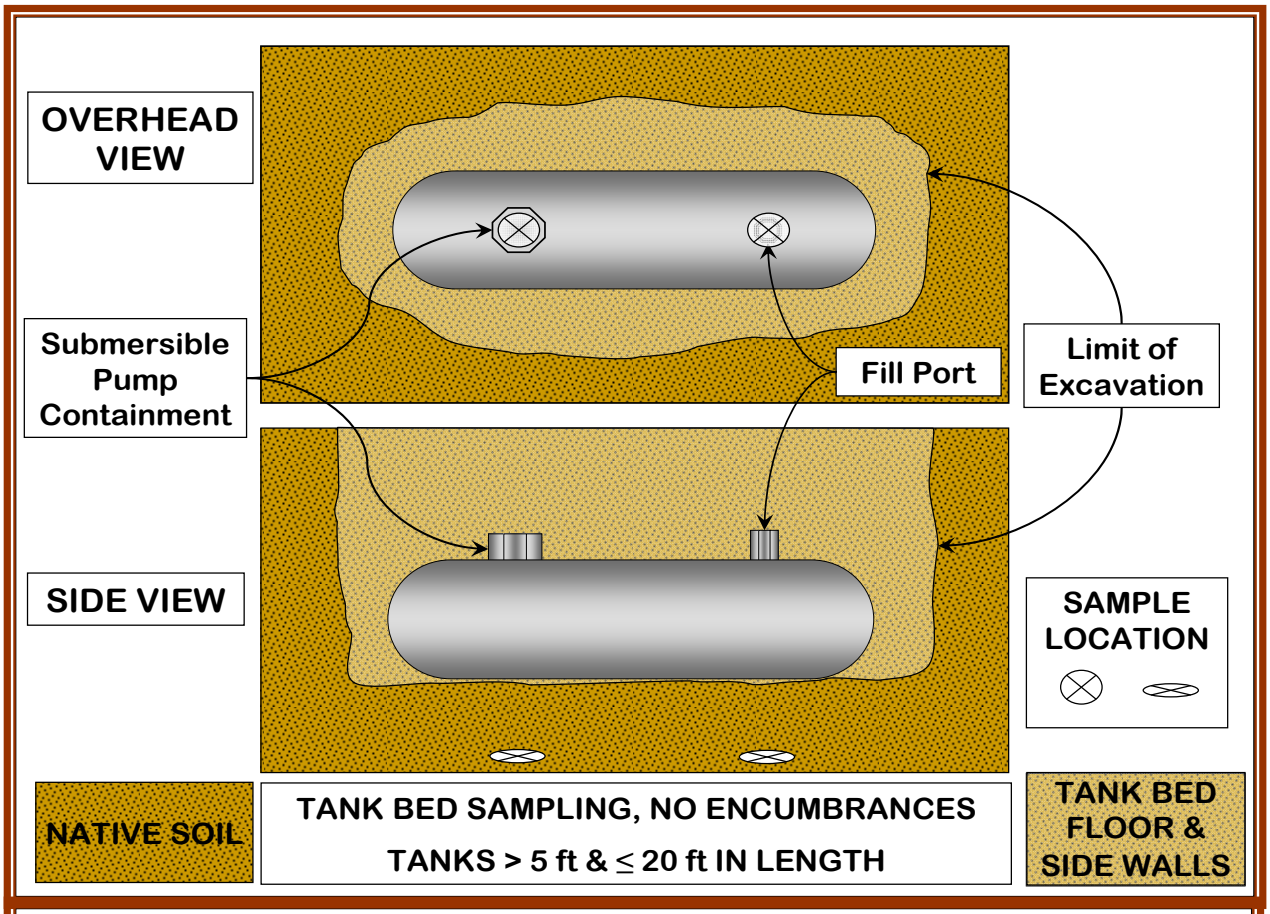
NO ENCUMBRANCES

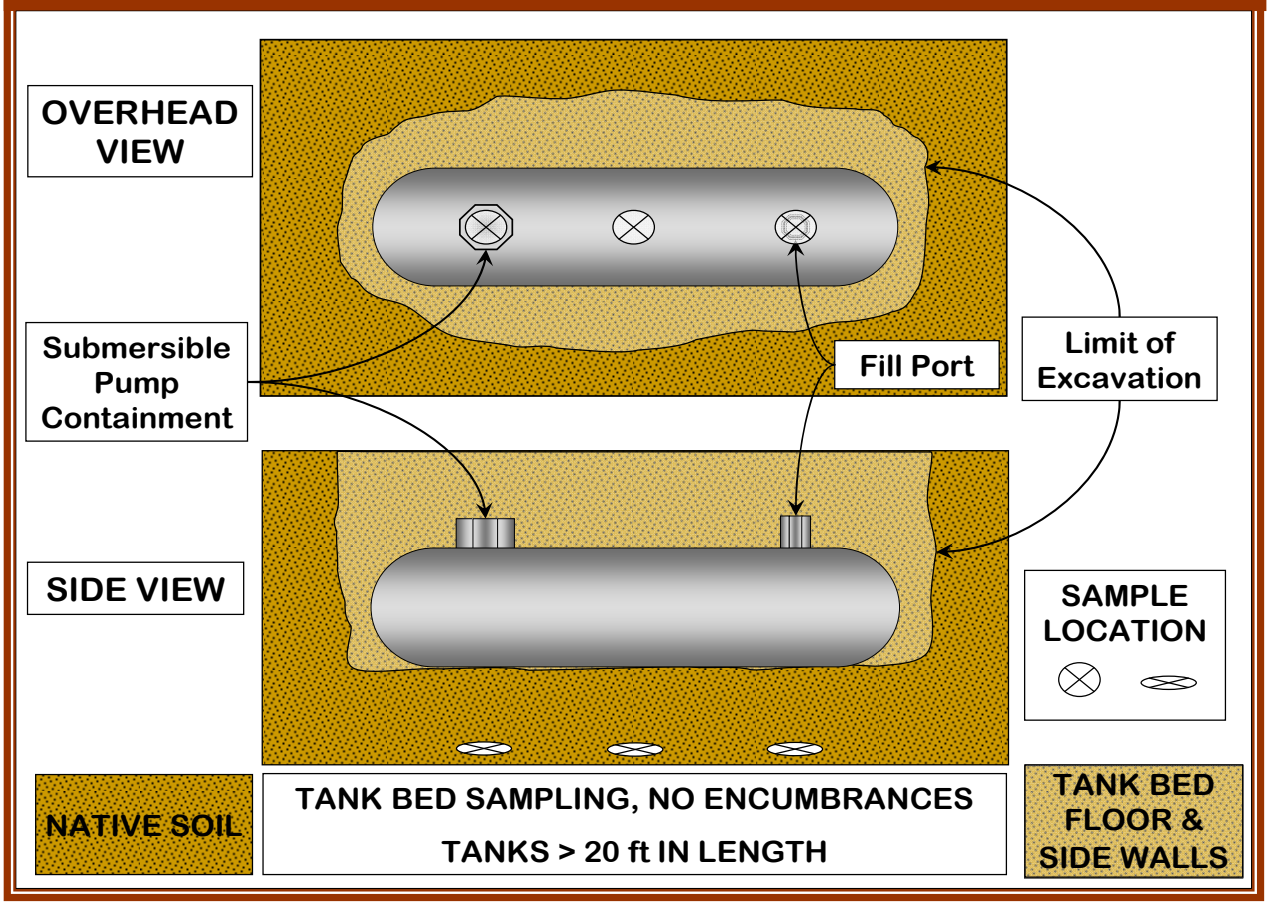
Samples of native soil are to be collected from approximately 1 foot into the floor of the tank bed (see diagrams below for details).

Single Tank

Length of Tank	Minimum Number of Soil Samples Per Tank
≤ 5 feet	**1** sample under middle of tank.
> 5 feet up to and including 20 feet	**2** samples: 1 under each end of the tank, in-line with the fill port and submersible pump containment.
>20 feet	**3** samples: 1 under each end of tank, and 1 from beneath the mid-region of the tank.

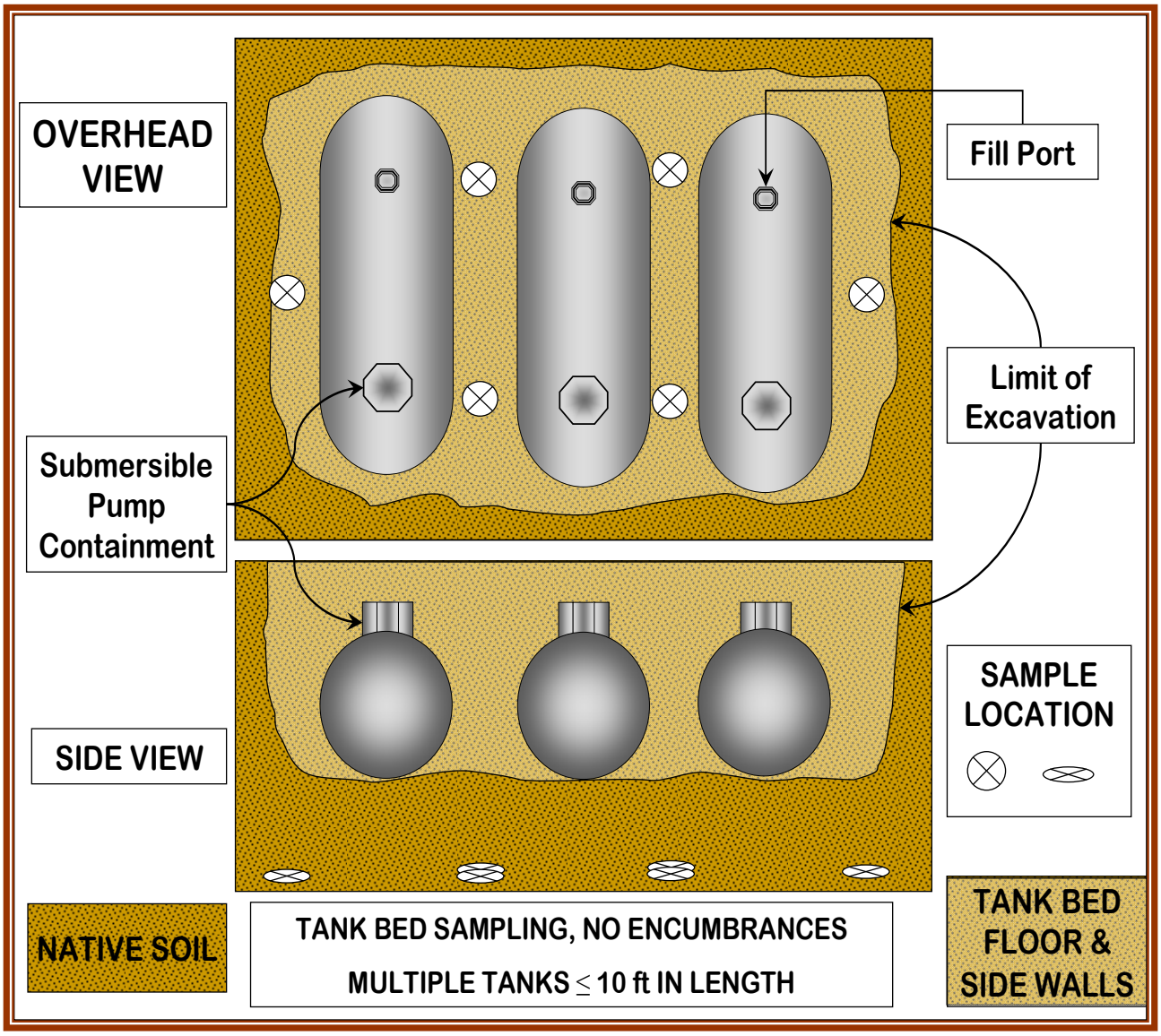


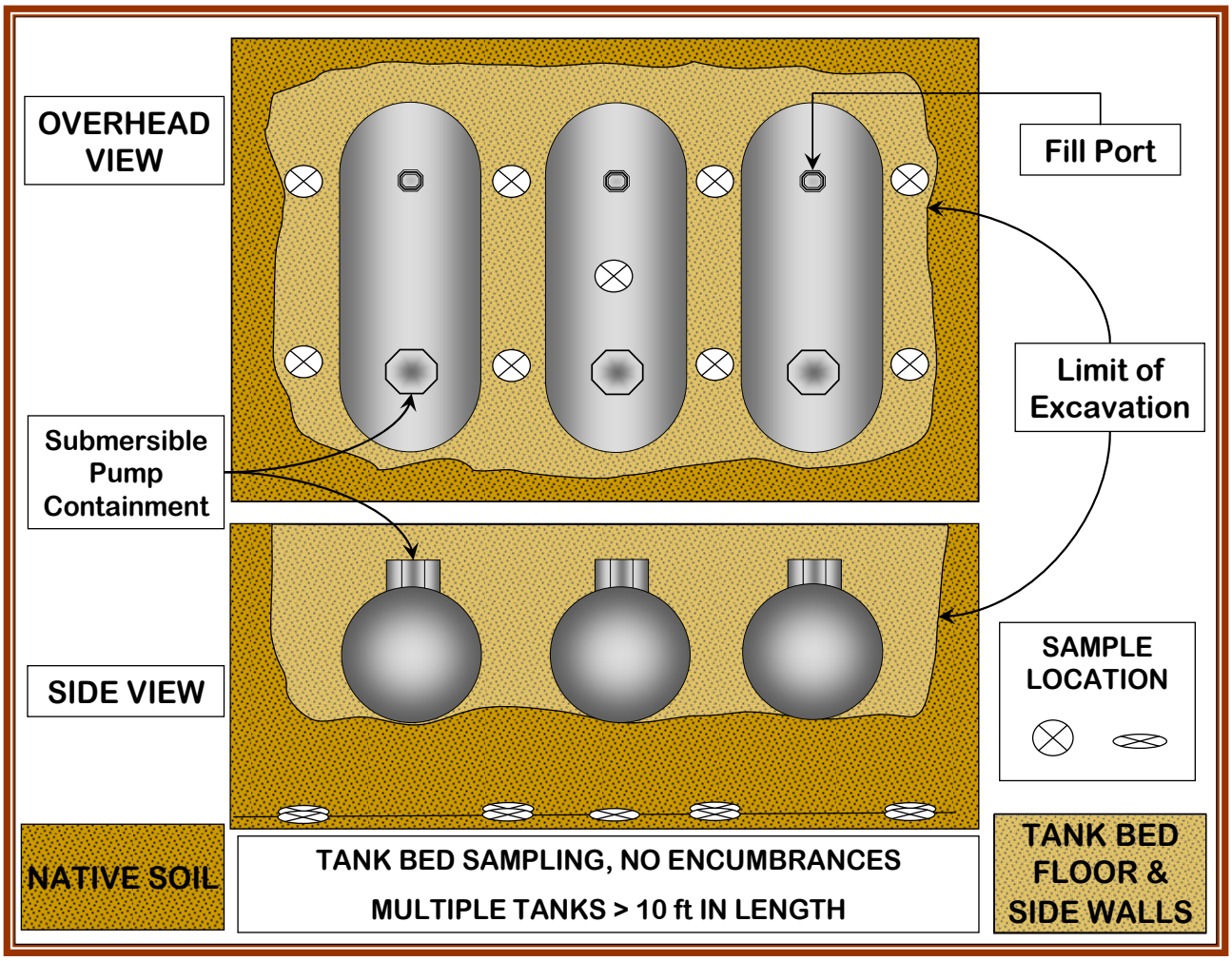

OVERHEAD VIEW
Submersible Pump Containment
Fill Port
Limit of Excavation
SIDE VIEW
SAMPLE LOCATION
NATIVE SOIL
TANK BED SAMPLING, NO ENCUMBRANCES
TANKS > 5 ft & ≤ 20 ft IN LENGTH
TANK BED FLOOR & SIDE WALLS


OVERHEAD VIEW
Submersible Pump Containment
Fill Port
Limit of Excavation
SIDE VIEW
SAMPLE LOCATION
NATIVE SOIL
TANK BED SAMPLING, NO ENCUMBRANCES
TANKS > 20 ft IN LENGTH
TANK BED FLOOR & SIDE WALLS

Multiple Tanks

Length of Tank	Minimum Number of Soil Samples Per Tank Bed
≤ 10 feet	**6** samples: 2 between each tank – 1 in line with the submersible pump containment and 1 in line with the fill port; 1 off the side of each of the outermost tanks – mid-region of the tank.
>10 feet	**9** samples: 2 off the side of the outermost tanks – 1 in line with the submersible pump containment and 1 in line with the fill port; 2 between each tank – 1 in line with the submersible pump containment, 1 in line with the fill port and 1 beneath the center of the innermost tank(s).





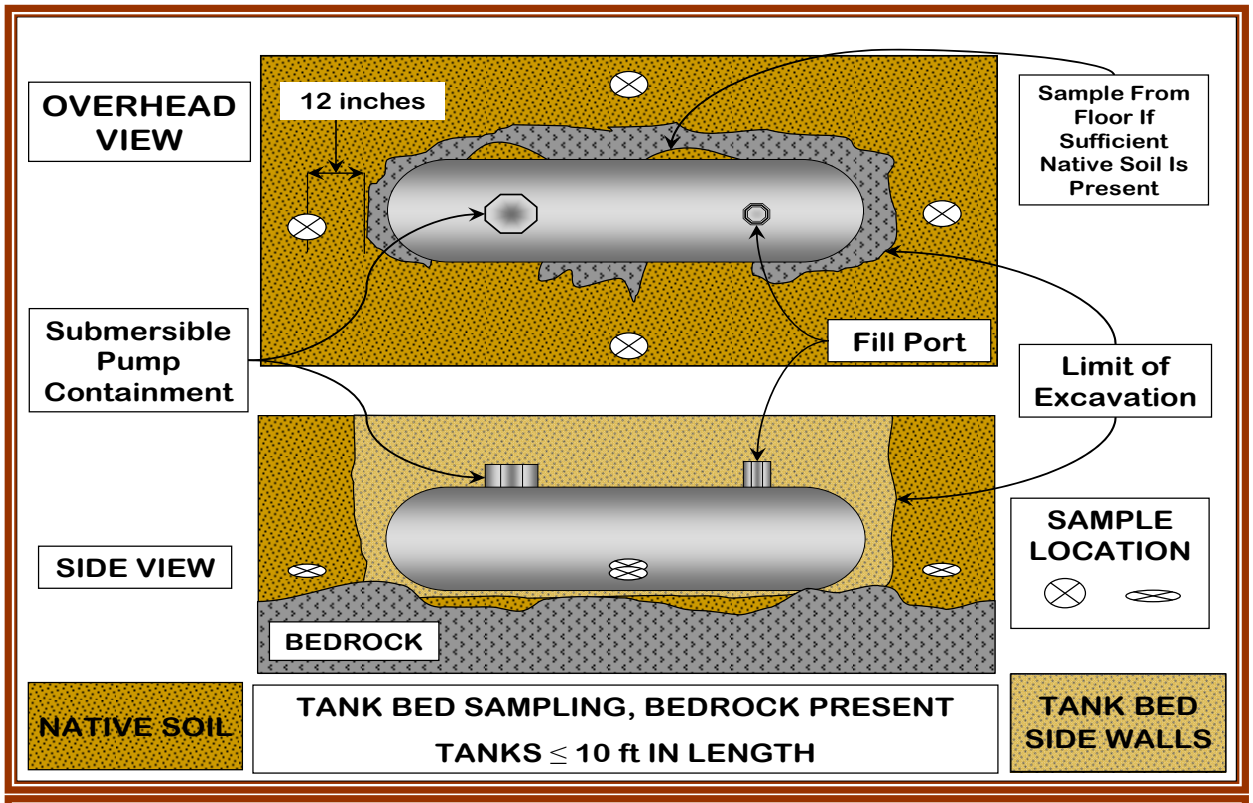
2. BEDROCK PRESENT

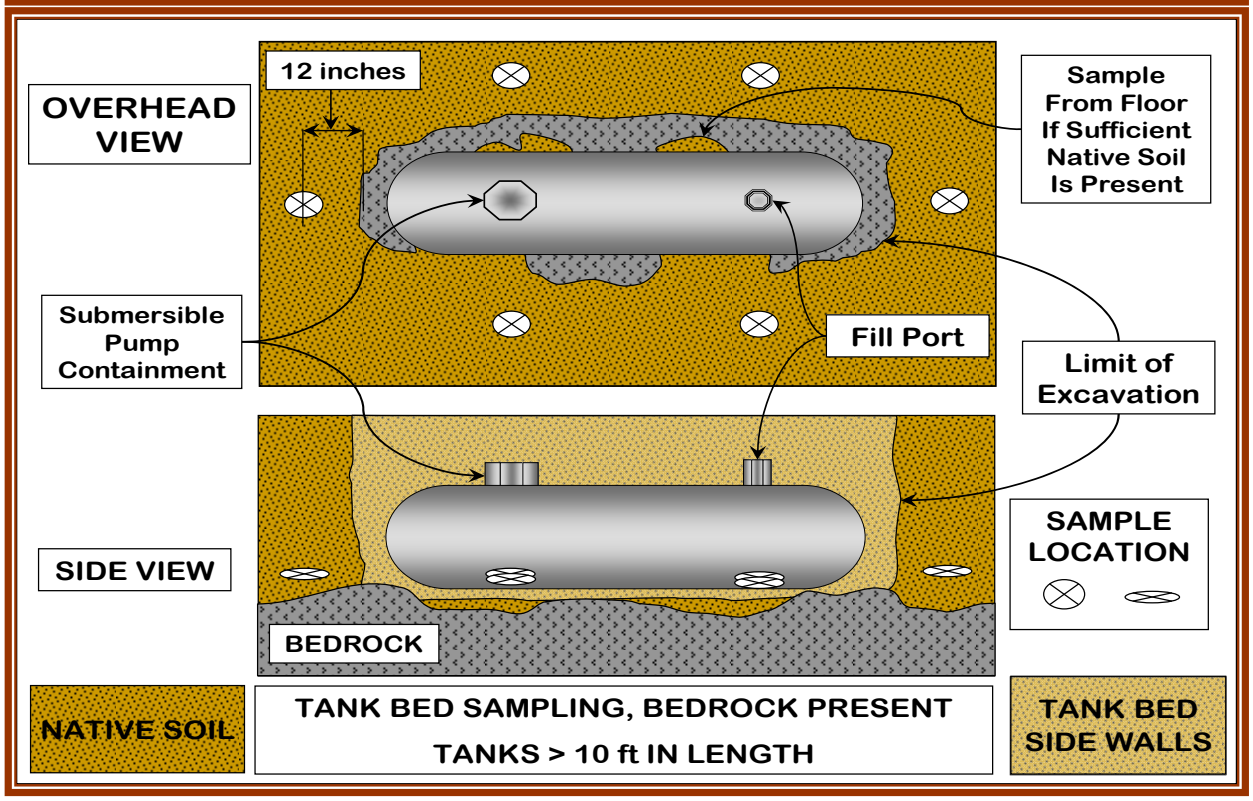
Every effort should be made to collect samples from native material (soil and/or weathered bedrock) from both the floor and walls of the tank bed. However, if the floor of the tank bed consists only of competent bedrock (i.e., there is no native material on top of the competent bedrock) then all samples will have to be collected from the sidewalls of the tank bed. These samples must be collected from a point that is at least 12” into the sidewall and as close to the soil-bedrock interface as possible.

