

FORMER C&D POWER SYSTEMS (C&D BATTERIES)

HUGUENOT, NEW YORK

**Surface Soil and Pavement
Sampling and Analysis Plan**

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1.0 INTRODUCTION

This sampling plan details the proposed sampling locations and the sampling and analytical procedures that will be implemented during the collection and analysis of surface soil samples and samples that will be collected from the breaks in pavement areas from the former C&D Technologies, Inc. (C&D), facility in Huguenot, New York. The surface soil samples will be collected from areas on and adjacent to the former C&D facility.

The intent of the surface soil sampling program is to evaluate the areal extent of soils with lead concentrations above the New York State recommended soil cleanup objective (SCO) of 400 mg/Kg for unrestricted residential use (6 NYCRR Part 375) beyond the former C&D property boundary. The purpose of the on-site pavement sampling program is to identify possible lead source areas.

Proposed sample locations are depicted on Drawing No.1 (Existing Soil Lead Data and Proposed Sampling Locations). The proposed sample locations were selected following an analysis of existing analytical data from soil samples that have been collected and analyzed at the facility. Existing site soil sample results are summarized on Drawing No. 1.

The following sections detail the sampling and analytical procedures that will be utilized to conduct the investigation. Sample locations and procedures are presented in Section 2, sample handling/chain of custody procedures are detailed in Section 3 and proposed analyses and analytical methods are provided in Section 4. All samples will be collected following the procedures presented in the New York State Department of Environmental Conservation (NYSDEC) approved "Remedial Investigation/Feasibility Study Work Plan (Earthtech, April 1999), which included a Sampling and Analysis Plan and a Health and Safety Plan.

2.0 SAMPLE COLLECTION

2.1 Soil Samples

Samples will generally be collected every 100 linear feet at distances of approximately one foot and 30 feet outside the chain-link fence that demarks the property boundary. However, along the south side of the site sampling will be focused on a shallow drainage feature that conveys stormwater runoff off the site to the southeast. Existing soil data indicates that with the exception of soils around this drainage feature, to the south of the site do not exhibit lead concentrations above 400 mg/Kg. Additionally, sampling to the east of the site will be targeted around samples that have exhibited lead concentrations above 400 mg/Kg.

At each proposed sample location a surface soil sample will be collected from 0-6" below the surface following removal of any surface vegetation/duff. The sample will be thoroughly homogenized prior to placement in the sample container following the cone and quarter procedure. This procedure involves thoroughly mixing the material into a single pile (i.e., cone) using dedicated hand trowels, by continually mixing the material and shaping it into a cone. Material from the cone base will be repeatedly placed on the top of the cone while maintaining the cone shape. The process will be continued until the sample has been completely mixed. The sample will then be divided into four equal quarters and the sample container filled by taking equal aliquots from each quarter.

2.2 Pavement Soil Samples

Samples will be collected from breaks in the pavement that were identified during a site reconnaissance conducted on January 31, 2008. Proposed sample locations are depicted on Drawing No. 1. Samples will be collected following the procedures described in Section 2.1.

3.0 SAMPLE LABELING, HANDLING, AND SHIPPING

3.1 Sample Identification/Labeling

All samples will be assigned a unique identification code consisting of the project, sample type, sample number or location, and additional identification codes (as needed). An example of the code used for the demolition debris samples is identified below.

Example Soil Samples

C&D-SS-1

C&D
Project
sample

SS-
Surface Soil

1-011008
Sample No and Date (January 10, 2008)

Example Pavement Samples

C&D-PS-1

C&D
Project
sample

PS-
Surface Soil

1-011008
Sample No and Date (January 10, 2008)

3.2 Containers, Preservation, and Holding Times

All sample containers used will be of traceable quality supplied by the laboratory. The selection of sample containers used to collect the samples is based on the following considerations:

- sample matrix;
- analytical methods;
- potential contaminants of concern;
- reactivity of container material with sample; and
- QA/QC requirements.

The required containers, preservatives and holding times will conform to the NYSDEC, June 2005 Analytical Services Protocol (ASP)/ Contract Laboratory Procedures (CLP) requirements. No chemical preservative is required for the bulk solid samples, although the samples will be kept on ice in a cooler at a temperature of 4°C ($\pm 2^\circ\text{C}$).

