GeoEngineers
523 East Second Avenue
Spokane, Washington 99202
509.363.3125

April 26, 2019

Washington State Department of Ecology
4601 North Monroe Street
Spokane, Washington 99205

Attention: Sandra Treccani

Subject: Sampling and Analysis Plan
Carnation Dairies Spokane
444 West Cataldo Avenue
Spokane, Washington
File No. 0110-148-16

This sampling and analysis plan (SAP) presents the sampling procedures that are planned for the Carnation Dairies Spokane (herein designated the "project site") in downtown Spokane, Washington. Activities include collecting and analyzing samples from two test pits and submitting the samples for laboratory chemical analysis.

The project site is located at 444 West Cataldo Avenue, in Spokane, Washington. The project site is bounded by Cataldo Avenue to the south, Washington Street and Howard Street to the east and west and Dean Avenue to the north. The project site has been developed since the early 1900's and has undergone several modifications to the surface topography using fill materials (CH2M HILL 1999).

CH2M HILL, Inc. (CH2M) conducted a phase II environmental site assessment (ESA) at the project site in 1999, which included advancing 11 test pits on or near the project site. Petroleum contamination was identified in one test pit, TP-4, which was advanced in the area of former fuel dispensers identified in the phase I ESA conducted in 1998 (Leppo 1998). Heavy petroleum staining and odor were evident approximately 4 feet below ground surface (bgs) where bedrock was encountered. The contamination appeared to extend to the foundation of the dairy garage to the west and approximately 8 feet to the north. Analytical results indicated gasoline-range petroleum hydrocarbons (GRPH), diesel-range petroleum hydrocarbons (DRPH) and oil-range petroleum hydrocarbons (ORPH) at concentrations greater than the Model Toxics Control Act (MTCA) Method A cleanup levels (CH2M 1999).

GeoEngineers proposes to advance two test pits to investigate if the petroleum contamination near TP-4 (Site Plan and Proposed Test Pit Locations, Figure 1) is still present. The following sections describe the methods that will be employed to assess the area of the former fuel dispensers.

COLLECTING SOIL SAMPLES FROM TEST PITS

Test pits will be advanced to bedrock, approximately 4 feet bgs, using an excavator and will be supervised by an appropriately trained GeoEngineers field representative. Each test pit will be monitored by a GeoEngineers field representative to observe and classify the soil encountered and prepare a detailed log of each test pit. Soil encountered in the test pits will be classified in the field in accordance with ASTM International (ASTM) D 2488, the Standard Practice for Classification of Soils, Visual-Manual Procedure.

Soil from each test pit will be field-screened using visual observations, water sheen and headspace vapor measurements with a photoionization detector (PID) to assess possible presence of petroleum-related contaminants. One soil sample exhibiting the greatest indications of petroleum contamination from each test pit will be collected by placing the soil in laboratory-prepared container, labeled with a waterproof pen and placed on "blue ice" or double-bagged wet ice in a clean plastic-lined cooler. Soil samples will be collected from the middle of the excavator bucket using clean nitrile gloves. Each sample will be documented on the test pit log and chain-of-custody (COC), which will include sample name, sample collection date and time, sample type, sample depth, requested analytical methods and sampler name. Samples will be submitted to TestAmerica in Spokane Valley, Washington for laboratory analysis for the following constituents:

- GRPH using Northwest Method NWTPH-Gx;
- DRPH and ORPH using Northwest Method NWTPH-Dx; and
- Benzene, toluene, ethylbenzene, xylenes (BTEX) using Environmental Protection Agency (EPA) Method 8260 if field screening reveals a detection on the PID greater than 10.0 parts per million (ppm).

Soil samples submitted for BTEX will be collected consistent with EPA Method 5035A and preserved in accordance with Washington State Department of Ecology (Ecology) Memorandum 5 (Ecology 2004) and EPA (1998).

Sampling equipment will be decontaminated between each sampling attempt as described below. The sample coolers will be delivered to TestAmerica under standard COC procedures.

DECONTAMINATION PROCEDURES

The objective of the decontamination procedures described herein is to minimize the potential for cross-contamination between sample locations.

Sampling equipment will be decontaminated in accordance with the following five-step procedure before each sampling attempt and/or measurement.

1. Brush equipment with a nylon brush to remove large particulate matter
2. Rinse with potable tap water
3. Wash with non-phosphate detergent solution (Liquinox® and potable tap water)
4. Rinse with potable tap water

5. Rinse with distilled water

SAMPLE LOCATION CONTROL

Horizontal sample control (boring locations) will be established across the project site by using an iPad and GISPro, a global positioning system (GPS) application package. Use of the iPad and GISPro application package will allow for meter accurate to approximately 15 lateral feet.

REFERENCES

CH2M HILL, Inc. 1999. "Phase II Environmental Site Assessment Limited Subsurface Exploration, 'Howard Street Property.'" April 1999.