If the exposed bedrock is weathered and friable or if there is some native soil on top of the bedrock, first try to obtain samples of native material from both the floor and walls of the tank bed. Include in the TSSA report the depth below ground surface from which samples were collected, and describe the composition of the sample and condition of the bedrock (geology, degree and extent of weathering, and the number, orientation, width and length of any bedrock fractures that are present).

Single Tank

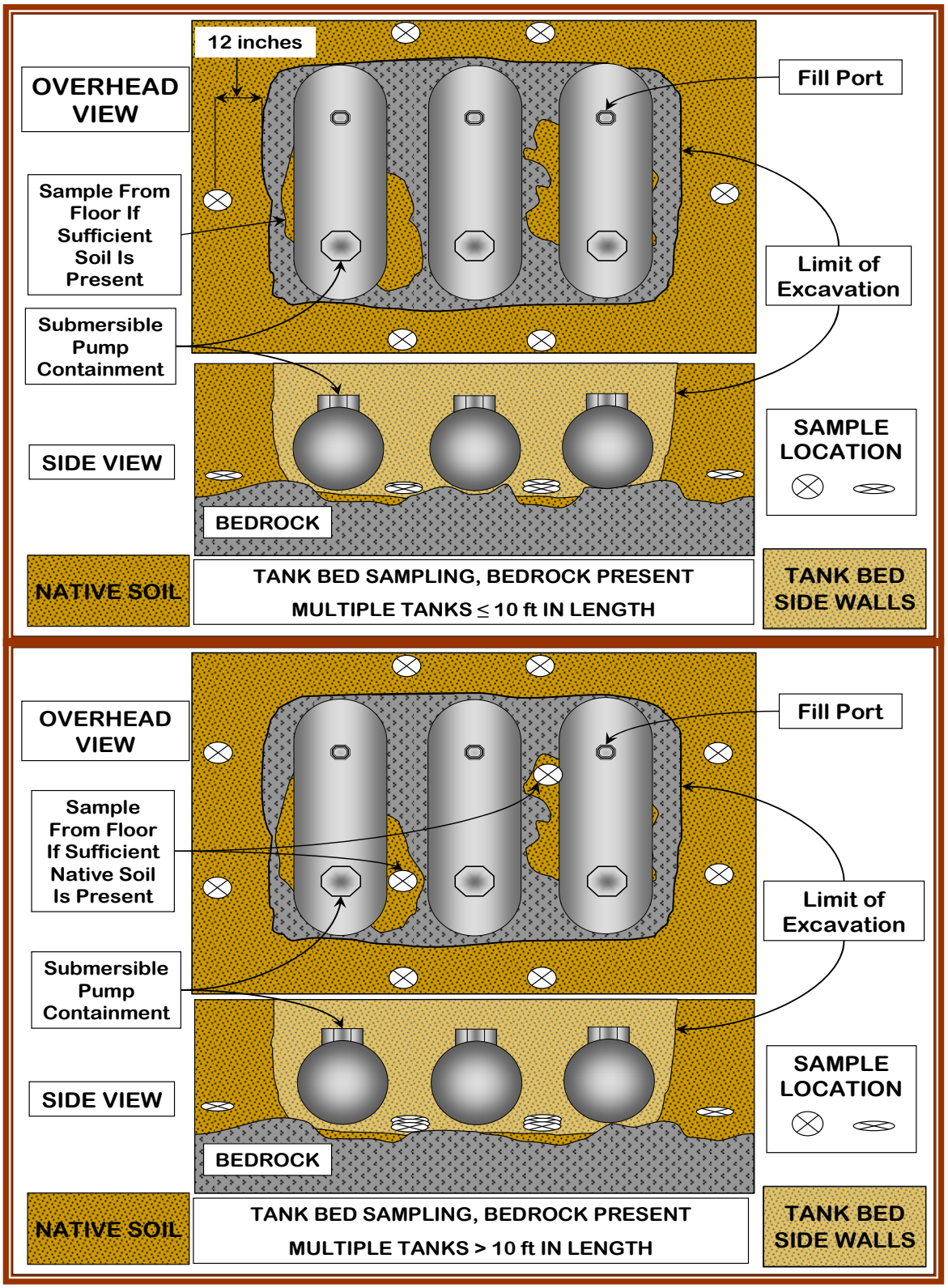
Length of Tank	Minimum Number of Soil Samples Per Tank
≤ 10 feet	4 samples: 1 at end of each tank and 1 off each side of the tank – mid-region.
>10 feet	6 samples: 2 off each side of the tank – 1 in line with the submersible pump containment and 1 in line with the fill port; and 1 off each end of the tank. (If the fill port is within 3 feet of the end of the tank, then collect the 2 side fill port samples from the mid-region of the tank.)





Multiple Tanks

Length of Tank	Minimum Number of Soil Samples Per Tank Bed
≤ 10 feet	6 samples: 1 off the side of each of the outermost tanks – mid-region of the tank and 2 in line with each gap between tanks.
>10 feet	10 samples: 2 off the side of each of the outermost tanks – 1 in line with the pump containment and 1 in line with the fill port; 3 in the gap between each set of tanks – 1 mid-region and 1 at each end of the tanks. (If the fill port is within 3 feet of the end of the tank, then collect the side fill port samples from the mid-region of the tank.)

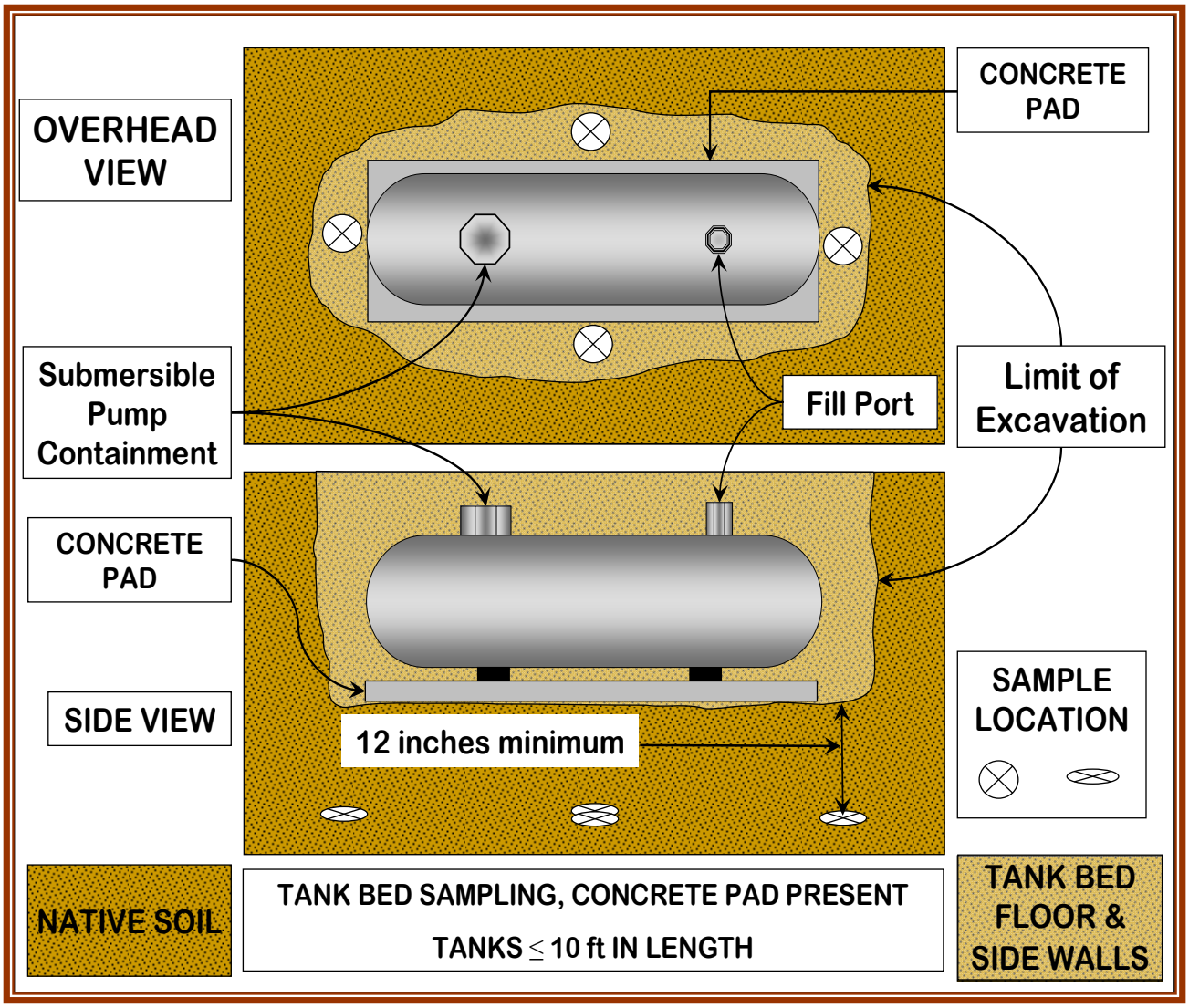


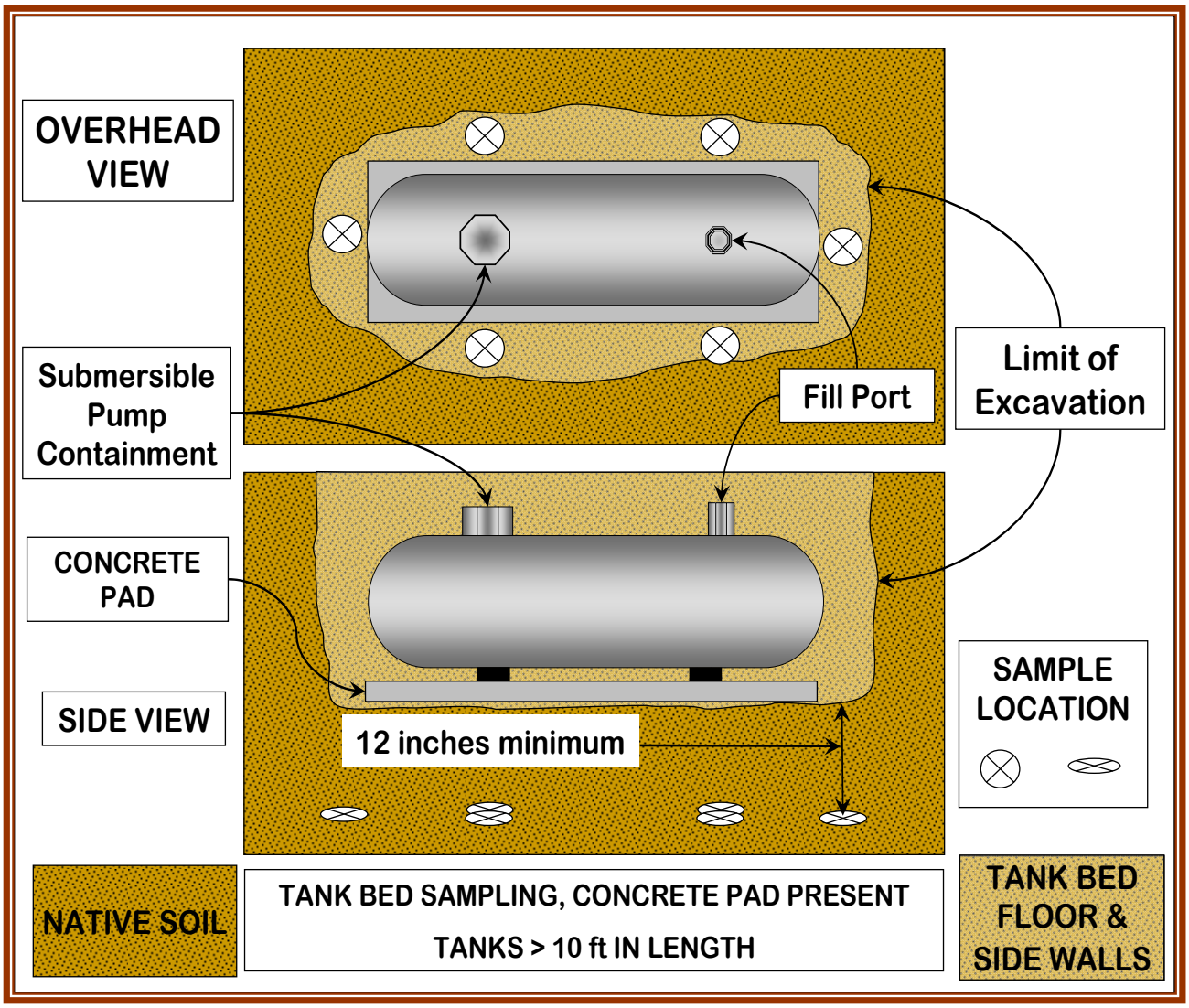
3. CONCRETE SLABS OR "DEADMAN" ANCHORS ARE PRESENT

Samples of native soils are to be collected at the edges of the slab or anchor, at locations based on the number and length of the tanks (see diagrams below).

Single Tank

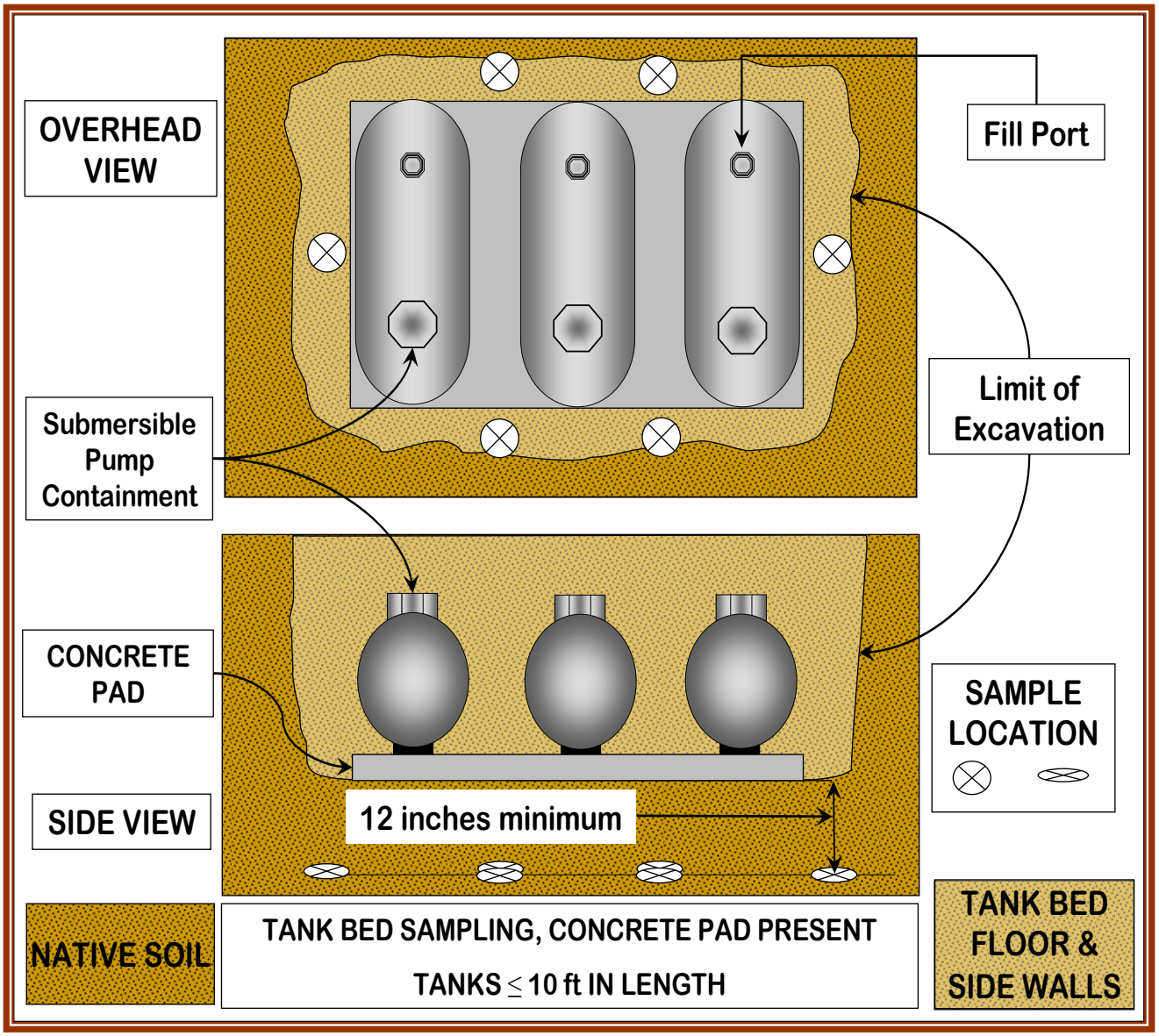
Length of Tank	Minimum Number of Soil Samples Per Tank
≤ 10 feet	**4** samples: 1 at end of each tank and 1 off each side of tank – mid-region..
>10 feet	**6** samples: 2 off each side of the tank – 1 in line with the submersible pump containment and 1 in line with the fill port; and 1 off each end of the tank. (If the fill port is within 3 feet of the end of the tank, then collect the 2 side fill port samples from the mid-region of the tank.)

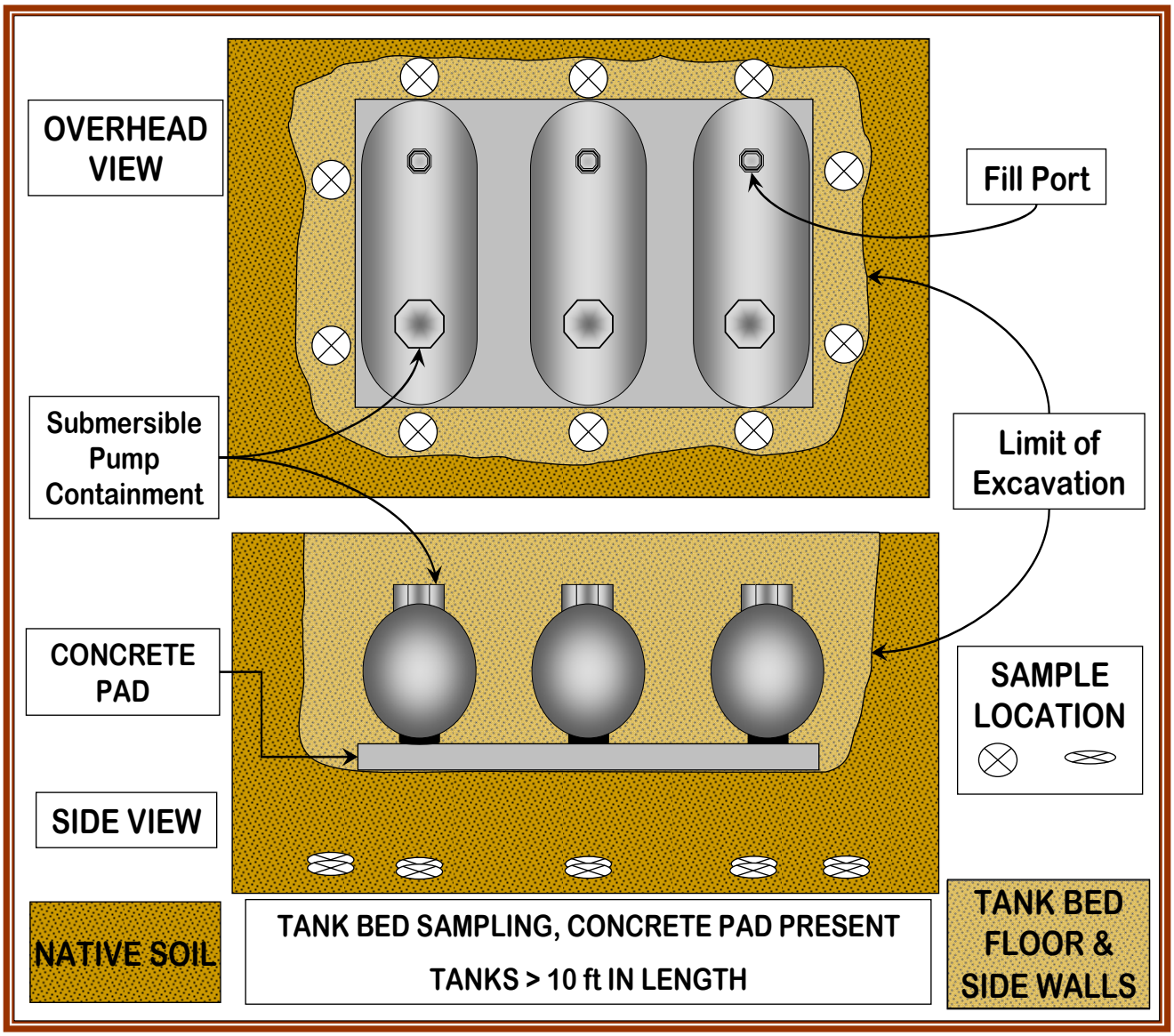



OVERHEAD VIEW
Submersible Pump Containment
CONCRETE PAD
SIDE VIEW
Fill Port
Limit of Excavation
12 inches minimum
SAMPLE LOCATION
NATIVE SOIL
TANK BED SAMPLING, CONCRETE PAD PRESENT
TANKS > 10 ft IN LENGTH
TANK BED FLOOR & SIDE WALLS

Multiple Tanks

Length of Tank	Minimum Number of Soil Samples Per Tank Bed
≤ 10 feet	**6** samples: 1 at end of each set of tanks in line with the gap between each set of tanks; and 1 off the side of each of the outermost tanks – mid-region of the tank.
>10 feet	**10** samples: 2 off the side of the outermost tanks – 1 in line with the submersible pump containment and 1 in line with the fill port; and 1 at the end of each tank. (If the fill port is within 3 feet of the end of the tank, then collect the side fill port samples from the mid-region of the tank.)



