

TA-21

TA-21  
Building 21-257  
Fuel Oil Spill  
from an AST  
(above ground  
Storage Tank)

### Sampling and Analysis Plan

### Amendment 2

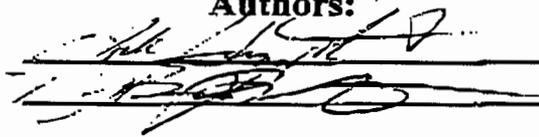
### TA-21-357 Continuous Coring For Fuel Oil Assessment

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Project Numbers: 5399.12 and 5383.06

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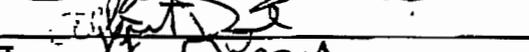


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### 1.0 Purpose

The purpose of this amendment is to provide guidance in conducting additional subsurface assessment in support of the TA-21-357 Fuel Oil Assessment using a drill rig to collect core samples in areas determined to be contaminated during previous assessment activities.

### 2.0 Objective

The first objective of the drilling is to better define the vertical extent of contamination in the area determined to be most heavily contaminated based on visual observations, soil analyses and GeoProbe sampling efforts during the pipe exposure sampling and Geo Probe sampling tasks. The second objective of the drilling is to determine a contaminant profile along fractures identified in the area of contamination.

### 3.0 Sample Collection

A CME-75 drill rig will be used to collect minimum 2" diameter core samples. One vertical boring (see Figure 1-1) will be advanced through the area identified with the highest level of contamination. Two additional angle borings (#2 and #3) will be advanced through the contaminated area, the first near the trench and the second stepped out towards the tank. Proposed sampling locations are provided on the attached site diagram. The vertical hole (#1) will provide data on the depth of contamination in the most contaminated area. The angle sample will provide data on the concentration profile in fractures moving away from the suspected source of the contamination.

After collection, each coring will be logged by a geologist to document depths at which soil types change and identify any fractures that may be encountered. The core samples will then be divided into samples for laboratory analysis with an emphasis on segregating samples from the various soil types encountered. It is anticipated that the first sample will be collected from the fill soil just above the fill/tuff interface, the second sample from the tuff, and subsequent samples from any differing soil type layers encountered below the tuff. Because the number of samples will be dependant upon the soil/tuff profile encountered, the exact number of samples is unknown.

Parameter	Sample Container	Preservative
TPH-DRO	8 oz glass wide mouth	Cool to 4° C and 14 day holding time.
PAH's	8 oz Amber glass wide mouth	Cool to 4° C, no head-space in jar and a 14 day holding time.
BTEX	4 oz Amber glass wide mouth	Cool to 4° C, no head-space in jar and a 14 day holding time.

### 4.0 Analysis and Quality Control.

Samples collected will be labeled and handled in accordance with the procedures outlined in the Sampling and Analysis Plan (SAP). The chain of custody, and decontamination requirements in the SAP will also apply to the drilling activities. The sampling team will attempt to collect one field duplicate sample from the contaminated zone of the fill material and the tuff. Collection of the duplicates will be dependent upon the amount of soil present in the core sample to represent these zones.

Each sample collected will be analyzed for diesel range organics (TPH-DRO) using method SW846 8015B. Two samples from soil or tuff zones with indications of contamination will be

analyzed for polynuclear aromatic hydrocarbons (PAH) using method SW846 8310(HPLC) or SW846 8270C and benzene, toluene, ethylbenzene, and xylenes (BTEX, Nathalene and MTBE) using method SW846 8021 or SW846 8260B.

### 5.0 Data Analysis

Drilling locations will be surveyed using GPS for inclusion on the project maps being developed by (JCNNM-UMAP). The concentration profile will be diagrammed to determine the probable depth of contamination. The horizontal contamination profile along any identified fissures will be diagrammed to determine the likelihood of contaminant travel within the fissures.

Figure 1-1. Locations for vertical and angled coring and sampling for contamination assessment at TA-21-357 and TA-21-57.