3.3 Chain-of-Custody Protocol and Shipping Requirements

The sampling personnel upon sample collection will initiate a chain-of-custody record. The sampling chain of custody is initiated at the point of sample collection and documents their return to the laboratory for analysis. The Project Manager or designated representative will notify the laboratory of the anticipated schedule of upcoming field sampling activities. This notification will include information concerning the number and type of samples, as well as the anticipated date(s) of shipment of samples to the laboratory. The laboratory will be responsible for supplying insulated containers (typically coolers) for storing and shipping the samples. Field samplers receiving the sample containers check each cooler and inspect the contents for breakage upon receipt. All sample bottles within each shipping container are individually labeled with an adhesive identification tag provided by the laboratory.

Once the sample containers are filled, they are immediately placed in the cooler with sealed bags of ice (“wet ice”) or synthetic ice packs (“blue ice”) to maintain the samples at 4°C ($\pm 2^\circ\text{C}$). To the extent possible, the chain of custody is filled out prior going in the field. Following sample collection, the field sampler properly completes the chain of custody for each sample. The chain-of-custody forms are then signed and placed in a sealed plastic Ziploc bag in the cooler. The shipping containers are then closed and properly sealed and the cooler is shipped to the laboratory via an overnight courier or hand delivered under appropriate chain-of-custody procedures. Samples will be shipped within 24 hours of collection. Upon receipt of the coolers at the laboratory, the cooler’s contents are inspected and the chain of custody signed, thus accepting custody of the samples.

4.0 ANALYTICAL LABORATORY/ANALYTICAL METHODS

Samples will be submitted to Adirondack Environmental Laboratories, Inc. (AES), in Albany, New York. AES is a New York State Department of Health (NYSDOH), Environmental Laboratory Approval Program (ELAP), NYSDEC Analytical Services Protocol (ASP), Contract Laboratory Procedures (CLP) certified laboratory. All samples will be analyzed for total lead by the NYSDEC June 2005 ASP/CLP methodology. Table 1 provides a summary of the sampling and analysis program.

5.0 COMMUNITY AIR MONITORING PROGRAM

The collection of surface soil samples does not represent a significant ground intrusive activity and generation of air borne particulates or dust that could affect off-site downwind receptors is not anticipated. Therefore, continuous real-time particulate monitoring will not be conducted. However, visual monitoring of fugitive dust migration will be visually assessed during all work activities. If at any time any visible fugitive dust is generated then sampling activities will be suspended and will not continue until corrective measures to control fugitive dust have been implemented.