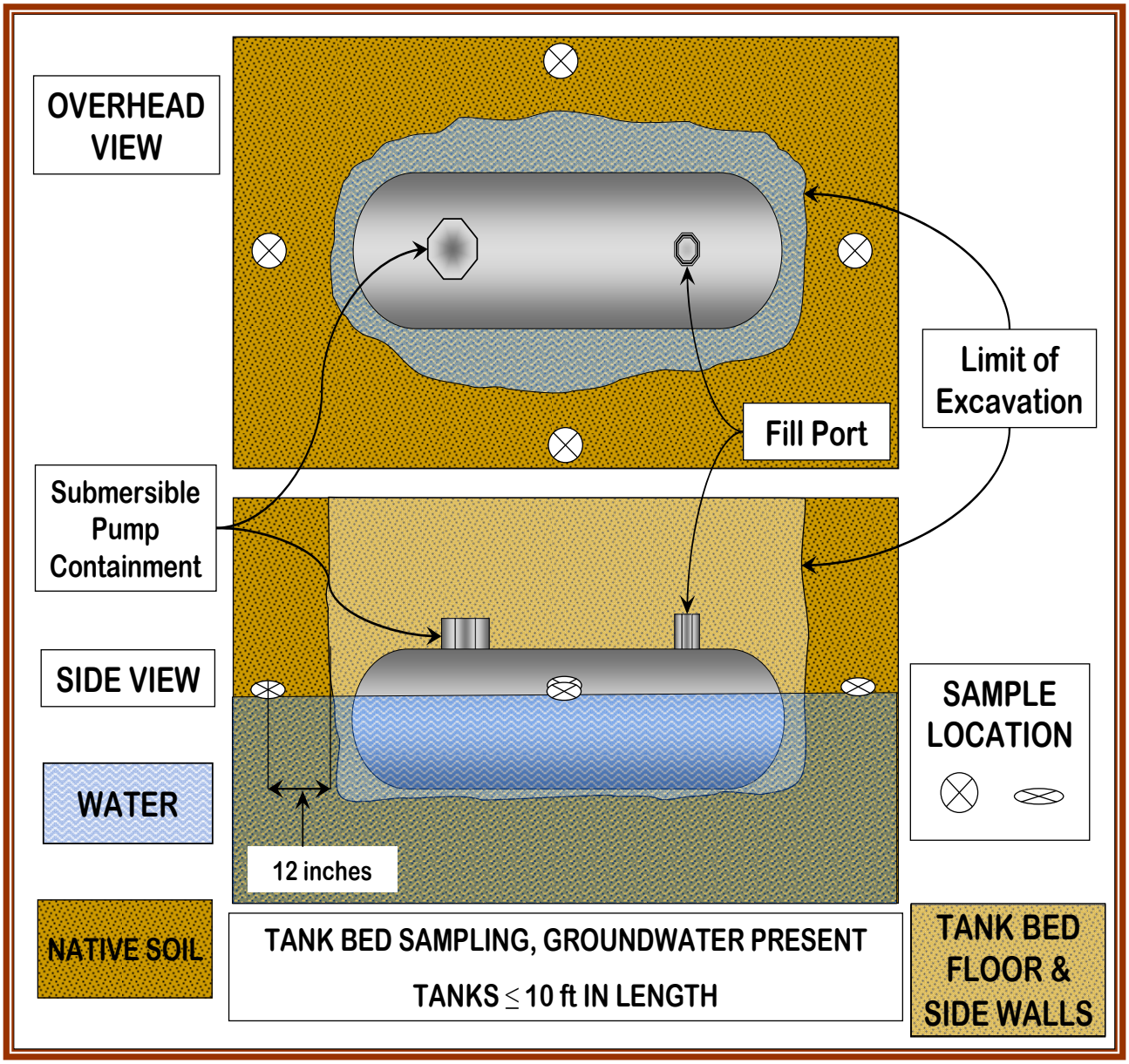

OVERHEAD VIEW
Fill Port
Submersible Pump Containment
Limit of Excavation
CONCRETE PAD
SAMPLE LOCATION
SIDE VIEW
NATIVE SOIL
TANK BED SAMPLING, CONCRETE PAD PRESENT
TANKS > 10 ft IN LENGTH
TANK BED FLOOR & SIDE WALLS

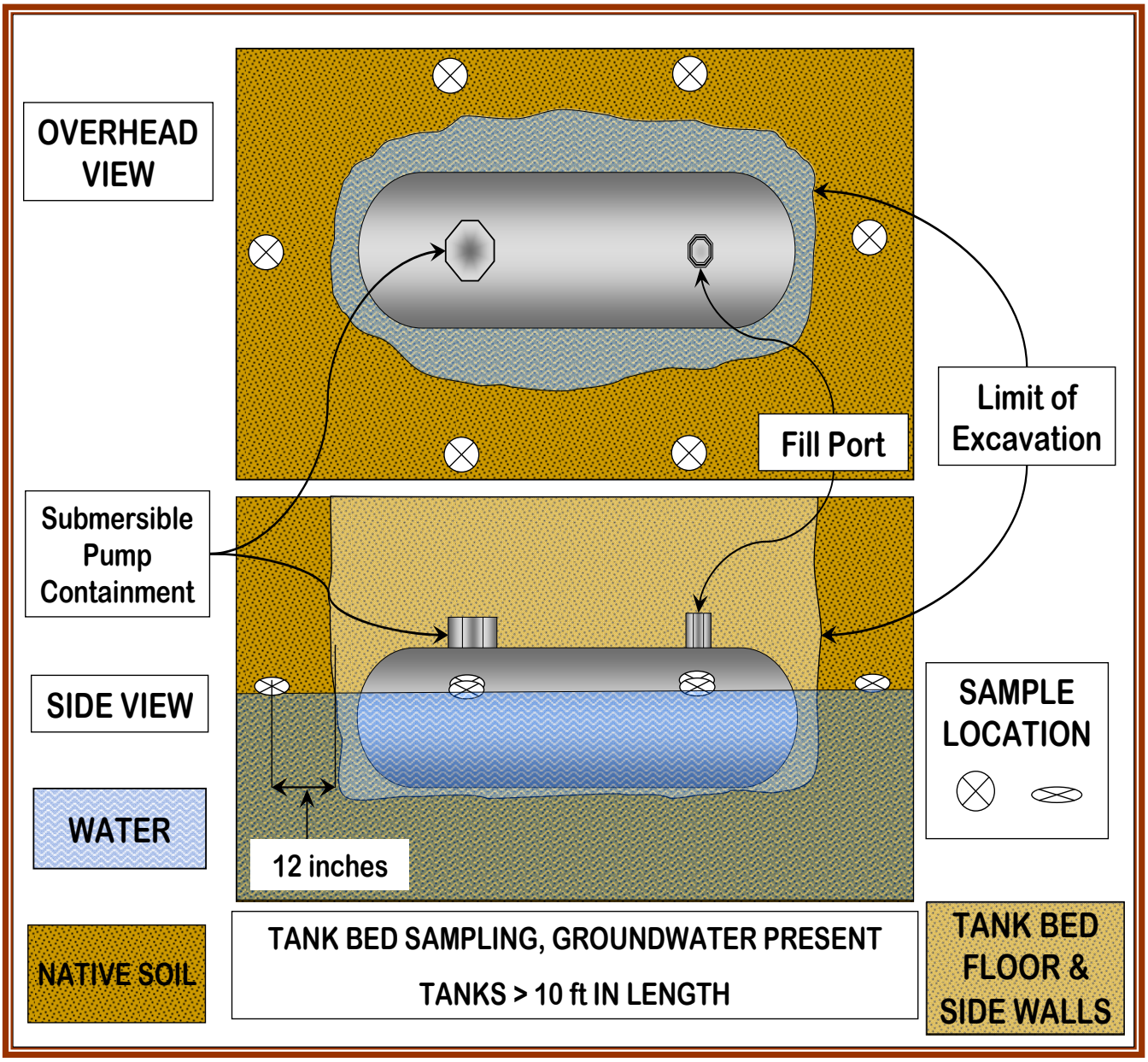
4. **GROUNDWATER IS PRESENT**

If water is present in the tank bed, collect soil samples from immediately above the soil-water interface, 1 foot into the sidewall, in numbers according to the diagrams below. Note in the TSSA report the depth below ground surface from which the sidewall samples were collected.

Single Tank

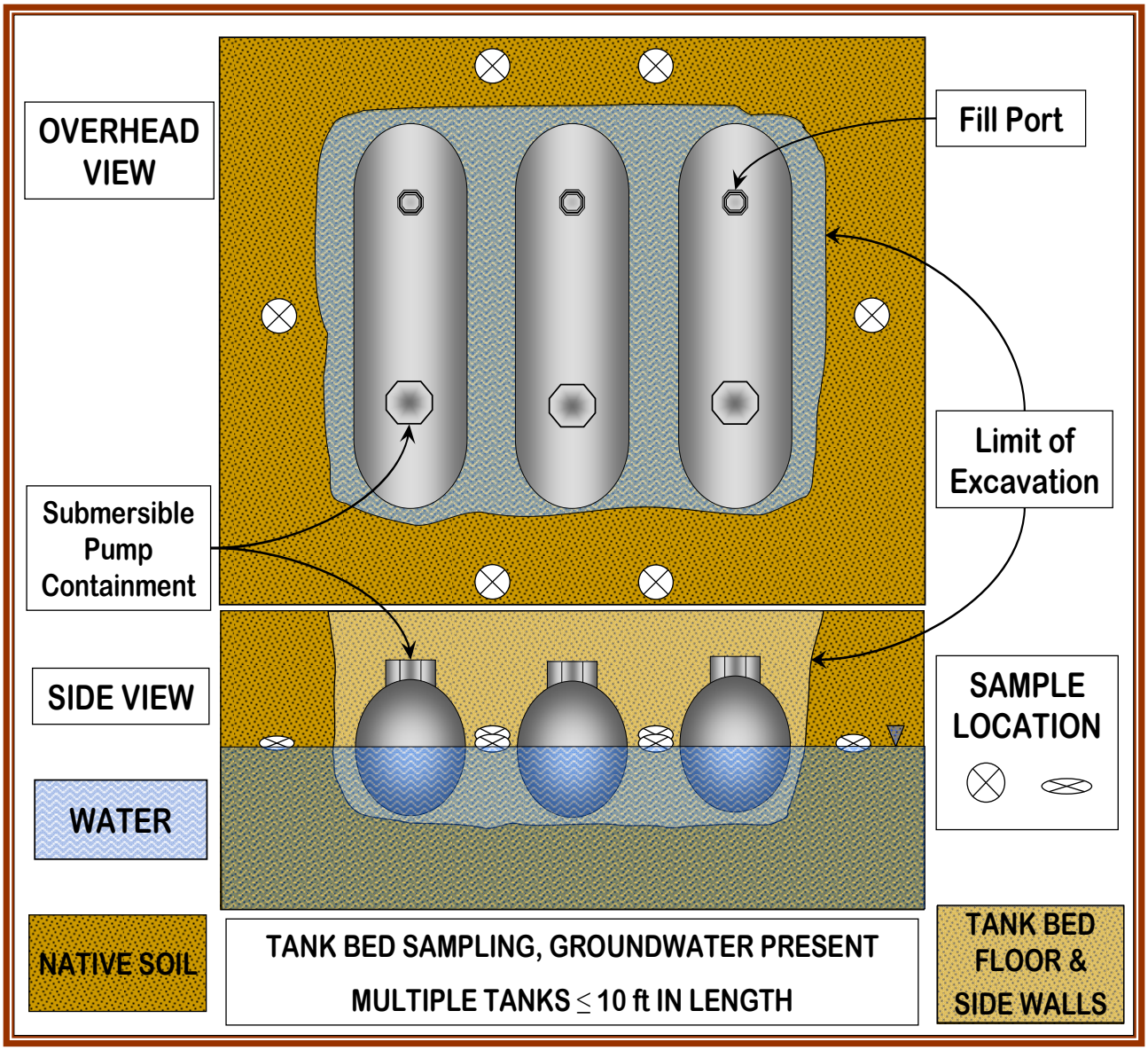
Length of Tank	Minimum Number of Soil Samples Per Tank
≤ 10 feet	4 samples, at the soil-water interface: 1 at end of each tank and 1 on each side of tank, mid-region.
>10 feet	6 samples, at the soil-water interface: 1 at each end of tank and 2 on each side of tank – 1 in line with the fill port and 1 in line with submersible pump containment. (If the fill port is within 3 feet of the end of the tank, then collect the 2 side fill port samples from the mid-region of the tank.)

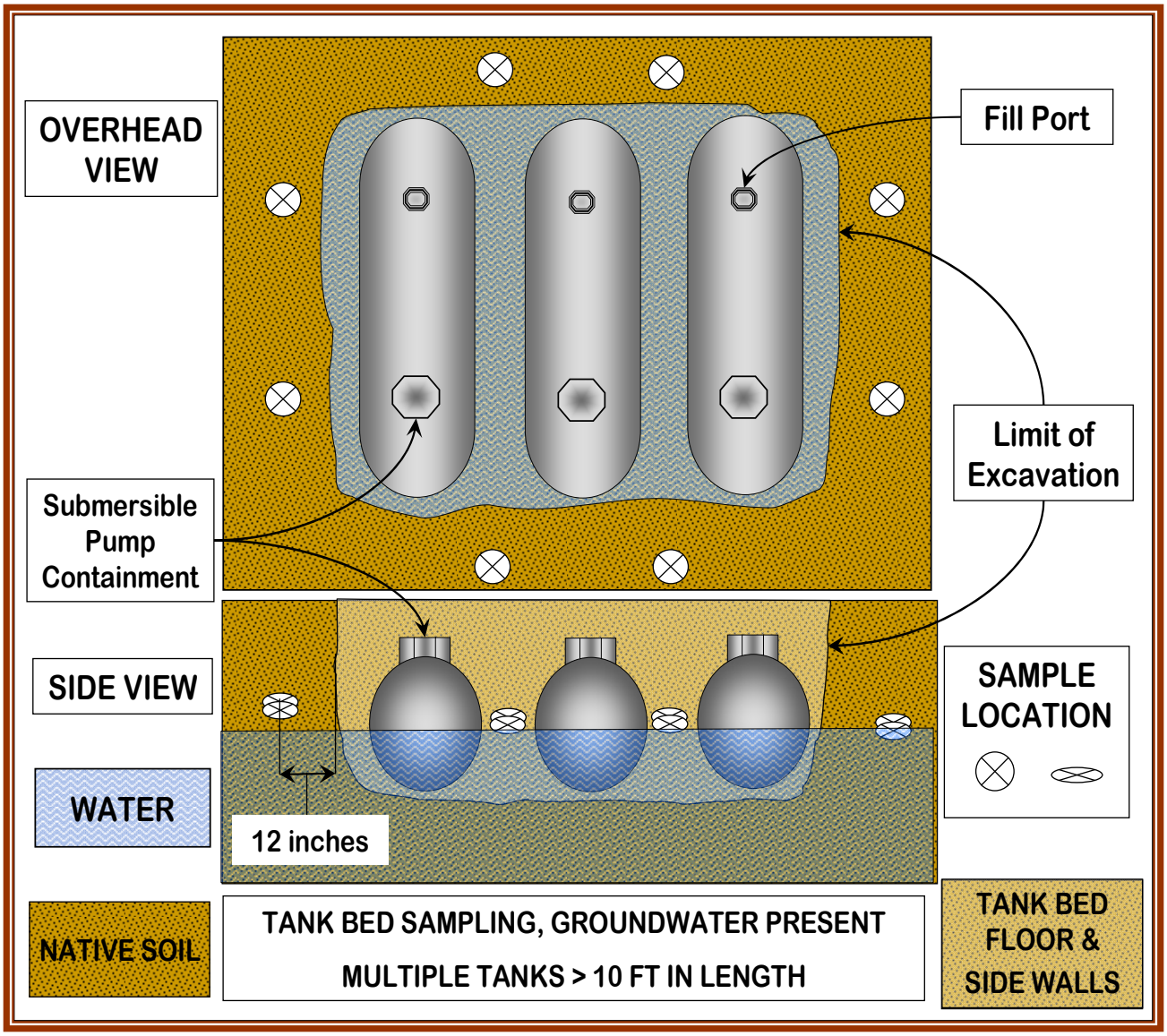



OVERHEAD VIEW
Fill Port
Limit of Excavation
Submersible Pump Containment
SIDE VIEW
SAMPLE LOCATION
WATER
12 inches
NATIVE SOIL
TANK BED SAMPLING, GROUNDWATER PRESENT
TANKS > 10 ft IN LENGTH
TANK BED FLOOR & SIDE WALLS

Multiple Tanks

Length of Tank	Minimum Number of Soil Samples Per Tank Bed
≤ 10 feet	**6** samples, at the soil-water interface: 1 in the gap between each set of tanks at the end of each tank and 1 off the side of each of the outermost tanks – mid-region of the tank.
>10 feet	**8** samples, at the soil-water interface: 1 in the gap between each set of tanks at the end of each tank, and 2 on each side of each of the outermost tanks – 1 in line with the fill port and 1 in line with the submersible pump containment. (If the fill port is within 3 feet of the end of the tank, then collect the 2 side fill port samples from the mid-region of the tank.)