Leppo Consultants, Inc. 1998. "Phase I Environmental Site Assessment, Mallon Street Property." November 1998.

U.S. Environmental Protection Agency. 1998. "Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW_846)." Revision 5, April.

Washington State Department of Ecology. 2004. "Collecting and Preparing Soil Samples for VOC Analysis."

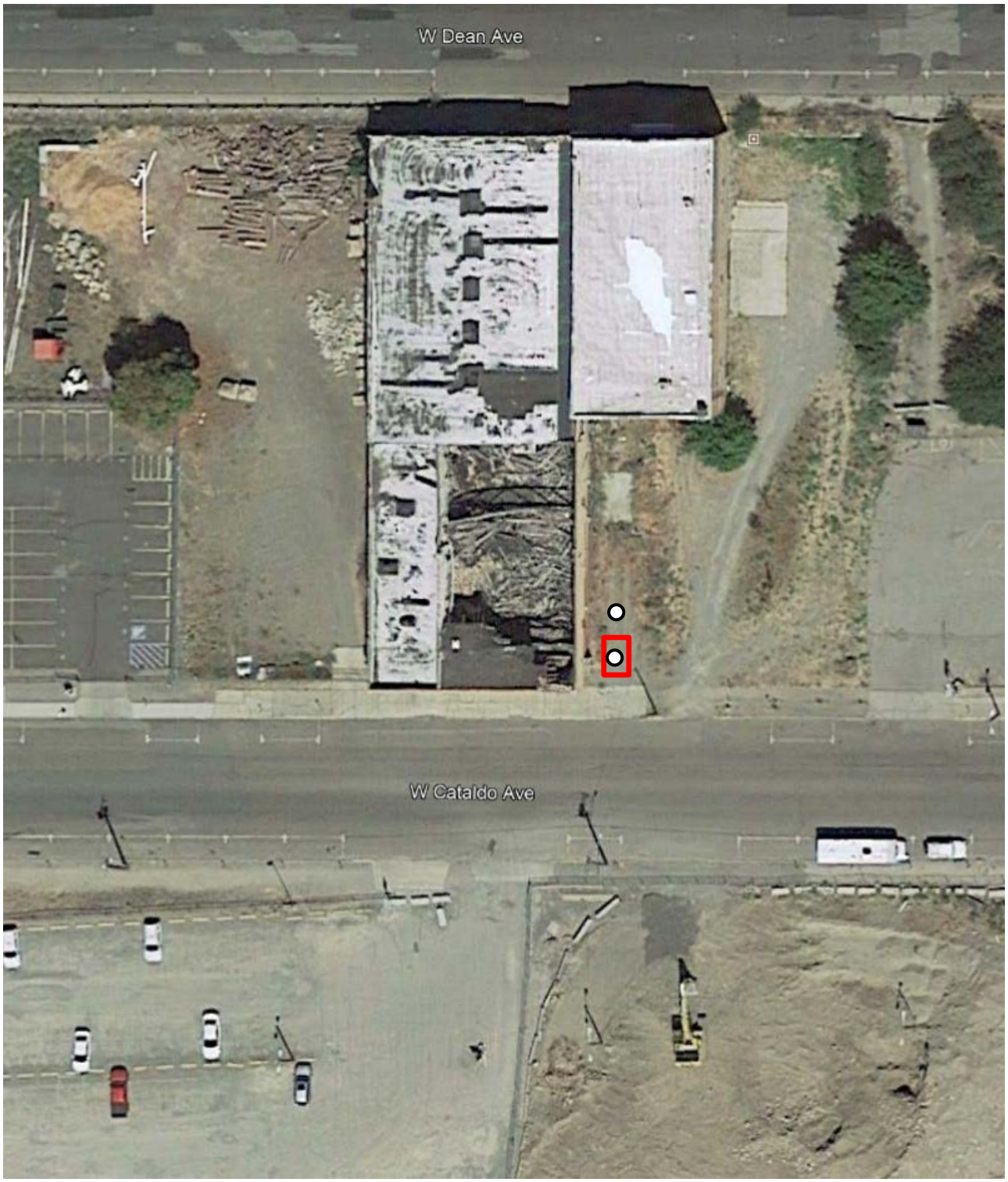
Sincerely,
GeoEngineers, Inc.

Jedidiah R. Sugalski, PE
Environmental Engineer

Bruce D. Williams
Principal

JRS:BDW:tjh

Attachments:
Figure 1. Site Plan and Proposed Test Pit Locations



Legend:

- 1999 TP-4 approximate location
- Proposed test pit

N
W E
S

Not to Scale

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Site Plan and Proposed Test Pit Locations

444 West Cataldo Avenue
Spokane, Washington

GeoEngineers

Figure 1

0110-148-06 Date Exported: 04/04/2019