TABLES

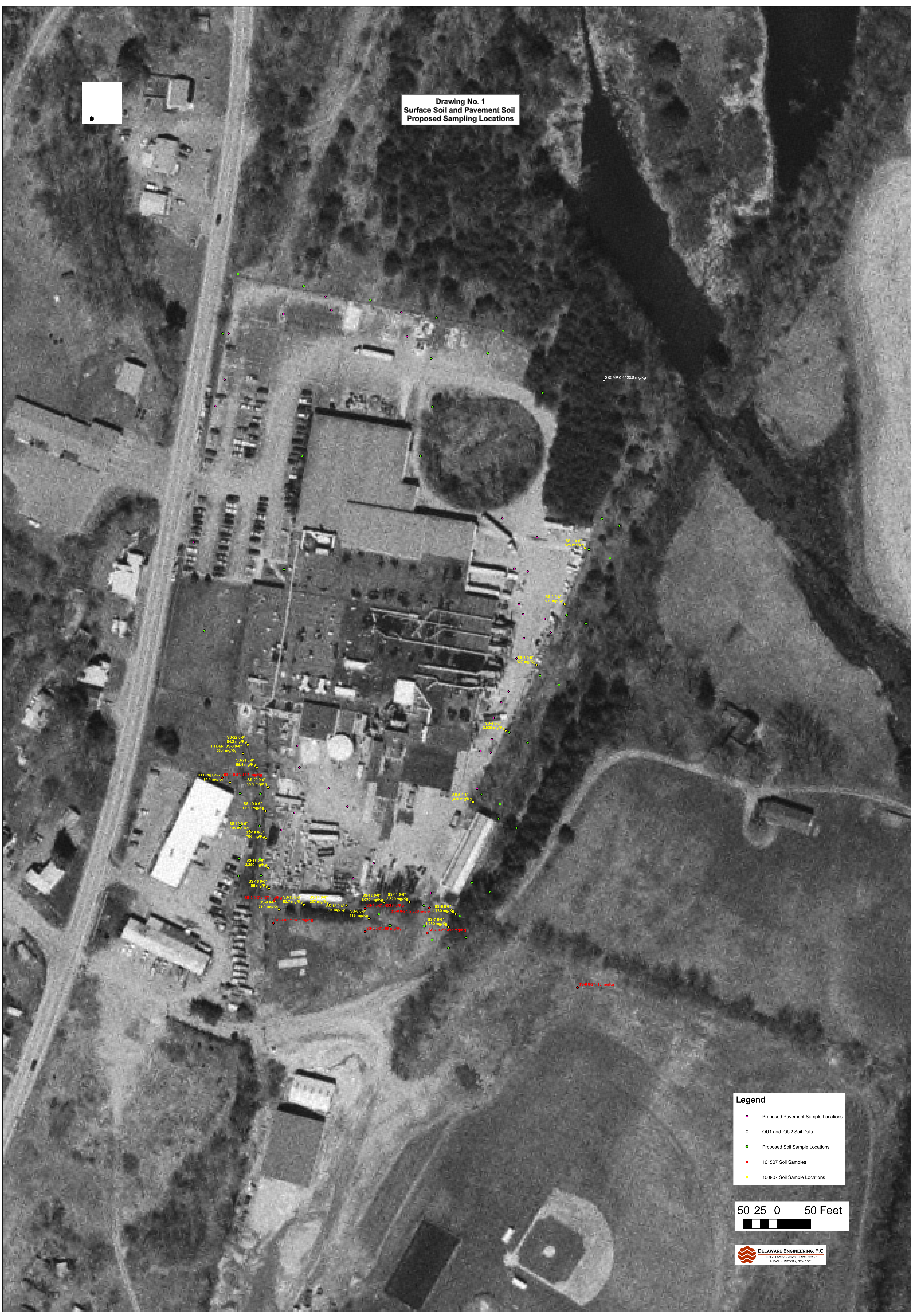
DRAWINGS

Table 1
Surface Soil and Pavement Sample Collection and Analysis
Former C&D Technologies, Inc., Facility
Huguenot, New York

Media	Number of Samples	Number of QA/QC Samples			Total Number of Samples	Analysis ⁵
		MS/MSD ¹	Field Dup ²	Equip Blank ³		
Surface Soil Samples	47	3	3	3	56	TAL Lead Only NYSDEC ASP/CLP 6/2005
Pavement Soil Samples	36	2	2	2	42	TAL Lead Only NYSDEC ASP/CLP 6/2005
TOTAL	83	5	2	2	98	

- Notes:**
- 1) QA/QC samples will include a matrix spike (MS) and matrix spike duplicate (MSD) sample at a frequency of not less than 5% (one MS/MSD pair per every 20 samples collected) for each matrix (aqueous and soil).
 - 2) A blind field duplicate sample will be collected at a frequency of one per every 20 samples for each matrix (aqueous and soil).
 - 3) Equipment blanks are not required when dedicated sampling equipment is used. If non-dedicated sampling equipment is used in the soil sampling program, equipment blanks will be analyzed at a frequency of not less than 5% (one equipment blank per every 20 samples collected).
 - 4) The analytical laboratory contracted to perform the sample analyses will be a New York State Department of Health (NYSDOH), Environmental Laboratory Approval Program (ELAP) certified laboratory holding the NYSDEC Analytical Services Protocol (ASP), Contract Laboratory Program (CLP) certification.

Drawing No. 1
Surface Soil and Pavement Soil
Proposed Sampling Locations



- Legend**
- Proposed Pavement Sample Locations
 - OU1 and OU2 Soil Data
 - Proposed Soil Sample Locations
 - 101507 Soil Samples
 - 100907 Soil Sample Locations