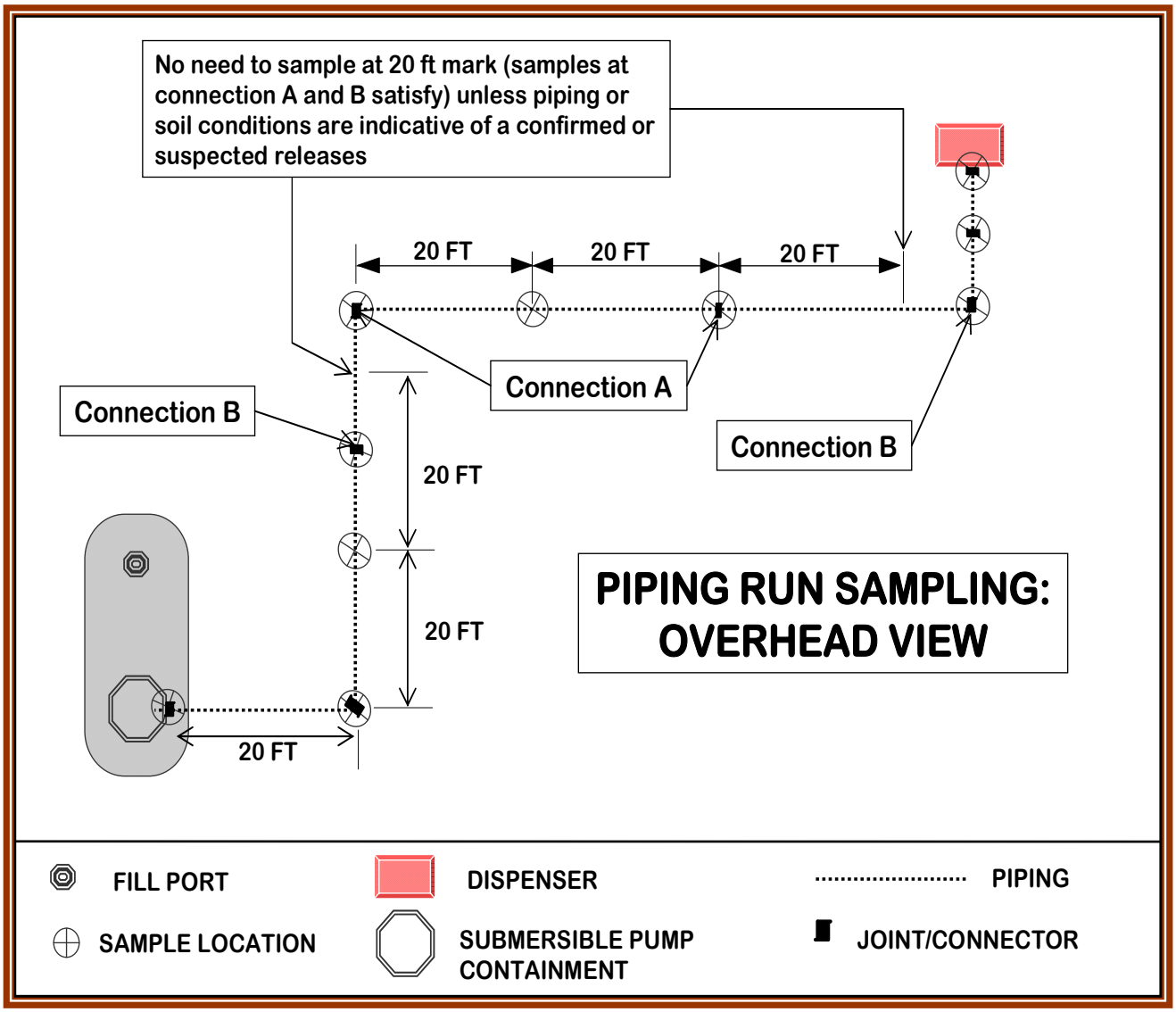


5. PIPING

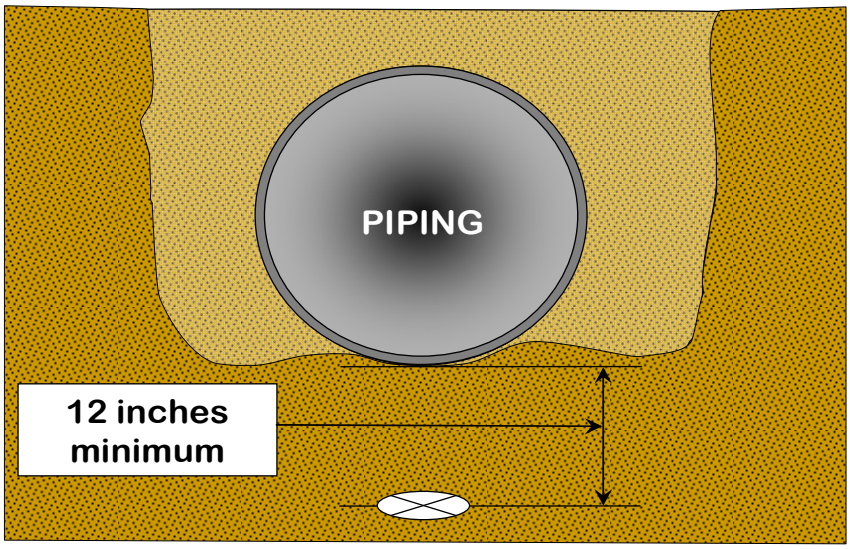
Studies from various sources, including the EPA, have shown that leaks from piping are the second-most common UST system leak source. Therefore, the Department strongly recommends the use of as-built drawings, remote sensing techniques, or excavation to locate all piping prior to initiating sampling. Completely expose the piping to better see where joints, bends, connectors and areas of obvious contamination are located. When performing an UST system closure, all piping must be either removed from the ground or properly closed in-place (requires approval). Collect grab samples of native soil from beneath the piping, approximately 1 foot below the base of the trench floor. Locations such as at elbows (where the piping changes direction), connectors, joints, any corrosion holes or other evidence of potential contamination must be targeted for sampling.

In those cases where none of the aforementioned sampling locations exist along a piping run, at least 1 native soil sample should be collected for every 20 feet of piping. For an assessment associated with a repair, sampling is typically needed only in the vicinity of the repair, unless there is evidence that suggests the impact of a release extends beyond the immediate vicinity of the repair.

***Note**: If the dispenser(s) are located over the tanks, and there is no remote fill port, then dispenser samples will satisfy piping run sample requirements. If a piping run contains more than one product line and the distance between two adjacent lines is < or = to 5 feet, only one (1) sample need be collected from between the lines. Samples should be collected every 20 linear feet if there is no obvious contamination. The following diagrams show the locations of the required piping run samples.*



CROSS SECTION: PIPING RUN SAMPLING

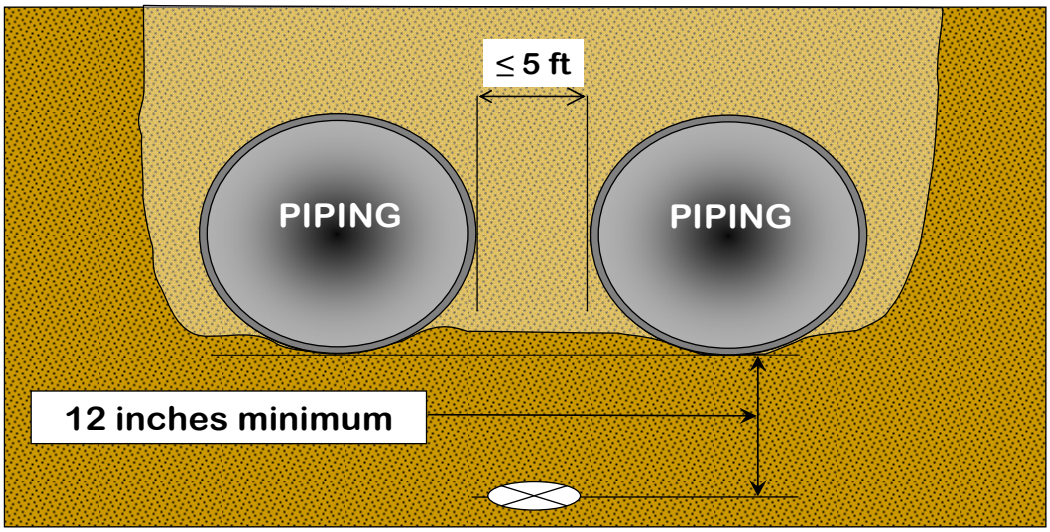


NATIVE SOIL

SAMPLE LOCATION

PIPING RUN

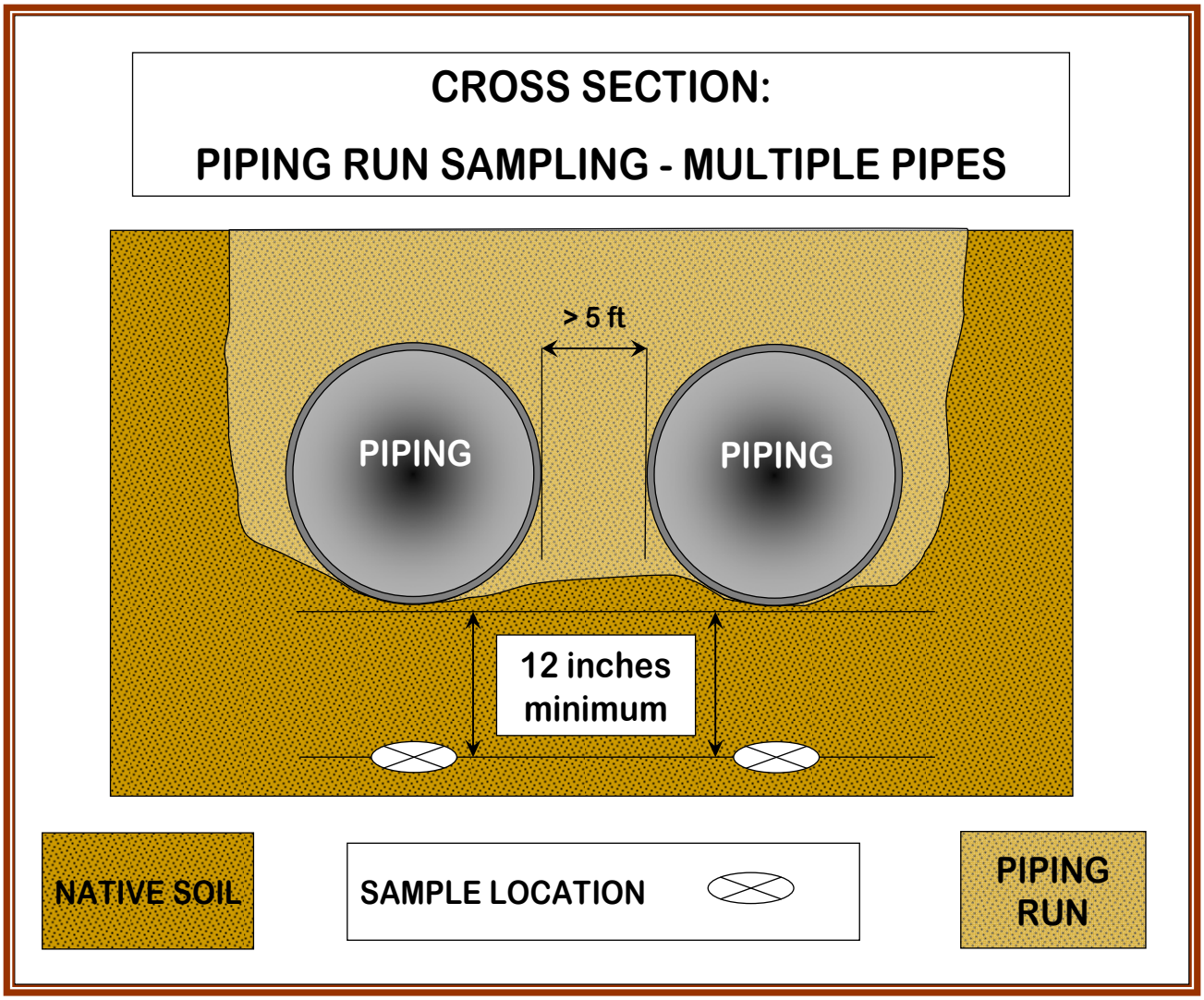
CROSS SECTION: PIPING RUN SAMPLING - MULTIPLE PIPES



NATIVE SOIL

SAMPLE LOCATION

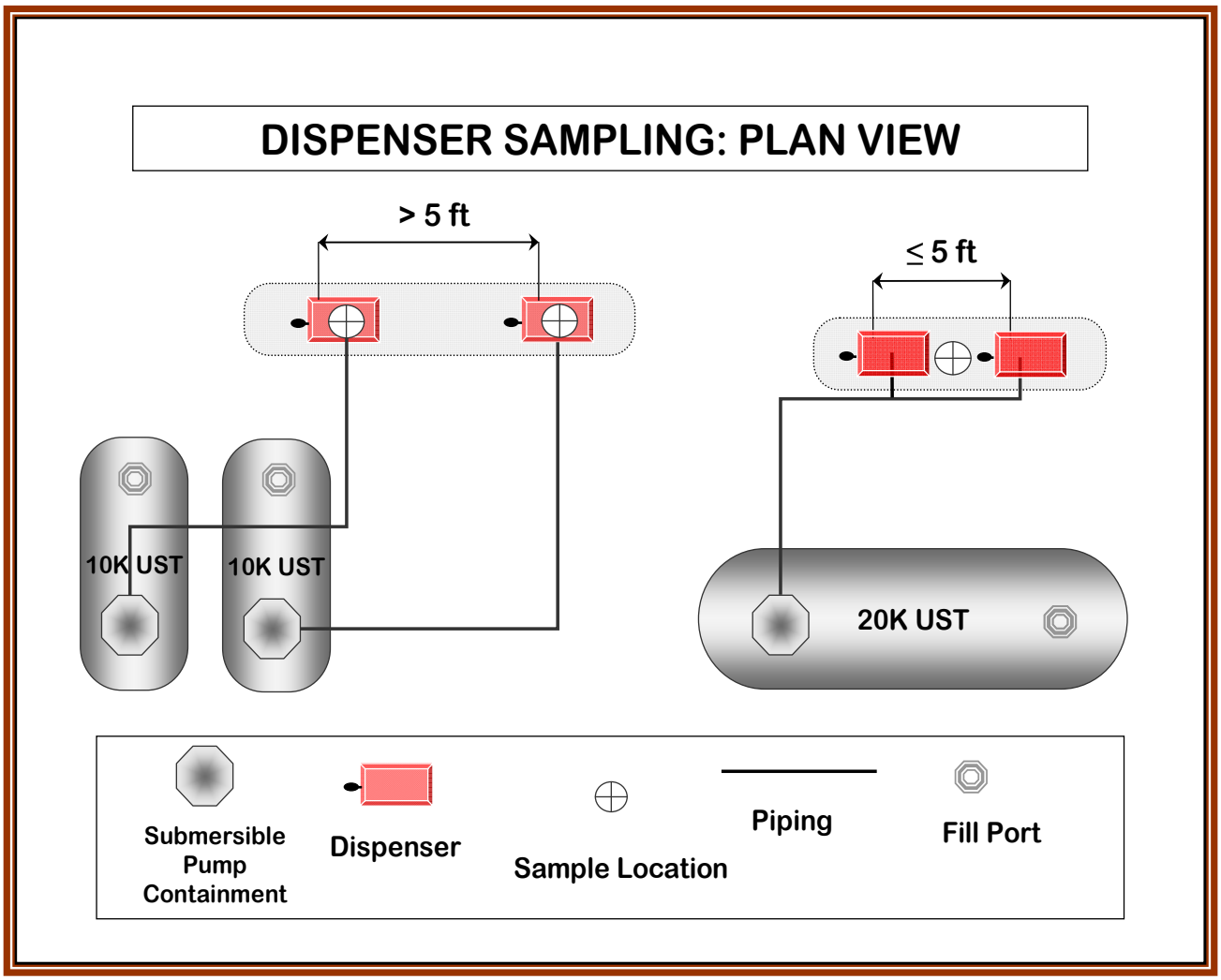
PIPING RUN

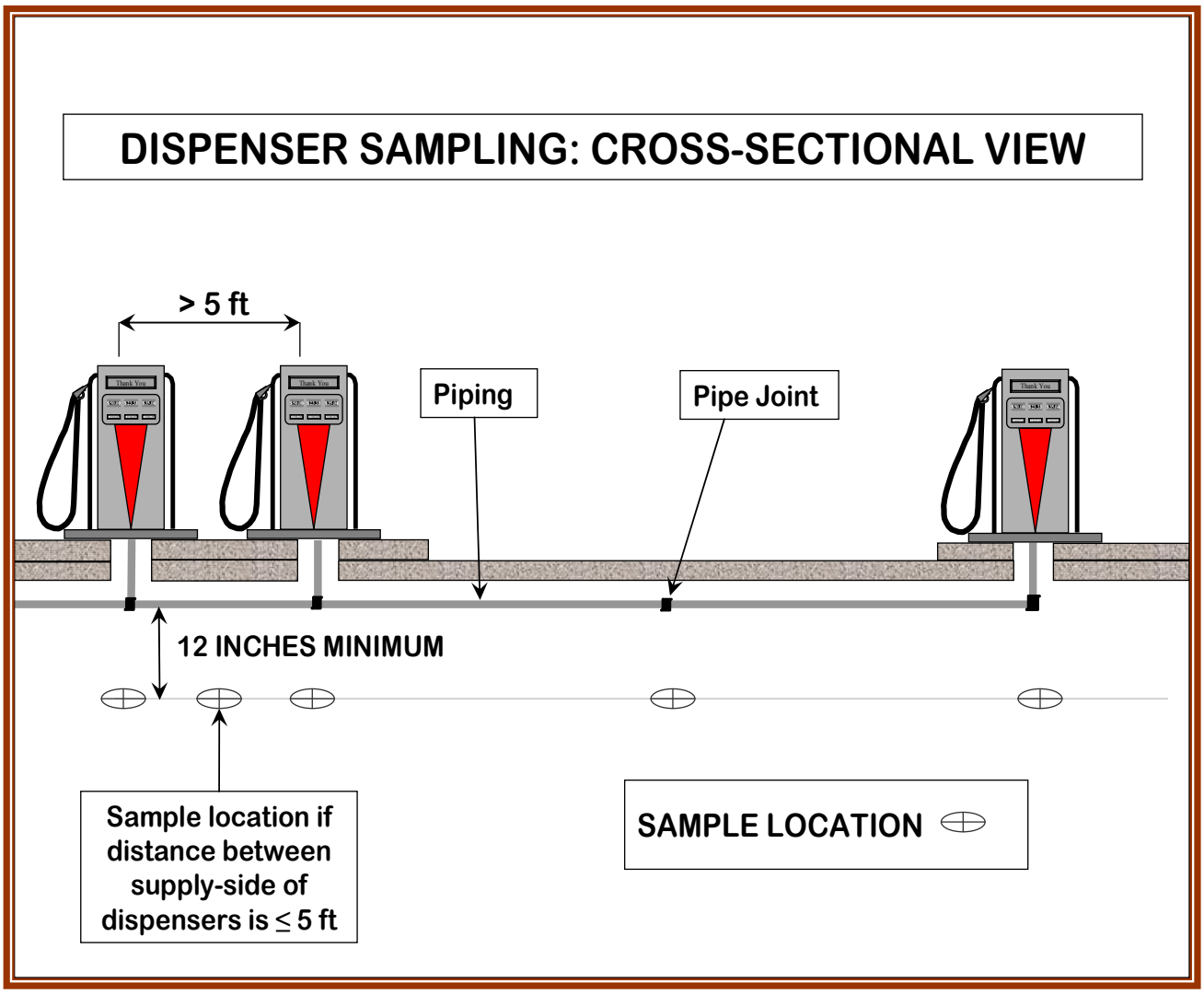

CROSS SECTION:
PIPING RUN SAMPLING - MULTIPLE PIPES
> 5 ft
PIPING
PIPING
12 inches minimum
NATIVE SOIL
SAMPLE LOCATION
PIPING RUN

6. DISPENSERS

Take 1 discrete grab sample per dispenser. Collect samples of native soil from beneath the dispenser at a depth of at least 12” below the dispenser supply piping. If two dispensers are located within 5 feet of each other as measured from supply-side to supply-side, then only one (1) boring, advanced exactly midway between the supply-sides of the dispensers will satisfy dispenser sampling requirements for both dispensers (Five Foot Rule).

Note: If the dispenser(s) are located directly over the tanks, and there is no remote fill port, then dispenser samples will satisfy piping run sample requirements as well.





7. SUMPS AND SPILL BUCKETS

The objectives of this section are to explain when a release assessment should or should not be initiated for sumps and spill buckets. *SPS 310.570 Conditions indicating a release; SPS 310.575 Tank system integrity assessment and SPS 310.580 Tank system site assessment,* all pose conditions and methodologies for determining whether or not a leak has become a release. The manner in which sump and spill bucket integrity issues, and ultimately compliance, are determined can set the course of action down one of a number of paths. In relation to tank or dispenser sump and spill bucket integrity the point of code reference is SPS 310.230(10) Maintenance. (10) System

maintenance. (a) All system equipment and components shall be maintained to function to the manufacturer's original specifications and shall be maintained to be leak-free.

As an example, neither the sump boot nor the spill bucket in the adjacent photos are being maintained to mfg's specifications and subsequently are not being maintained "leak free. "Did a release occur?

Sump Boot

Spill Bucket

Factors that determine the extent of a sump or spill bucket release investigation are:

- ✳ Is there evidence of a malfunction or failure of the system leak detection equipment?
    1. Is there evidence that a leak or release occurred during or as a consequence of the malfunction or failure?
- ✳ Is there evidence that liquid reached the level of the sump breach?
    1. Is there visual observation of liquid level or staining?
    2. Is there peripheral or off-site evidence such as vapors or sheen on water?
- ✳ Is there evidence that the liquid is or contained a regulated product?
    1. Is there residue, visual coloration or staining associated with the regulated product in the system?

If all of the sub-bullets above are 'No' there is no need to conduct a TSSA.

If any of the sub-bullets above are 'Yes', then there are two assessment options:

1. Treat the situation as a release and proceed with opening the sump or spill bucket to the ambient soil to assess the surrounding soil and/or perform TSSA soil testing; or
2. Conduct a tightness test on the sump or spill bucket *prior to the repair*.
    - If the test determines the sump or spill bucket is tight the release investigation is satisfied, i.e. there is no need for TSSA sampling
    - If the test determines that the sump or spill bucket is not tight, then proceed to performing TSSA soil testing.

Soil Sampling Guidance for a Tank Top Sump and/or a Spill Bucket:

We will require that one soil sample be collected from each side of the tank adjacent to the submersible sump or spill bucket. These samples are to be collected at a depth below ground surface equivalent to 5 ft beneath the bottom of the tank or at the first sign of contamination, whichever occurs first. The soil probe location should be within five feet of the tank sidewall at its maximum diameter. Greater distances and/or sampling from only one side may be warranted due to obstructions such as piping, other tanks, electrical conduits, etc. In such cases, the reporting shall include clear documentation indicating the limitation(s).

In situations of high groundwater or perched water, samples are to be collected immediately above the top of water.

For situations with pea gravel backfilled tank basins, obtain a native soil sample from the bottom of the basin at the same locations indicated above (i.e., analytical results for pea gravel are not appropriate).

Soil Sampling Guidance for a Dispenser Sump:

Sampling is similar to the TSSA sampling for dispensers. If design plans are not available the pipe and electrical conduit entering the dispenser sump should give an indication of the pipe and conduit run outside the sump (i.e., determine how to avoid the runs when collecting a soil sample). Where the sump wall penetration is toward the side of an island, collect one sample on the side of the sump where the suspected breach has occurred at a depth of 5 ft below the level of the suspected breach in the sump, or at the first sign of contamination, whichever occurs first. When the sump wall penetration is toward the end of an island, collect one sample on each side of the sump adjacent to the sump wall penetration.

Release Reporting

A spill or release is required to be reported as described in the DNR web page at the following link: http://dnr.wi.gov/topic/spills/define.html The DNR has stated their position that: "In order for the spill to *not be reportable* it would have to be cleaned up immediately after the release, not after the discovery. So if there is a slow leak to the subsurface it is technically reportable whether it is less than 1 gallon or not."

Release Investigation Decision Making Examples:

In both the photos below staining indicates there has been some liquid in the sump previously. Both sumps are currently dry and staining is below the penetration. Because there is not strong evidence that liquid with petroleum reached the penetration holes a release investigation is not required.

In the two photos below liquid has reached the sump wall penetration. However, the liquid appears to be water that <u>is not</u> contaminated with petroleum, therefore *a release investigation is not required.*

<u>The "check box" test of release investigation applicability:</u>

<u>Example #1</u>

Is there evidence of a malfunction or failure of the system release detection equipment? ☐ YES ☒ NO

Is there evidence that a release occurred during or as a consequence of the malfunction or failure? ☐ YES ☒ NO

Is there evidence that liquid reached the level of the sump breach? ☒ YES ☐ NO

Is there visual observation of liquid level or staining? ☒ YES ☐ NO

Is there peripheral or off-site evidence such as vapors or sheen on water? ☐ YES ☒ NO

Is there evidence that the liquid contained a regulated product? ☐ YES ☒ NO

Is there residue, visual coloration or staining associated with a petroleum product? ☐ YES ☒ NO

A Release Investigation is Not Warranted

<u>Example #2</u>

☐ YES ☒ NO Is there evidence of a malfunction or failure of the system release detection equipment?

☐ YES ☒ NO Is there evidence that a release occurred during or as a consequence of the malfunction or failure?

☒ YES ☐ NO Is there evidence that liquid reached the level of the sump breach?

☒ YES ☐ NO Is there visual observation of liquid level or staining?

☐ YES ☒ NO Is there peripheral or off-site evidence such as vapors or a sheen on water?

☒ YES ☐ NO Is there evidence that the liquid contained a regulated product?

☒ YES ☐ NO Is there residue, visual coloration or staining associated with a petroleum product?

A Release Investigation is Warranted

D. SAMPLING LOCATIONS FOR TANK SYSTEM CLOSURE IN-PLACE OR CHANGE IN SERVICE TO STORE A NON-REGULATED SUBSTANCE

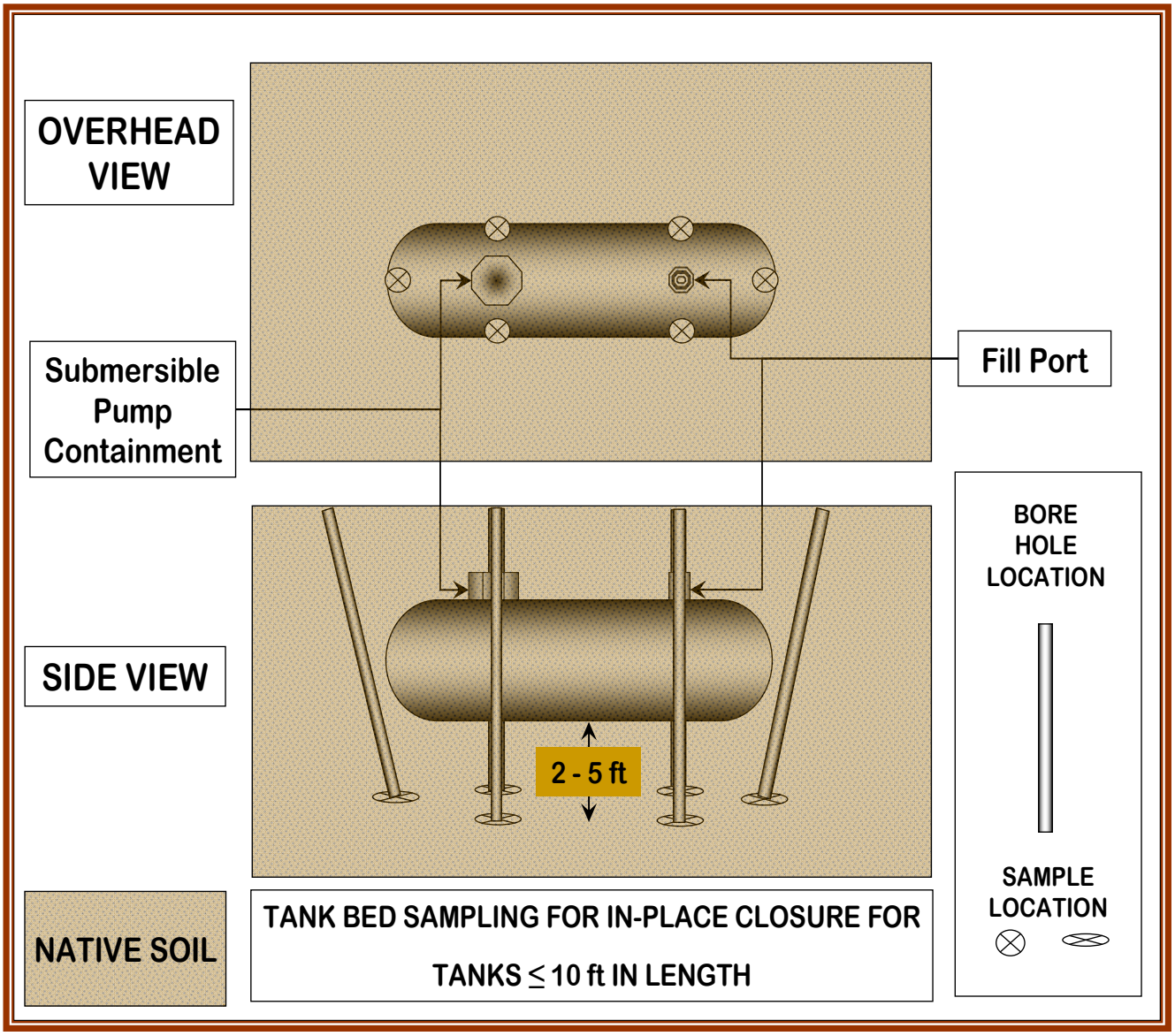
Since potentially contaminated soils cannot be seen as easily during either a closure in-place or a change in service, as compared to when a tank system is removed, the sampling requirements are more conservative. You must follow the steps given in this document unless special circumstances do not allow these steps. For those circumstances, an alternative sampling plan must be submitted to the Department for approval at least 15 days prior to commencing field activities.

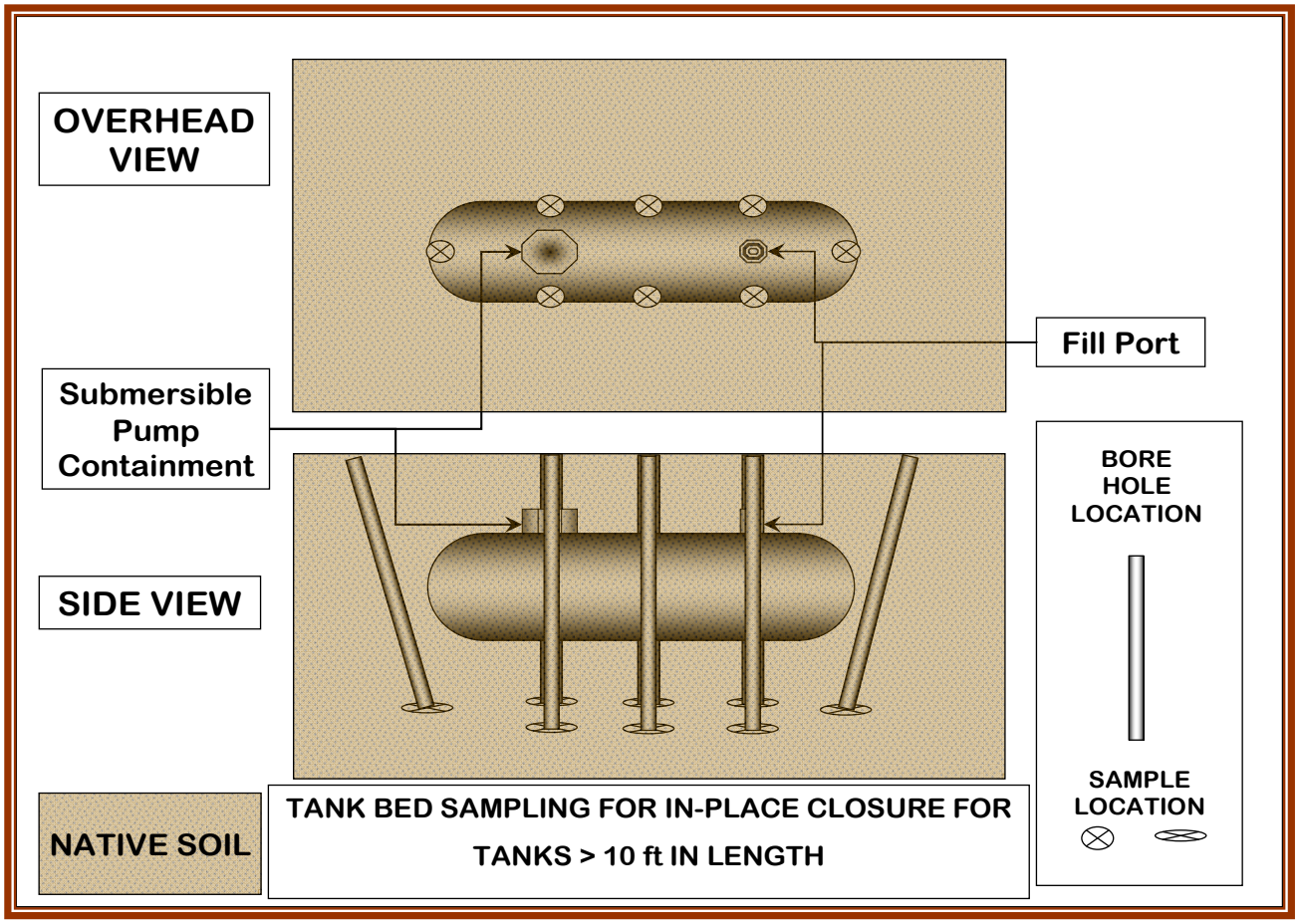
Tanks and piping closed in-place must be cleaned and filled with an inert, solid material, after receiving permission for the closure from the Department or an authorized agent. All tank and piping sludge removed during the cleaning process must be properly disposed of in accordance with all regulatory requirements (see Addendum 3).

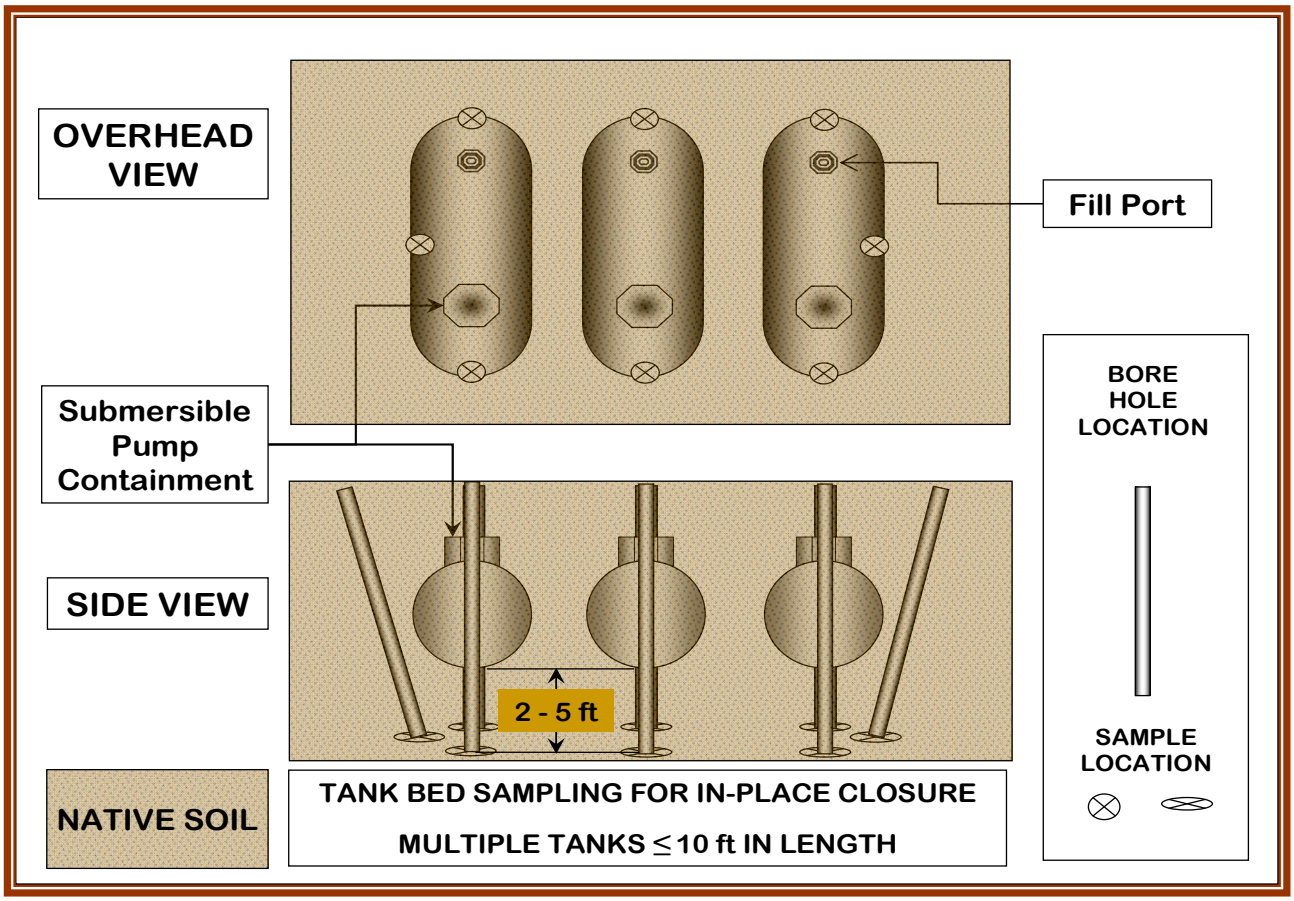
If a suspected or obvious release is encountered during a change in service to store a non-regulated substance, the same notification and sampling requirements that apply to permanent closure in-place of a tank system must be followed. Sampling must be conducted in the same manner as tank system closure in-place, and the interior of the tank must be properly cleaned. In addition, the Department must be notified of the change in service.

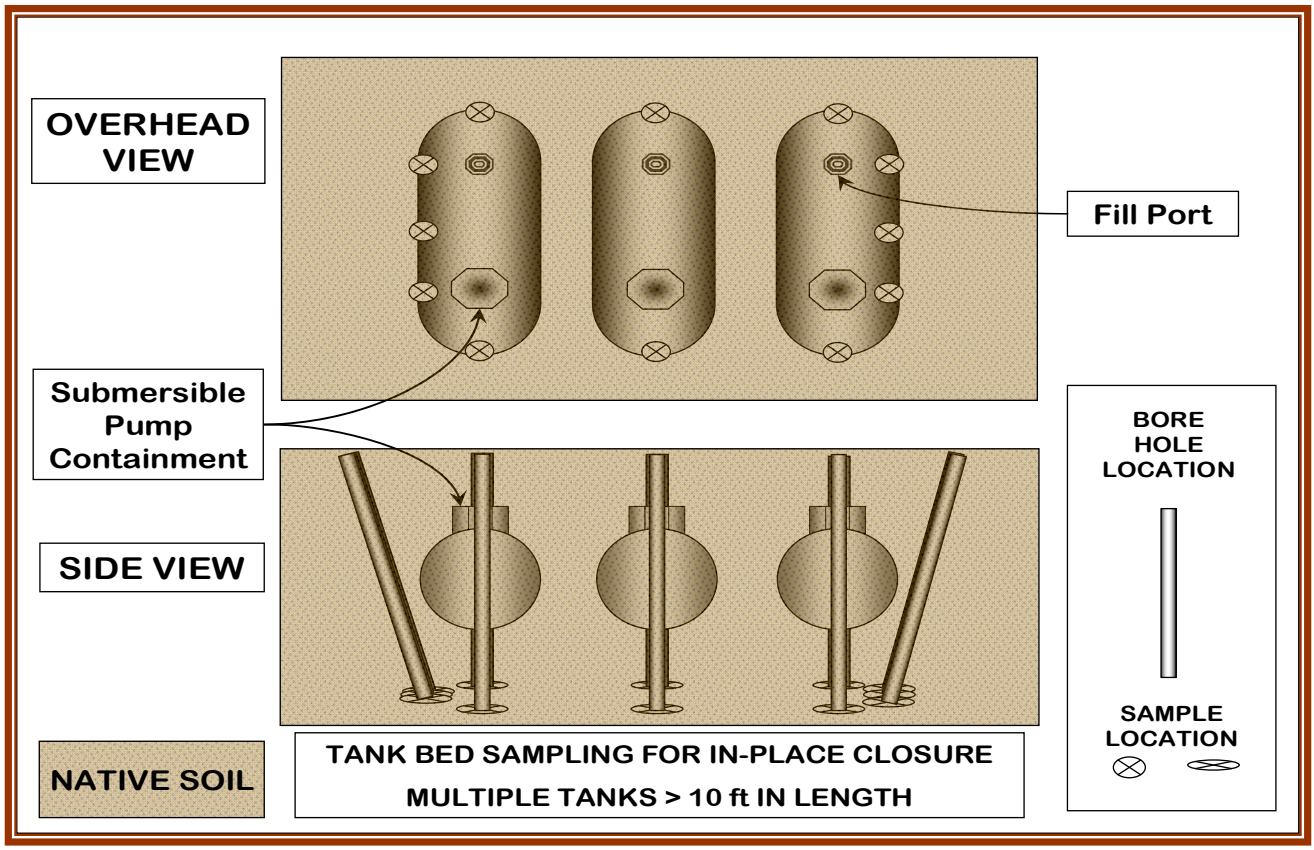
1. Tank Bed

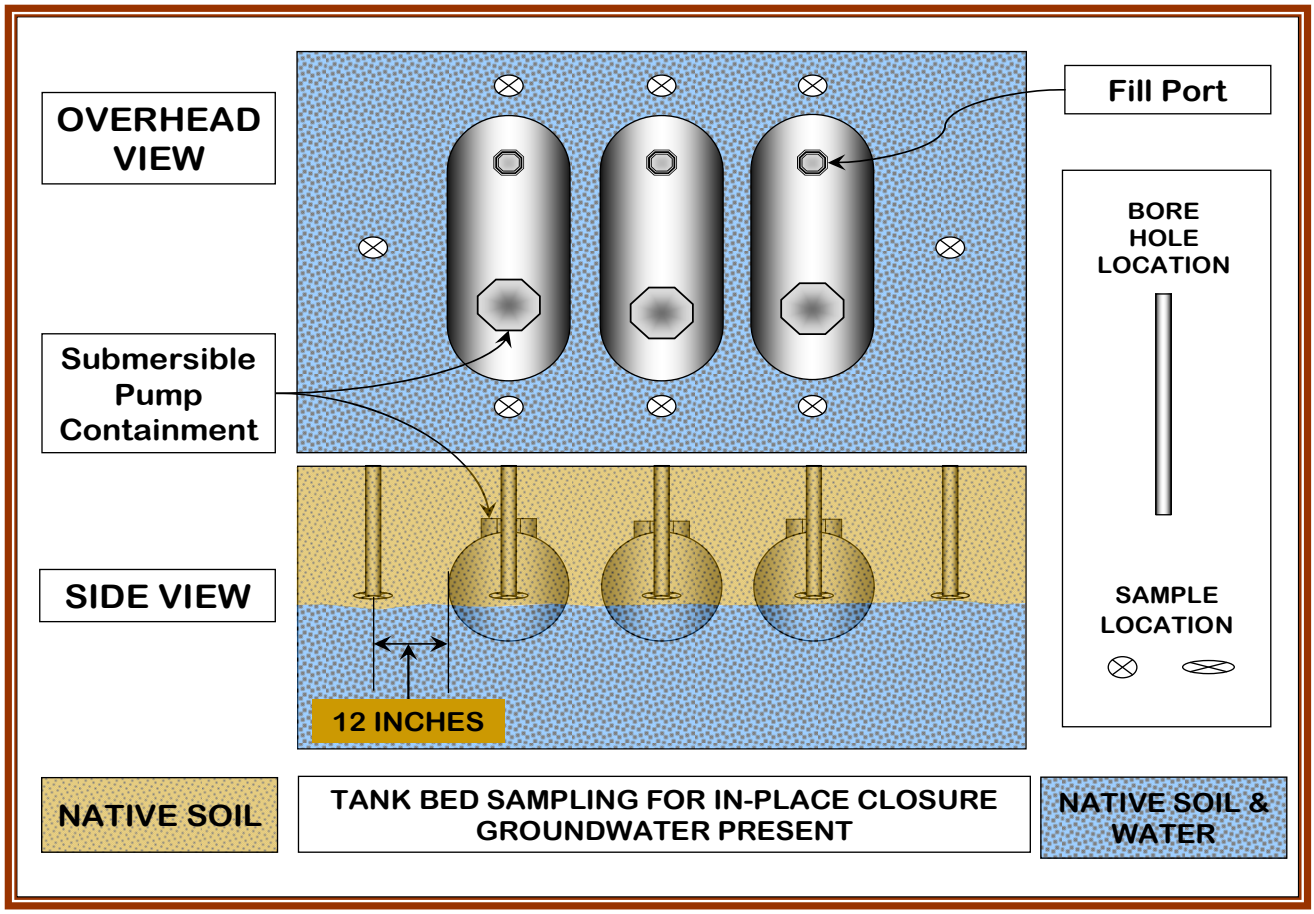
Drill, hydraulic probe or hand auger at the locations depicted in the following diagrams. Each boring must be within 3–5 feet of the tank and angled in toward the midline of the tank-bed. The objective is to collect samples beneath and as close to the long midline of the tank. Sample depth must be at a minimum 2 feet deeper for low permeability soils (clay or silt), and 5 feet deeper for high permeability soils (sand or gravel), than the bottom of the tank-bed. Collect 2 samples from each boring. Collect 1 sample from the interval with the greatest visual, olfactory, or field- screening-instrument indication of contamination; or if no indication, (1) immediately above the soil-water interface if water is encountered (see diagram on page 37), or (2) between tank midpoint and total depth. Collect a second sample at total depth. For an assessment associated with a repair, sampling is typically needed only in the immediate vicinity of the repair.


OVERHEAD VIEW
Submersible Pump Containment
Fill Port
SIDE VIEW
2 - 5 ft
NATIVE SOIL
TANK BED SAMPLING FOR IN-PLACE CLOSURE FOR
TANKS ≤ 10 ft IN LENGTH
BORE HOLE LOCATION
SAMPLE LOCATION


OVERHEAD VIEW
Fill Port
Submersible Pump Containment
SIDE VIEW
BORE HOLE LOCATION
SAMPLE LOCATION
NATIVE SOIL
TANK BED SAMPLING FOR IN-PLACE CLOSURE FOR TANKS > 10 ft IN LENGTH


OVERHEAD VIEW
Fill Port
Submersible Pump Containment
SIDE VIEW
2 - 5 ft
BORE HOLE LOCATION
SAMPLE LOCATION
NATIVE SOIL
TANK BED SAMPLING FOR IN-PLACE CLOSURE
MULTIPLE TANKS ≤ 10 ft IN LENGTH


OVERHEAD VIEW
Fill Port
Submersible Pump Containment
SIDE VIEW
BORE HOLE LOCATION
SAMPLE LOCATION
NATIVE SOIL
TANK BED SAMPLING FOR IN-PLACE CLOSURE
MULTIPLE TANKS > 10 ft IN LENGTH


OVERHEAD VIEW
Fill Port
Submersible Pump Containment
SIDE VIEW
12 INCHES
BORE HOLE LOCATION
SAMPLE LOCATION
NATIVE SOIL
TANK BED SAMPLING FOR IN-PLACE CLOSURE
GROUNDWATER PRESENT
NATIVE SOIL & WATER

2. Piping

Use the same sampling method as was used for tank closure in-place, except that the borings are to be performed along the piping run. One discrete sample is to be collected from native soil under each connector, elbow, bend, etc., at a depth of 2 feet below the piping for low permeability soils (e.g., clays, silts, fine sands) and at 5 feet below the piping for high permeability soils (e.g., medium to coarse sand, gravel). A minimum of 1 sample is to be collected every 20 linear feet of piping. If the distance between 2 parallel piping runs is ≤ 5 feet, then only 1 borehole need be performed between the piping runs.

E. REPLACEMENTS OR REPAIRS - EXAMPLES

Below are several examples of procedures to follow when one is replacing or repairing only a portion of a system such as a section of piping, or removal of one tank or the abandonment of one dispenser

- **I am only abandoning an island** – the facility will remain operating as a UST facility. In this case, you must submit the TSSA forms and indicate on the form that only piping and a dispenser is being closed. The section of piping that supplied the abandoned dispenser island must also be closed in accordance with the requirements of this document and chapter SPS 310.
- **I am only replacing the piping** – the facility will remain operating as a UST facility and all of the new piping will utilize the existing trenches/dispenser islands. In this case, you must submit the TSSA forms and indicate on the form that only piping is being removed. All piping must be closed in accordance with the requirements of this document and chapter SPS 310.
- **I am only replacing the tanks** – the existing piping will be utilized. In this case, you must submit the TSSA forms and indicate on the form that only tanks are being closed. The tanks must be closed in accordance with the requirements of this document and chapter SPS 310.
- **I am only repairing the piping.** In this case, you must notify the field inspector of your intent and indicate on the TSSA form that only piping repair is being performed. For an assessment associated with a repair, sampling is typically needed only in the vicinity of the repair, unless there is evidence that suggests the impact of a release extends beyond the immediate vicinity of the repair.

VI. REPORTING

A.TSSA Report Form

All TSSA documentation is to be reported on part A & B of the Department's Tank System Service and Closure Assessment Report Form ERS-8951. This form is included at the end of this publication. It is also available from the Bureau of Weights and Measures at P.O. Box 7837, Madison, WI, 53707-7837, or at telephone (608) 266-0956; or from the Department's Web site:

Part A & B: http://dsps.wi.gov/er/pdf/bst/Forms_FM/ER-BST-Fm-8951_TSSA_Closure&Service.pdf

Part A only: http://dsps.wi.gov/er/pdf/bst/Forms_FM/ER-BST-Fm-8951_TSSA_PART_A_ONLY.pdf

Part B only: http://dsps.wi.gov/er/pdf/bst/Forms_FM/ER-BST-Fm-8951_TSSA_PART_B_ONLY.pdf

B. CONTACT INFORMATION

1. Emergencies

For emergencies, such as fires, explosions, or vapor hazards, immediately call the local emergency response personnel by dialing 911; and then call the statewide spills hotline at 800-943-0003, and the corresponding Department of Natural Resources regional spill coordinator shown under the following DNR Web site: http://dnr.wi.gov/topic/Brownfields/Contact.html

2. Non-Emergencies and Follow-Up after Reporting an Emergency

Reporting Releases

All hazardous substance discharges, be they emergencies or non-emergencies, must be reported immediately to the Department of Natural Resources according to s. 292.11 Wis. Stats. Owners or operators or other persons who cause non-emergency hazardous substance discharges may report them by telefaxing or e-mailing a completed report (DNR Form 4400-225) to the DNR, or calling or visiting a DNR office in person. If you choose to notify the DNR by telefax or by email, you should complete form 4400-225 (this form can be found at the following Web site: http://dnr.wi.gov/files/pdf/forms/4400/4400-225.pdf) to insure that all necessary information is included.

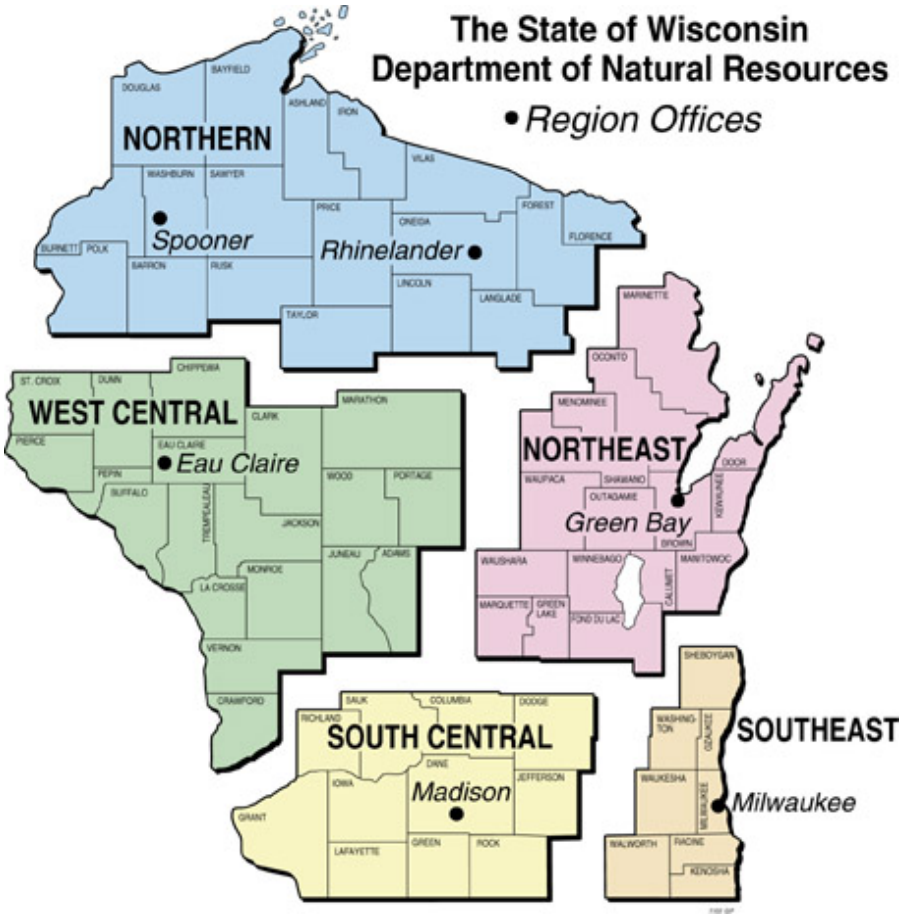
Should you choose to report the discharge by phone you should call the appropriate DNR Regional Spills Coordinator. Their contact information can be found at the following DNR Web site: http://dnr.wi.gov/topic/Brownfields/Contact.html.

Reporting TSSA Findings to the Facility Owner or Operator

All TSSAs must be documented on form ERS-8951 cited above and submitted to the owner or operator within 21 business days after discovery of the conditions that resulted in the assessment.

Reporting of TSSA Findings

All original TSSA report documents (scaled drawing of the site, layout showing sample locations and excavations, lab reports, photos and parts A & B of form ERS-8951) must be sent to the Environmental Program Associate in the corresponding DNR regional office shown under the following DNR Web site: http://dnr.wi.gov/topic/waste/epas.html



The phone number, fax number and address for each of the DNR regional offices are as follows:

DNR Region	Telephone Number	FAX Number	Mailing Address
Northern	715-365-8996	715-365-8932	107 Sutliff Ave. Rhinelander, WI 54501
Northeast	920-662-5166	920-662-5413	2984 Shawano Ave. Green Bay, WI 54313-6727
South Central	608-275-3289	608-275-3338	3911 Fish Hatchery Rd. Fitchburg, WI 53711
Southeast	414-263-8678	414-263-8606	2300 N. Dr. Martin Luther King Jr. Dr. Milwaukee, WI 53212
West Central	715-839-3734	715-839-6076	1300 W. Clairemont Ave. Eau Claire, WI 54701

Note:

- Report contamination in Sheboygan County to Northeast Region.
- Report contamination in Walworth County to South Central Region.

***NOTE**: Failure to notify the DNR of a release may have serious consequences including forfeitures of not less than $10 or more than $5000 for each violation. Be aware that each day of continued violation is a separate offense, and that each tank which is in violation is a separate offense.*

***NOTE**: DATCP staff and authorized agents of the Department, such as Local Program Operators, periodically inspect storage facilities for petroleum products and other hazardous substances. These inspectors have authority to report any release encountered during these inspections that have not been reported to the DNR by the owner or operator – and these releases may become the subject of formal enforcement actions.*

C. WHERE TO OBTAIN ADDITIONAL INFORMATION

The Bureau of Weights and Measures of the DATCP Division of Consumer Protection is the primary unit responsible for the regulation of Wisconsin's underground and aboveground storage tank systems through the SPS 310 regulations.

The DNR's Remediation and Redevelopment Program and DATCP's ERS Site Review Section oversee the investigation and cleanup of environmental contamination that includes storage tank investigations and cleanups through the NR 700 regulations.

Additional information can be found at the following DATCP and DNR Web sites:

http://DSPS.wi.gov/ER/ER-BST-HomePage.html

http://DSPS.wi.gov/ER/ER-PECFA-Home.html

http://dnr.wi.gov/topic/Spills/

http://dnr.wi.gov/files/pdf/pubs/rr/rr604.pdf

http://dnr.wi.gov/files/pdf/pubs/rr/rr558.pdf

Other Agency links:

U.S. EPA Spill Prevention, Control and Countermeasure Plans (SPCC):
http://www.epa.gov/region5superfund/oil/spcc.html

Wisconsin Department of Health Services:
http://www.dhs.wisconsin.gov/

VII. REFERENCES

NFPA Standard 329, Recommended Practice for Handling Underground Leakage of Flammable and Combustible Liquids – may be used for guidance in the investigation of releases.

Guidance on Conducting Environmental Response Actions (PUBL-SW-157-92).

Soil Sampling Requirements for LUST Site Investigation and Excavation (PUBL-SW-127; Appendix Q of the *Guidance on Conducting Environmental Response Actions*-4/92).

Cleanup Process for the Emergency and Remedial Response Program (PUBL-SW-132-3/92).

Selecting an Environmental Consultant (PUBL-SW-113-11/91).

Solid Waste Rules Concerning Petroleum Contaminated Soil (Appendix 0 of the *Guidance on Conducting Environmental Response Actions*-4/92).

LUST and Petroleum Analytical and Quality Assurance Guidance (PUBL-SW-130-93; Appendix B of the *Guidance on Conducting Environmental Response Actions*-6/93).

LUST Field Screening Procedures (PUBL-SW-176).

These references are available from:

LUST Information Requests
Department of Natural Resources
P.O. Box 7921
Madison, WI 53707
(608) 266-2111

ADDITIONAL INFORMATION FOR CERTIFICATION

Field Measurements: Dependable Data When You Need It, EPA publication 530/UST-90/003, September 1990. Provides information on field screening techniques for petroleum releases. Superintendent of Documents Stock No. 055-000-00368-8, U.S. Government Printing Office, Washington, D.C. 20402 (202) 783-3238. $5.50, Visa and MasterCard accepted.

A Guide to the Assessment and Remediation of Underground Petroleum Releases, API Publication 1628, 2nd Edition, 1989. Pages 1-20 provide an excellent overview of where to look for spilled petroleum. American Petroleum Institute, 1220 L St NW, Washington, DC 20005 (202) 682-8000. $37.00 + shipping and handling if prepaid.

ADDENDUM 1 - RELEASE REPORTING QUESTIONS AND ANSWERS

Who is legally responsible for reporting releases?

The person(s) in possession or control of the hazardous substance that was discharged or who caused the discharge of the hazardous substance. This is usually the owner/operator of the property on which the discharge occurred; however it can also be a generator, transporter or other person.

Is it solely the owner or is the contractor legally responsible as well?

The contractor is only responsible if he/she is in "possession/control" or "caused" the hazardous substance discharge.

Can the owner tell the contractor "I will report the release, fill in the excavation"?

Yes, the owner can tell the contractor to do so. However, if contaminated soil is used to fill in the excavation, the contractor has violated solid/hazardous waste disposal requirements and the contractor would then also have a responsibility to report a hazardous substance discharge under section 292.11(2), Wis. Stats.

What would be the contractor's liability if the release went unreported?

If clean fill was used to backfill the excavation, it depends upon the harm caused by the failure to report. It is possible that if a threat to public health or safety exists as a result of the failure to notify, the contractor would be liable to the third party who was injured (e.g., explosive vapors present and someone is injured in an explosion). If contaminated material was used to backfill the excavation, the contractor may be as liable as the property owner for cleanup, and may also be penalized for the failure to notify and for the illegal disposal.

Can the contractor withhold the information on the basis of the client-consultant relationship?

Be aware that under s. 292.11(8), Wis. Stats., the Department of Natural Resources (DNR) and its authorized representatives are able to access property and inspect any record relating to a hazardous substance for the purpose of ascertaining compliance with s. 292.11, Wis. Stats. It is likely that the DNR would be able to obtain the information under this authority.

How can parties report releases to meet their legal obligations?

Either by contacting DNR directly or by phoning DNR's designated 24-hour telephone number, (800) 943-0003. This number is answered by the Division of Emergency Government (DEG) and receives calls covering all "emergencies." However, the LUST program requests that releases be faxed to the appropriate regional office using the fax format, and that the DEG number be used for emergency situations.

Can parties report releases by fax or federal express?

Yes, as long as they comply with the "immediate" time frame. Often the phone number for the appropriate DNR staff person is busy, and faxing the notification is a more timely method of release reporting.

What information should be reported in a release notification?

The following information is usually requested by the DNR. Reporters should provide additional information that they think is relevant

1. Name, address and telephone number of the person reporting the discharge.
2. Name, address and telephone number of the responsible parties or the potentially responsible parties.
3. Date, time and duration of the discharge.
4. Location of the discharge, including the legal description (public lands survey system) if available.
5. Identity, physical state and quantity of the hazardous substance discharged.
6. Physical, chemical, hazardous and toxicological characteristics of the hazardous substance.
7. Cause of the discharge.
8. Emergency response or other response actions being taken.
9. Source, speed of movement and destination or probable destination of the discharged hazardous substance.
10. Distance and direction to the nearest inhabited buildings.
11. Impacts to the environment including air, land, and waters of the state and private wells.
12. Weather conditions existing at the scene, including wind direction and velocity.
13. Name, address and telephone number of environmental contractors (closure assessment, investigation) involved.
14. Additional information deemed relevant by the reporter.

ADDENDUM 2 - CONTRACTOR CERTIFICATION IN WISCONSIN

Regulatory Overview

In 1988, the federal government promulgated comprehensive UST regulations dealing with prevention, detection and cleanup of releases from USTs. Two state agencies implement these regulations in Wisconsin.

Effective July 1, 2013 the Department of Agriculture, Trade and Consumer Protection's (DATCP) Bureau of Weights and Measures regulates the installation, operation, and closure of underground and aboveground storage tank systems; These responsibilities include:

- Technical code and standard consultation.
- Permitting and registration of aboveground and underground flammable, combustible and hazardous liquid storage tanks.
- Retail service station inspection and petroleum product testing.
- Maintaining a statewide aboveground and underground storage tank database.
- Review of system design plans for storage or dispensing system installation, modification or upgrade.
- Credential administration for individuals working in certification requiring specialties.
- Contractor Certification.
- Administration of the SPS 310 Local Program Operator program.
- Performance standards for new UST systems.
- Spill and overfill control requirements.
- Corrosion protection requirements.
- Facility operations reporting and record keeping.
- Release detection, reporting and record keeping.
- UST closure and closure assessment, and reporting of suspected releases.
- Release investigation and confirmation.

The Department of Natural Resources (DNR) is responsible for overseeing environmental cleanups at sites where a hazardous substance(s) has/have been released into the environment (this includes "High Risk" petroleum releases). They also administer the financial reimbursement program (PECFA) and are responsible for overseeing environmental cleanups for low- and medium-risk sites (PECFA-eligible and non-PECFA eligible). The DNR administers rules pertaining to:

- Reporting of suspected releases.
- Release investigation and confirmation.
- Reporting and cleanup of spills and overfills.
- Initial response to releases and abatement measures.
- Free product removal.
- Investigations for soil and groundwater cleanup.
- Corrective action plans to address contamination.
- Public notification of releases.

Contractor Registration, Certification, and Qualifications

Contractor Certification under Chapter SPS 305, Wis. Admin. Code.

SPS 305 establishes contractor certification in the following categories:

- Underground tank system installers.
- Tank system tightness testers.
- Aboveground tank system installers.
- Tank removers and cleaners.
- Tank-system site assessors.
- Tank system inspectors.
- Underground tank system liners.

Certification is only required when work is performed on a tank system covered by SPS 305. That means:

The tank-system site assessor must be certified only when SPS 310 requires a TSSA, e.g., for fleet and retail motor fuel tanks; farm and residential non-commercial motor fuel tanks of 1100 gallons or more; heating oil USTs of 4000 gallons or more; or in all cases where there is a suspected or obvious release, and

The tank removers and cleaners must be certified for all tanks covered by the SPS 310 closure requirements. In essence, this means all underground tanks of 60 gallons or more and all aboveground tanks of 110 gallons or more (except for field-erected tanks and heating fuel tanks for 1- or 2-family dwellings), where the product stored is flammable, combustible or hazardous.

Information on contractor certification may be requested from:

The Department of Agriculture, Trade and Consumer Protection:
E-mail: DATCPPCPTradesCredentialing@wi.gov

or

by calling: 608.261.8503

Consultant Registration under ch.SPS 347, Wis. Admin. Code.

DATCP also requires that consultants register in order for their work to be reimbursed by PECFA. A list of companies with registered PECFA consultants can be viewed at:

http://apps2.commerce.wi.gov/SB_Credential/SB_CredentialApp/SearchByMultipleCriteria

by clicking on PECFA Consulting Firm in the Credential Type drop-down box.

Consultant Qualifications under Chapter NR 712, Wis. Admin. Code.

There is no formal approval process for doing environmental cleanup work under chapter NR 712 Wis. Admin. Code in Wisconsin. Consultants are required to have specific qualifications to do specific work as outlined in NR 712. Copies of the NR 700 series are available from the Department of Administration, Document Sales (see below). Additional information including copies of detailed technical guidance for environmental cleanups is available from the Emergency and Remedial Response Section, Public Information Requests, at (608) 264-6009. A publication checklist and instructions for ordering publications is included elsewhere in this publication.

The DNR maintains lists of environmental consultants in different categories (see publication checklist). All of this information is self-reported and the DNR makes no warranties regarding its accuracy or the reliability of firms on these lists. The DNR also maintains data on environmental consultants who have indicated they wish to be considered for state projects. The list of consultants who have provided information is enclosed. The actual data is intended for Department use, and specialized reports are prepared on a site-specific basis. However, the data is public information and may be requested in its entirety in the form used by the Department (computer disk). To get on the lists, request the "Survey of Environmental Companies" and return it to the address on the publication checklist.

Copies of Administrative Rules can be purchased from the Department of Administration:

Document Sales
P.O. Box 7840
Madison, WI 53707
(608) 266-3358
1-800-362-7253

The following rules relate to tank-system site assessments:

- Chapter SPS 310
- Chapter SPS 347
- Chapters NR 700-746

ADDENDUM 3 - PETROLEUM TANK AND SLUDGE MANAGEMENT FACT SHEET

Many owners of underground storage tanks (USTs) are in the process of removing or upgrading their tanks to come into compliance with new Environmental Protection Agency (EPA) regulations. Tank owners are responsible for properly managing any waste and product that remains in tanks which are being upgraded or removed.

The DATCP regulates petroleum products. See "Management of Petroleum Products at Tank Closure" for product handling guidance. DATCP considers tank contents less than two inches above the water line or the tank bottom to be wastes. These wastes are regulated by the Department of Natural Resources (DNR) as either sludge or wastewater.

Tank sludge is a solid waste regulated under chapter 144, Wis. Stats. Depending on the products stored in tanks, it may also be a hazardous waste. The state has the authority to impose civil or criminal penalties against tank owners, tank excavators, tank transporters, and tank salvagers who improperly dispose of tank sludge. The tank owner is responsible for classifying tank waste and making sure it is properly handled and disposed of in compliance with the regulations. Wastewater is regulated by DNR under chapters 281 and 283, Wis. Stats.

An owner or operator who permits improper disposal may become ineligible for reimbursement under the state's Petroleum Environmental Cleanup Fund Award program (PECFA).

WASTEWATER HANDLING

Wastewater may be generated from either removal of tank condensate or from tank washing. It must be disposed of legally. Some tank excavation services include wastewater disposal. In sewered areas you may contact the municipal wastewater treatment plant for disposal approval. In unsewered areas you may contact a licensed septic disposal service to transport wastewater to a wastewater treatment plant. Septic haulers may not transport flammable liquids. Identify an acceptable method to dispose of wastewater prior to excavating tanks.

SLUDGE HANDLING

Tank sludge is solid waste. Tank owners are responsible for determining if it is also hazardous waste, and, if so, characterizing and managing it in accordance with all state and federal regulations. This is a technical procedure that should be handled by an experienced hazardous waste contractor. If there is a possibility that at any time the tank contents were not clean fuels, additional analysis is required to identify residual wastes (PCB's, solvents, etc.). Complete analysis must be performed for waste oil tank sludge.

Tank sludge that has been classified as non-hazardous may be:

a. Removed by a waste oil service for recycling.
b. Disposed of in a licensed sanitary landfill with a clay liner if the sludge does not contain free liquids as determined by the paint filter test (EPA SW-846 methods, update II). Free liquids may be absorbed by adding clean absorbent materials such as sawdust or vermiculite.

Tank sludge that has been classified as hazardous must be:

a. Transported to a licensed treatment, storage or disposal facility by a licensed hazardous waste transportation service.
b. Manifested for transportation using a U.S. Environmental Protection Agency (EPA) identification (ID) number.

ID numbers can be obtained by completing an EPA notification form (8700-12, rev. 10-88). This form can be obtained from WDNR by contacting Mr. David Kollasch by phone [608 – 264-6022] or e-mail [david.kollasch@wisconsin.gov] or, by going directly to the US EPA web site by clicking on the following link: http://www.epa.gov/epawaste/inforesources/data/form8700/8700-12.pdf. The completed form must be submitted to:

Mr. DAVE KOLLASCH
NOTIFICATION COORDINATOR
Wisconsin Dept. of Natural Resources
PO Box 7921
Madison WI 53707-7921

The EPA ID number should be requested six weeks prior to tank excavation. ID numbers cannot be obtained from WDNR.

Sludge may be held on site while laboratory analysis is being completed, or it may be transported immediately by a licensed transporter. (Liquid tank sludge may be manifested as ignitable waste.) Some tank excavation companies offer sludge analysis and disposal services.

Sludge that is being held on site should be handled as follows:

a. Consult the laboratory prior to sampling to determine proper sampling procedures and sample containers.
b. Carefully transfer the sludge from the tank to a metal drum. Seal the drum, affix the date and label it “Petroleum Tank Sludge.”
c. To avoid contaminating non-hazardous sludge with hazardous sludge from other tanks, do not mix sludges from different tanks. Each sample jar and each sludge drum must be identified by matching numbers or descriptions.
d. Handle sludge with care! Anyone transferring sludge must have proper training and wear protective clothing and gloves.
e. Avoid spills! Spilling sludge may contaminate an otherwise clean tank excavation site. You must immediately report any spill to DNR and clean up the spill.
f. Maintain the drums containing sludge in good condition and in a secure location while waiting for laboratory results. Report the location of sludge drums in the tank system site assessment report that you provide to the DNR.

ADDITIONAL INFORMATION AVAILABLE

Tank Regulatory Information:

Department of Agriculture, Trade and Consumer Protection
Bureau of Petroleum Products and Tanks
P.O. Box 7838
Madison, WI 53707-7838
(608) 266-7874
FAX (608) 261-7725

Hazardous Waste Management Information:

Bureau of Solid and Hazardous Waste Management
Department of Natural Resources
P.O. Box 7921
Madison, WI 53707

Certified Laboratories:

Office of Technical Services
Department of Natural Resources
P.O. Box 7922
Madison, WI 53707

Additional FACT SHEETS Available from DNR:

- "What is Hazardous Waste?" (Publication WA-106 98)
- "EPA Identification Number" (Publication WA-101)
- "Hazardous Waste: Your Business Responsibilities" (Publication WA 294 2006)

DNR fact sheets and forms to obtain EPA identification numbers can also be obtained from DNR Regional Offices. This fact sheet is a summary of regulations. It may not be used as a substitute for the statutes and codes administered by the Departments of Natural Resources; DATCP; Transportation; or the federal government. Consult the regulations and statutes for specific information. Remember, a tank owner, tank excavator, tank transporter and tank salvager may all be liable for improper sludge transportation and disposal.

ADDENDUM 4 - MANAGING PETROLEUM PRODUCTS* DURING TANK CLOSURES

WHAT IS IT? WHO REGULATES IT?

Product pumped to a maximum depth of 2" above the water level in the tank or 2" above the tank bottom whichever is higher. Bureau of Petroleum Products and Tanks (DATCP)

Waste water, product-water interface, petroleum directly above product-water interface, sludge--anything below the 2" level. Department of Natural Resources

The Petroleum Inspection Program, under the authority of chapter 168 of Wisconsin's Statutes and chapter SPS 48 of Wisconsin's Administrative Code, has established the following requirements for petroleum products removed from underground storage tanks (USTs) at time of closure:

PRODUCT MAY BE

- Transferred only by a tank vehicle that complies with "Standards for Tank Vehicles for Flammable and Combustible Liquids."
- Returned to a terminal slop tank.
- Returned to a refiner.

TO USE THE PRODUCT*, FOLLOW THESE GUIDES.

- Gasoline may be transferred to another retail facility.
- Gasoline storage must meet the standards established in chapter SPS 310 of Wisconsin's Administrative Code and the EPA rules.
- Gasoline may be treated as interface and blended with new gasoline at terminals or
- refineries at a blend rate not to exceed 1/2 of 1%.
- #1 oil must be downgraded to #2 fuel oil.
- Oils may be sold without blending for non sensitive burner and heating use, but only to a qualified buyer/user established with the concurrence of the District Petroleum Inspection Office.
- Kerosene, #1 diesel, #2 diesel, #1 fuel oil, or #2 fuel oil may be blended with new #2 fuel oil up to a 50% rate and used or sold for heating purposes.
- Products heavier than #2 fuel oil may be blended with an equal or heavier stock at up to a 50% rate and used or sold for heating purposes.

When product quantities of 500 gallons or more are involved, contact a DATCP's District Petroleum Inspection Office: http://dsps.wi.gov/er/pdf/bst/Forms_FM/ER-BST-FM-8592-BRPSmap.pdf

They may:

a. Sample and test the product to determine compliance with chapter SPS 48 and then provide directions for disposition.
b. Allow transfer of the product to another facility for use or sale.
c. Classify the product as falling outside the scope of SPS 48.

*Any product regulated by DATCP under chapter SPS 348 – Petroleum Products.

ADDENDUM 5 - TRANSPORTING HAZARDOUS WASTE

To transport hazardous waste in Wisconsin you must:

* Obtain an I.D. Number from EPA using the Notification of Regulated Waste Activity Form 8700-12. To request a notification form, contact a Department of Natural Resources (DNR) Hazardous Waste Specialist or call (608) 266-2111.

* Obtain a hazardous waste transportation service license from the DNR. To request a transportation license application form, contact a Department Hazardous Waste Specialist or call (608) 266-2111.

Persons transporting hazardous waste into or through Wisconsin who are based in another state should submit a license application and fee to the DNR regional office where the transportation activity is concentrated or where the transporter enters Wisconsin.

The $250 annual license fee covers the period from October 1 to September 30 and is required with each application. A $150 late fee is assessed for late renewals.

* Only accept hazardous waste accompanied by a manifest that is properly signed by the generator (unless the waste was generated by a very small quantity generator who is not required to, and does not, manifest its waste). The transporter must ensure that copies of a manifest meeting the requirements of chapter NR 620, Wis. Adm. Code:

a) Are signed by the generator.
b) Are signed and dated by the transporter when the waste is accepted from the generator.
c) Accompany the waste at all times.
d) Are signed and dated by another transportation service that also transports the waste or by the facility indicated on the manifest that receives the waste.
e) Are kept by the transporter for 3 years.

(**NOTE**: A manifest should not be used for shipments of only nonhazardous waste, except for PCB waste.)

If the transporter is unable to deliver the waste to the facility, alternate facility, or another transporter indicated on the manifest, the transporter must contact the generator for further directions. The transporter must then revise the manifest, obtain a second manifest, or return the waste to the generator.

* Properly package, label and mark the waste and placard the vehicle. Hazardous waste must be packaged according to the hazardous materials transportation requirements in 49 CFR Part 173. Hazardous waste must be labeled and marked, and vehicles must be placarded according to the hazardous materials transportation requirements in 49 CFR Part 172.

* First secure containerized waste in the vehicle to prevent movement.

* Properly train equipment operators. Each transportation service must have an employee training program for hazardous waste handling and equipment operators. Topics in the program must include

the problems and potential hazards posed by the transportation and disposal of hazardous waste, and equipment inspection techniques. Training records must be kept for 3 years.

* Periodically inspect your equipment. Each transportation service must have an inspection program for hazardous waste handling and transportation equipment. The program must include a schedule for equipment inspection and a checklist of specific areas or items to inspect. Records of when the equipment was inspected, any problems observed, and any maintenance, must be kept for 3 years.

* Properly report and respond to hazardous waste discharges.

This summary of hazardous waste transporter requirements is based on guidance from the DNR for chapter NR 663, Wisconsin Administrative Code, effective August 1, 2006. For more details and verification of actual requirements, consult the code or contact the DNR Hazardous Waste Specialist for the county in which your site is located. Please note: requirements are slightly different for rail or water transport or when a transporter mixes wastes of different shipping descriptions.

What should be done if a discharge of hazardous waste occurs during transportation?

1. Call the Division of Emergency Government's 24-hour number: 800-943-0003.
2. Comply with the hazardous substance spill requirements in section 292.11, Wisconsin Statutes and chapter NR 706, Wis. Adm. Code.
3. Give notice as required by 49 CFR 171.15 to the National Response Center at (800) 424-8802.
4. Report in writing as required by 49 CFR 171.16 to the Director, Office of Hazardous Materials Regulations, Materials Transportation Bureau, U.S. DOT, Washington, D.C. 20590.
5. Remove, containerize, transport and dispose of spilled hazardous waste according to the hazardous waste management requirements in chapters NR 600 to 685, Wis. Adm. Code.

ADDENDUM 6 - TANK CLEANING AND HANDLING

Wisconsin's hazardous waste management regulations require that storage tanks be adequately cleaned before they are transported or cut up for scrap.

Why Must Tanks Be Cleaned Properly?

It is illegal to transport tanks containing residues (including petroleum residues) that are hazardous wastes, without a variance or emergency waiver from Department of Natural Resources (DNR) hazardous waste staff. Interstate carriers must obtain United States Department of Transportation approval to carry uncleaned tanks that have held hazardous materials. Improperly or inadequately cleaned tanks may pose a fire or explosion hazard through the production of vapors from sludge residues. Also, these residues may be hazardous due to their toxicity. Inadequate cleaning may prevent recycling of the tanks as scrap metal.

Before removing sludge, cleaning tanks, and transporting tanks, fill the tanks with inert gases or properly vent them in accordance with the DATCP requirements to remove explosive vapors. Federal Occupational Health and Safety Administration (OSHA) confined space entry regulations may apply.

When Is a Tank Cleaned Adequately?

It is difficult to clean a tank so completely that no product or sludge remains on the inside surfaces. The objective of cleaning tanks is to minimize the risk of explosion, fire, or toxic substance release.

There is no widely-accepted standard for determining if a tank has been adequately cleaned. However, adhering to the methods described in the publications API 2015 (American Petroleum Institute, 2101 L Street, NW, Washington, D.C. 20037) or NFPA 327 (National Fire Protection Association, Batterymarch Park, Quincy, MA 02269) will produce a tank that can be recycled as scrap.

When a tank has been properly cleaned, an inspector should be unable to remove additional sludge or scale by wiping the inside surface of the tank with a rag or squeegee.

It is important to realize that even if a tank passes this “wipe test” it may contain sufficient traces of product to generate hazardous vapors. Therefore, cleaned tanks must be properly inerted or vented according to the standard procedures described in API 2015 or NFPA 327 before they are transported, cut apart or stored.

The materials collected during cleaning (rinsate and sludge) may be hazardous wastes. The generator of the waste (generally the owner of the contents of the tank) is responsible for determining if these materials are hazardous wastes. If they are, they must be stored, transported, and disposed of according to hazardous waste regulations. Details of Wisconsin's hazardous waste regulations may be obtained from the DNR Hazardous Waste Management program.

What Tank Cleaning Information Must Be Included in the Closure Assessment?

The closure assessment must state:

(1) The method used for inerting the tank.
(2) The method used for cleaning the tank (e.g., steam, water jet, chemical).
(3) Who cleaned the tank.
(4) The quantity of waste residue (sludge and rinsate) collected during cleaning.
(5) How the waste residue was managed.
(6) Where the tank or tank fragments were taken for disposal and the manner of disposal.

ADDENDUM 7 - METHANOL FIELD PRESERVATION FOR GRO, PVOC and Naphthalene SAMPLES - QUESTIONS AND ANSWERS

What is the methanol field preservation and when is it required?

Methanol field preservation involves placing soil samples in jars containing methanol or adding methanol to jars containing soil while at the sampling location. The methanol reduces volatilization and biodegradation of soil contaminants prior to lab analysis, thus giving more accurate sample results.

Is the methanol preservation necessary?

There is strong evidence that samples which are not preserved in the field underestimate the contamination that is present. Scientific data shows that losses of 30 percent or more are typical. This data is supported by field experience where screening, odor and staining of soils indicate that contamination was present, but lab samples showed no detect.

What is the procedure for preserving samples with methanol?

For samples collected for closure assessments (e.g., closure assessments for underground storage tanks), the Department of Natural Resources (DNR) recommends adding 25 gm of soil directly to a tared 60 ml jar containing 25 mls of purge and trap grade methanol. It is not advisable to weigh out exactly 25 gm of soil for each sample because this is a ballpark figure, and any agitation causes unnecessary volatilization. Instead, weigh out one 25 gm sample of site soil into an empty 60 ml jar, mark a fill line and use this jar as a model for collecting the actual samples. The maximum amount of soil that can be added to a 60 ml jar is 35 gm. If a 40 ml jar is used, the sampler should add a maximum of 20 gm of soil and 20 mls of methanol.

For samples collected for LUST investigations, the DNR recommends adding the methanol to the soil because many samplers use field screening to identify samples for analysis, and soil samples preserved in methanol are a hazardous waste unless analyzed by a laboratory. Collect 2 samples at each sample location, one for field screening and one for potential laboratory analysis. Place 25 grams of soil in an empty, tared 60 mil VOC vial for potential lab analysis (20 gm maximum for a 40 ml vial). Cap the vial and place on ice while conducting field screening of the other co-located sample. Collecting soils into an intermediate container and sub-sampling after screening has been done is <u>not</u> acceptable. After completing field analysis of all samples, select the co-located laboratory samples that should be analyzed based on the field screening results.

There are three ways to add methanol to the soil. The first two involve the use of a glass syringe and non-coring syringe needle to transfer the methanol from a septa vial containing purge and trap grade methanol to the sample vial. Both require the sampler to use a fresh syringe needle for each sample to avoid cross contamination. The first method requires loosening the cap to relieve pressure buildup from the methanol addition. The second method is to use a smaller sample size and less methanol to overcome sample pressurization. All samples must maintain a 1:1 ratio of milliliters (ml) of methanol to grams. DNR recommends' using 10 gm soil and 10 ml of methanol, but the laboratory analyzing the samples should approve the sample size. It is also possible to remove the cap and add the methanol directly to the jar. However, this method increases the potential for volatilization, cross contamination, and spillage. <u>Add the methanol to samples within 2 hours of collection</u>. Samples should be returned to an iced cooler immediately after preservation. Samples may be preserved by the laboratory only if they are received by the lab within 2 hours of collection.

How can I dispose of soil samples that aren't sent in for analysis?

Soil preserved in methanol is a hazardous waste. Soil samples are exempt from hazardous waste regulations <u>if they are analyzed at a laboratory</u>. Any samples that are not analyzed are hazardous waste and the generator is legally responsible for proper disposal. In general, do not collect and preserve excess samples, and if you collect and preserve a sample, have it analyzed.

What can be done to insure personal safety while handling the methanol?

Do not store the methanol in a hot place. On hot days, carry the methanol samples in your sample cooler prior to sample collection. Beware of pressure buildup in heated sample jars containing methanol. Avoid inhaling the methanol vapors. Work quickly while filling sample jars to minimize your exposure to the methanol. Open only one methanol vial at a time. Do not handle methanol in an unventilated area. If you are preserving samples inside a vehicle in inclement weather, make sure to provide some ventilation.

What is a dry-weight sample and how many do I have to collect?

A dry weight sample is simply a jar filled with dirt that is required by the lab to calculate the percent moisture of the soil at the sampling location. Dry weight samples should be tightly sealed to prevent loss of soil moisture but, since they are not analyzed for contaminants, they do not require special preservation. You need to collect a dry-weight sample for each sampling location at the site.

How can I avoid cross-contamination?

Site assessors should not handle petroleum products prior to sample collection. Wash your hands after filling your car with gas. Under no circumstances should methanol sample jars be stored with gasoline (e.g. with a gas can in the trunk of a car). Tank removers doubling as site assessors should wear coveralls during tank removal and take them off before sampling. Vehicle exhaust and ambient gasoline vapors are another potential source of cross contamination. Quickly open, fill, and reseal methanol sample jars. Low concentrations of ambient vapors can be monitored with a PID. Contamination from other samples and sample breakage are other potential sources. Put each sample in a separate freezer bag.

What are the consequences of spilling methanol?

If methanol is spilled from vials before or after sample collection the lab results will be skewed and incorrect. When a small amount of methanol is spilled during the sampling process, it is necessary to resample using a fresh vial. If methanol is spilled during shipping to the laboratory, the DNR will ask for resampling.

Will rain water entering the sample jar affect the results?

It may. Do not allow rain water to enter a sample jar. Suspend sampling if it is raining hard.

How should I ship the jars to the lab?

Methanol must be shipped in accordance with the attached shipping instructions. To pack the jars in an absorbent material and still keep them on ice, place the jars in an insulated cooler with ice or other coolant and then place the cooler in a slightly larger cardboard box. Fill the space between the cooler and the box with the absorbent material (e.g. vermiculite).

Is there a shelf-life for unused methanol jars?

The shelf-life may be specified by the lab providing the jars, and could be 15-30 days.

What companies provide jars containing methanol and other equipment?

Tared sample jars containing methanol should be obtained from the laboratory that will perform the analysis. A list of commercial labs certified for VOC analysis is available from the DNR at the address shown in the references.

ADDENDUM 8 - SHIPPING METHANOL

The Wisconsin Department of Natural Resources' "Modified GRO Method for Determining Gasoline Range Organics" requires laboratories and samplers to ship sample vials with small amounts, (25 m1s), of methanol for in field preservation of samples.

Methanol is considered a hazardous material by the U.S. Department of Transportation. Methanol shipments must follow Title 49 of the Code of Federal Regulations (49 CFR). However, methanol shipped in small amounts qualifies for a small quantity exemption (section 173.4).

Title 49 CFR is a lengthy document. The following is a summary of the requirements for shipping samples. Consultants and laboratories should refer to the code for a complete review of the requirements.

1) Maximum volume per vial is 30 mls.

2) A vial must not be full (of methanol).

3) Vials must be securely packed with cushioning and surrounded by an absorbent material such as vermiculite.

4) Packaging must be strong enough to hold up to the intended use, (see specifications in 173.4 6i).

5) The maximum package weight is 65 pounds.

6) The package must be marked with the following statement:

"This package conforms to conditions and limitations specified in 49 CFR 173.4"

Refer to section 173.4 of Title 49 CFR for detailed information on these requirements. In addition, it would be prudent to mark these packages with the words 'THIS SIDE UP" and arrows, in case the vials are improperly sealed.

If the methanol has leaked from the vials during transport to the lab, the Department of Natural Resources or DATCP will ask for resampling.

ADDENDUM 9 - GEOGRAPHIC REFERENCING USING THE PUBLIC LANDS SURVEY SYSTEM

The public lands survey system (PLS) is a system of land surveying established by the United States Government in the 19th century. It is one of the most Common systems of geo-referencing in use in Wisconsin and is the easiest system to learn for the purpose of providing the legal description of the site location for underground storage tank closure assessments.

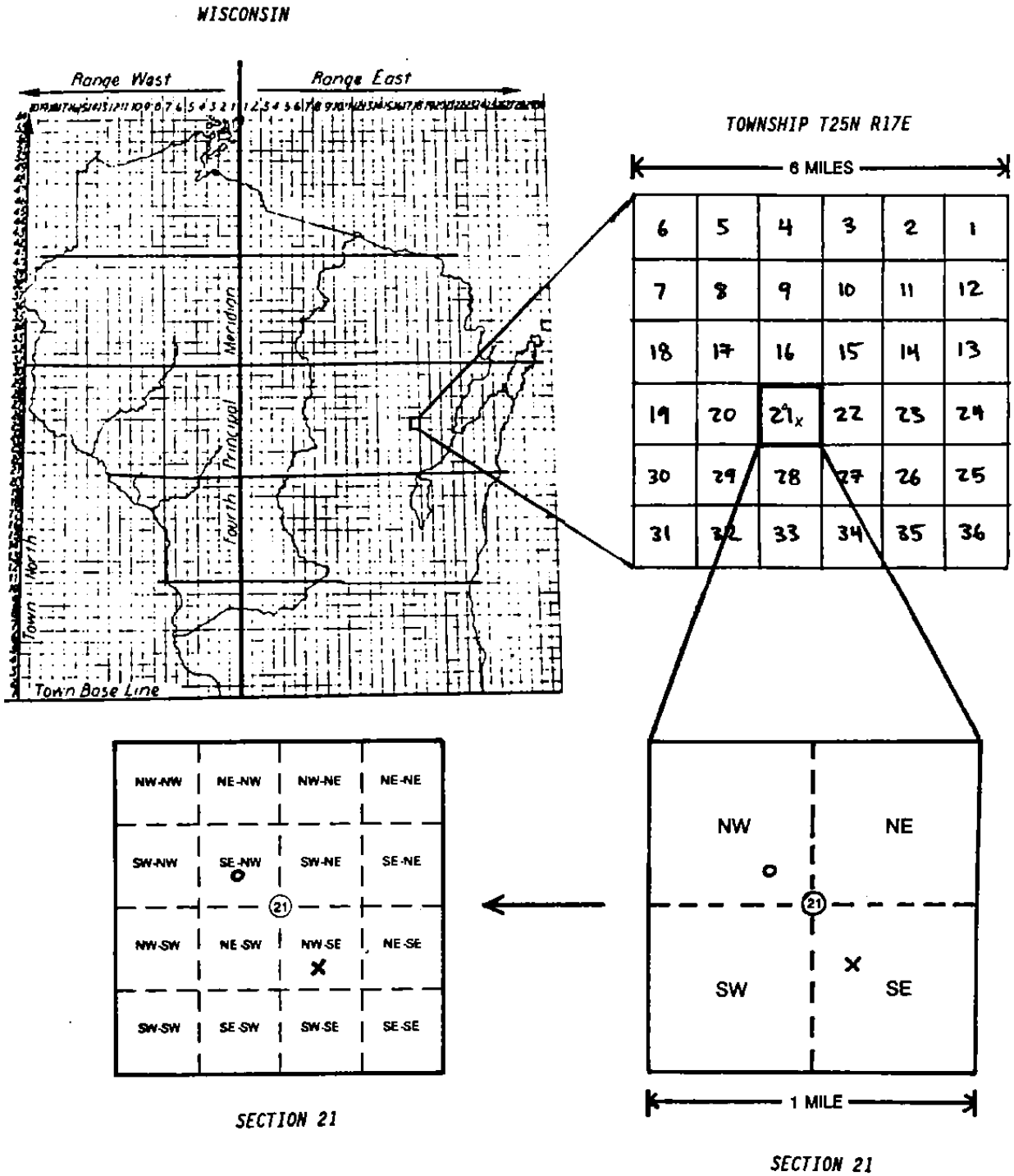
The parts of the reference system from largest to smallest are the township, range, section, quarter section, and quarter-quarter section. A township is a 6-mile by 6-mile square of land. The land area of Wisconsin, which is approximately 325 miles long and 300 miles wide, contains over 400 townships. Townships are identified using the PLS reference system, which is similar to a Cartesian coordinate system. In the PLS system, the “x-axis” (east-west) is the town base line and the “y-axis” (north-south) is the fourth principal meridian. Any township in Wisconsin can be identified using an ordered pair consisting of a township number and a range number. Township numbers are not unique to a particular township. For example, 50 different townships can have the same township number. Only the combination of a township number and range number uniquely identifies a township.

Townships north of the town base line are followed by an N and townships south of it are followed by an S. Since all townships in Wisconsin are north of the town base line, all Wisconsin township numbers are followed by an N. Townships east of the fourth principal are followed by an E and townships west of it are followed by a W. For example, T1N R2W designates the township in Grant county occupied by the southwestern-most corner of Wisconsin. T34N R30E designates the township in Door county occupied by the northeastern tip of Washington Island. Note that, although the town base line runs east-west, township numbers change in the north-south direction. Similarly, although the fourth principal meridian runs north-south, the range numbers change in the east-west direction.

Sections are 1-mile by 1-mile squares of land. Each township contains 36 sections. The sections are numbered in a standard zigzag order, which was used by field crews conducting traverses. The sections are further divided into quarters and quarter-quarters (i.e. sixteenths). The four quarters are referenced using the four comers of the compass: northeast (NE), southeast (SE), southwest (SW), and northwest (NW). A quarter-quarter is referenced by first identifying the quarter within which it lies and then referencing the four comers of the compass again. For example, X in the figure is in the NW quarter-quarter of the SE quarter of section 21. 0 in the figure is in the SE quarter-quarter of the NW quarter. It is possible to further subdivide quarter-quarters into quarter-quarter-quarters following the same pattern. The length of a quarter-quarter-quarter is 1/16 of a mile or 330 feet. In summary, the legal description of X is NW 1/4, SE 1/4, Section 21, T25N, R17E.

The legal description of a particular site can be determined by locating the site on a United States Geologic Survey topographic map or a plat book. USGS maps can be purchased from the USGS as well as from the Wisconsin Geologic and Natural History Survey (WGNHS) in Madison. Plat books can be purchased from Rockford Map Publishers and are available for viewing at most libraries and town halls.

Note: it is <u>not</u> necessary to provide detailed metes and bounds to satisfy the legal description requirement (e.g. PTNE 1/4 SEC 7 T7N R20E COM EI/4 COR NO 44'E 832.68 FT THE BGN NO 44'E 505 FIP N89 23'W 189.86 FT S61 01'W 210 FTS51 33'W 150 FT S28 58'E 387.81, etc.) However, such descriptions do provide all or part of the necessary information (shown in bold).


WISCONSIN
Range West
Range East
Fourth Principal Meridian
Town North
Town Base Line
TOWNSHIP T25N R17E
6 MILES
6 5 4 3 2 1
7 8 9 10 11 12
18 17 16 15 14 13
19 20 21 22 23 24
30 29 28 27 26 25
31 32 33 34 35 36
NW-NW NE-NW NW-NE NE-NE
SW-NW SE-NW SW-NE SE-NE
21
NW-SW NE-SW NW-SE NE-SE
SW-SW SE-SW SW-SE SE-SE
SECTION 21
NW NE
SW SE
21
1 MILE
SECTION 21

Complete One Form for Each System Service Event

The information you provide may be used for secondary purposes [Privacy Law, s.15.04 (1) (m), Wis. Stats.]

TANK SYSTEM SERVICE AND CLOSURE ASSESSMENT REPORT

CHECK ONE:

☐ **UNDERGROUND**

☐ **ABOVEGROUND**

FOR PORTIONS OF THE FORM THAT DO NOT APPLY, CHECK THE 'N/A' BOX

RETURN COMPLETED CHECKLIST TO:

Wisconsin Department of Agriculture, Trade and Consumer Protection
Bureau of Weights and Measures
P.O. Box 7837
Madison, WI 53707-7837

Part A – To be completed by contractor performing repair or closure

A. TYPE OF SERVICE ☐ CLOSURE ☐ REPAIR/UPGRADE ☐ CHANGE-IN-SERVICE

Indicate portion of system being serviced if a repair, upgrade or change-in-service is being performed

☐ Remote fill ☐ Tank ☐ Piping ☐ Transition/containment sump ☐ Spill bucket ☐ Dispenser

B. IDENTIFICATION (Please Print)

1. Facility Name		2. Owner Name	
Facility Street Address (not P.O. Box)		3. Contact Name	Job Title
Municipality		Mailing Address	
☐ City ☐ Village ☐ Town of:		Post Office	State Zip Code
Zip Code	County	County	Telephone No. (include area code) ( )
4. Primary Service Contractor Section A above		Service Contractor Street Address	
Service Contractor Telephone No. (include area code) ( )		Service Contractor City, State, Zip Code	

C. TANK SYSTEM DETAIL (Complete for all service activities)

a	b	c	d	e	f	g		h	
Tank ID #	Type of Closure[1]	Tank Material of Construction	Piping Material of Construction	Tank Capacity (gallons)	Contents[2]	Release - System Integrity Compromised (e.g. holes, cracks, loose connection, etc)?		If "Yes" to "g", Then Specify Source & Cause of Release[5]	
								Source of Release[3]	Cause of Release[4]
						☐ Y	☐ N		
						☐ Y	☐ N		
						☐ Y	☐ N		
						☐ Y	☐ N		
						☐ Y	☐ N		
						☐ Y	☐ N		

1. Indicate type of closure: P = Permanent, TOS = Temporarily Out-of-Service, CIP = Closure In-Place
2. Indicate type of product: DL = Diesel, LG = Leaded Gasoline, UG = Unleaded Gasoline, FO = Fuel Oil, GH = Gasohol, AF = Aviation Fuel, K = Kerosene, PX = Premix, WO = Waste/Used Motor Oil, FCHZW = Flammable/Combustible Hazardous Waste, OC = Other Chemical (indicate the chemical name(s):

CAS number(s): _____ _____ _____ _____

3. Source of release: T = tank, P = piping, D = dispenser, STP = submersible turbine pump, DP = delivery problem, O = other, UNK = Unknown
4. Cause of release: S = spill, O = overfill, POMD = physical or mechanical damage, C = corrosion, IP = installation problem, O = other, UNK = Unknown
5. Has release been reported to the Department of Natural Resources? ☐ Yes ☐ No ☐ Release not evident at this time

D. CLOSURES (Check applicable box at right in response to all statements in section D)

Written notification was provided to the local agent 15 days in advance of closure date. ☐ Y ☐ N

All local permits were obtained before beginning closure. ☐ Y ☐ N ☐ NA

☐ UST Form ERS-7437 or ☐ AST Form ERS-8731 filed by owner with the Dept. of Commerce indicating closure. ☐ Y ☐ N ☐ NA

NOTE: TANK INVENTORY FORM ERS-7437 or ERS-8731 SIGNED BY THE OWNER MUST BE SUBMITTED WITH EACH CLOSURE or CHANGE-IN-SERVICE CHECKLIST

D.1 ☐ TEMPORARILY OUT-OF-SERVICE 1. Product removed.	**Remover Verified**	**Inspector Verified**	**NA**
a. Product lines drained into tank (or other container) and liquid removed, and	☐Y ☐N	☐Y ☐N	☐
b. All product removed to bottom of suction line, OR	☐Y ☐N	☐Y ☐N	☐
c. All product removed to within 1" of bottom.	☐Y ☐N	☐Y ☐N	☐
2. Fill pipe, gauge pipe, tank truck vapor recovery fittings, and vapor return lines capped.	☐Y ☐N	☐Y ☐N	☐
3. All product lines at the islands or pumps located elsewhere are removed and capped, OR	☐Y ☐N	☐Y ☐N	☐
4. Dispensers/pumps left in place but locked and power disconnected.	☐Y ☐N	☐Y ☐N	☐

5. Vent lines left open.	☐Y ☐N	☐Y ☐N	☐
6. Inventory form filed indicating temporarily out-of-service (TOS) closure.	☐Y ☐N	☐Y ☐N	☐

D.2. ☐ CLOSURE BY REMOVAL OR IN-PLACE

1. General Requirements

a. Product from piping drained into tank (or other container).	☐Y ☐N	☐Y ☐N	☐
b. Piping disconnected from tank and removed.	☐Y ☐N	☐Y ☐N	☐
c. All liquid and residue removed from tank using explosion-proof pumps or hand pumps.	☐Y ☐N	☐Y ☐N	☐
d. All pump motors and suction hoses bonded to tank or otherwise grounded.	☐Y ☐N	☐Y ☐N	☐
e. Fill pipes, gauge pipes, vapor recovery connections, submersible pumps and other fixtures removed.	☐Y ☐N	☐Y ☐N	☐
f. Vent lines left connected until tanks purged.	☐Y ☐N	☐Y ☐N	☐
g. Tank openings temporarily plugged so vapors exit through vent.	☐Y ☐N	☐Y ☐N	☐
h. Tank atmosphere reduced to 10% of the lower flammable range (LEL) - see Section E.	☐Y ☐N	☐Y ☐N	☐

2. Specific Closure-by-Removal Requirements

a. Tank removed from excavation after **PURGING/INERTING**; placed on level ground and blocked to prevent movement.	☐Y ☐N	☐Y ☐N	☐
b. Tank cleaned before being removed from site.	☐Y ☐N	☐Y ☐N	☐
c. Tank labeled in 2" high letters after removal but before being moved from site.	☐Y ☐N	☐Y ☐N	☐
NOTE: **COMPLETE TANK LABELING SHOULD INCLUDE WARNING AGAINST REUSE; FORMER CONTENTS; VAPOR STATE; VAPOR FREEING TREATMENT; DATE.**			
d. Tank vent hole (1/8" in uppermost part of tank) installed prior to moving the tank from site.	☐Y ☐N	☐Y ☐N	☐
e. Site security is provided while the excavation is open.	☐Y ☐N	☐Y ☐N	☐

3. Specific Closure-In-Place Requirements

NOTE: **CLOSURES IN-PLACE ARE ONLY ALLOWED WITH THE PRIOR WRITTEN APPROVAL OF THE DEPARTMENT OF SAFETY & REGULATORY SERVICES OR LOCAL AGENT.**

a. Tank properly cleaned to remove all sludge and residue.	☐Y ☐N	☐Y ☐N	☐
b. Solid inert material (sand, cyclone boiler slag, or pea gravel recommended) introduced and tank filled.	☐Y ☐N	☐Y ☐N	☐
c. Vent line disconnected or removed.	☐Y ☐N	☐Y ☐N	☐
d. Inventory form filed by owner with the DATCP indicating closure in-place.	☐Y ☐N	☐Y ☐N	☐

E. REPAIR, UPGRADE OR CHANGE-IN-SERVICE

Written notification was provided to the local agent 15 days in advance of service date.	☐ Y	☐ N	☐ NA
All local permits were obtained before beginning service.	☐ Y	☐ N	☐ NA
Form ERS-7437 or ☐ ERS-8731 filed by owner with the DATCP indicating change-in-service.	☐ Y	☐ N	☐ NA

F. METHOD OF VAPOR FREEING OF TANK

☐ Displacement of vapors by eductor or diffused air blower.
Eductor driven by compressed air, bonded and drop tube left in place; vapors discharged minimum of 12 feet above ground.
Diffused air blower bonded and drop tube removed. Air pressure not exceeding 5 psig.

☐ Inert gas using dry ice or liquid carbon dioxide.

☐ Inert gas using CO_2 or N_2 **NOTE: INERT GASSES PRODUCE AN OXYGEN DEFICIENT ATMOSPHERE. LEL METERS MAY NOT FUNCTION ACCURATELY. THE TANK MAY NOT BE ENTERED IN THIS STATE WITHOUT SPECIAL EQUIPMENT.**
Gas introduced through a single opening at a point near the bottom of the tank at the end of the tank opposite the vent.
Gas introduced under low pressure not to exceed 5 psig to reduce static electricity. Gas introducing device grounded.

☐ Readings of 10% or less of the lower flammable range (LEL) or 0% oxygen obtained before removing tank from ground.

☐ Tank atmosphere monitored for flammable or combustible vapor levels prior to and during cleaning and cutting.

☐ Calibrate combustible gas indicator and/or oxygen meter prior to use. Drop tube removed prior to checking atmosphere. Tank space monitored at bottom, middle and upper portion of tank.

G. REMOVER/CLEANER INFORMATION

Remover/Cleaner Name (print)	Remover/Cleaner Signature	Certification No.	Date Signed

I attest that the procedures and information which I have provided as the tank closure contractor are correct and comply with SPS 310.

Company expected to perform soil contamination assessment _____

H. INSPECTOR INFORMATION

Inspector Name (print)	Inspector Signature	Inspector Cert #	LPO Agency #:

FDID # For Location Where Inspection Performed	Inspector Telephone Number	Date Signed

Part B – To be completed by environmental professional

Submit original Part B to the WDNR along with a copy of Part A

I. TANK-SYSTEM SITE ASSESSMENT (TSSA)

Site Name: _____

Address: _____

Note: Site name and address must match with Part A Section 1.

To determine if a TSSA is required, see SPS 310 and section II part B of *ASSESSMENT AND REPORTING OF SUSPECTED AND OBVIOUS RELEASES FROM UNDERGROUND AND ABOVEGROUND STORAGE TANK SYSTEMS*.

If a TSSA is required, then follow the procedures detailed in *ASSESSMENT AND REPORTING OF SUSPECTED AND OBVIOUS RELEASES FROM UNDERGROUND AND ABOVEGROUND STORAGE TANK SYSTEMS.*

1. Site Information

a. Has there been a previously documented release at this site? ☐ Y ☐ N

If yes, provide the PECFA # _____, or DNR BRRT's # _____.

b. Number of active tanks[1] at facility prior to completion of current services USTs _____ ASTs _____.

(NOTE 1: Do not include previously closed systems or system components.)

c. Excavation/trench dimensions (in feet). (Photos must be provided.)

EXCAVATION/TRENCH #	LENGTH	WIDTH	DEPTH

2. Visual Excavation/Trench Inspection (Photos must be provided for "Yes" responses, except item b.)

Do any of the following conditions exist in or about the excavation(s)?

a. Stained soils: ☐ Y ☐ N b. Petroleum odor: ☐ Y ☐ N c. Water In excavation/trench: ☐ Y ☐ N

d. Free product in the excavation/trench: ☐ Y ☐ N e. Sheen or free product on water: ☐ Y ☐ N

3. Geology/Hydrogeology

a. Depth to groundwater_____ feet b. Indicate type of geology[2] _____

(Note 2: Use these symbols individually or in combination as appropriate: C = Clay, SLT = Silt, S = Sand, Gr = Gravel)

4. Receptors

a. Water supply well(s) within 250 feet of the facility? ☐ Y ☐ N If yes, specify _____

b. Surface water(s) within 1000 feet of the facility? ☐ Y ☐ N If yes, specify _____

5. Sampling

a. Follow the procedures detailed in *ASSESSMENT AND REPORTING OF SUSPECTED AND OBVIOUS RELEASES FROM UNDERGROUND AND ABOVEGROUND STORAGE TANK SYSTEMS*.

b. Complete Tables 1 and 2 as appropriate. (Attach chain-of-custody and laboratory analytical reports.)

c. Attach a detailed map of site features and sample locations.

J. NOTE RELEVANT OBSERVATIONS, SPECIFIC PROBLEMS OR CONCERNS BELOW

_____

_____

_____

_____

_____

_____

_____

_____

TABLE 1 SOIL FIELD SCREENING & GRO/DRO LABORATORY ANALYTICAL RESULTS-FOR PETROLEUM PRODUCTS

Sample ID #	Sample Location & Soil/Geologic Description	Sample Collection Method				Depth Below Tank/Piping (feet)	Field Screening Result (ppm)		
		Grab	Shelby Tube	Direct Push	Split Spoon				
		☐	☐	☐	☐				
		☐	☐	☐	☐				
		☐	☐	☐	☐				
		☐	☐	☐	☐				
		☐	☐	☐	☐				
		☐	☐	☐	☐				
		☐	☐	☐	☐				
		☐	☐	☐	☐				
		☐	☐	☐	☐				
		☐	☐	☐	☐				
		☐	☐	☐	☐				
		☐	☐	☐	☐				
		☐	☐	☐	☐				
		☐	☐	☐	☐				
		☐	☐	☐	☐				

TABLE 2 SOIL LABORATORY ANALYTICAL RESULTS-FOR PETROLEUM PRODUCTS

Sample ID #	BENZENE	TOLUENE	ETHYLBENZENE	MTBE	TRIMETHYL - BENZENES (TOTAL)	XYLENES (TOTAL)	NAPHTHALENE	CHLORINATED SOLVENTS
	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg

K. TANK-SYSTEM SITE ASSESSMENT INFORMATION

❑ As a tank-system site assessor certified under Wis. Admin. Code section SPS 305.83, it is my opinion that there is no indication of a release of a regulated substance to the environment.

❑ Sampling at the site indicates there has been a release to the environment. Pursuant to Wis. Admin. Code section SPS 310.585 (2) (a) and Wis. Stats. section 292.11 (2) (a), the owner or operator or contractor performing work under chapter SPS 310 shall immediately report any release of a regulated substance to the Wisconsin Department of Natural Resources. Failure to do so may result in forfeitures of a minimum of $10 and a maximum of $5000 for each violation under Wis. Stats. section 101.09 (5). Each day of continued violation and each tank are treated as separate offenses.

Tank-System Site Assessor Name (print)	Tank-System Site Assessor Signature	Certification Number #
Tank-System Site Assessor Telephone Number	Date Signed	Company Name