



# Soil Screening Level (SSL) Technical Memorandum

## Formerly Utilized Sites Remedial Action Program Maywood Superfund Site

Prepared by:

Shaw Environmental, Inc.  
100 West Hunter Avenue  
Maywood, New Jersey 07607

Prepared for:



**US Army Corps  
of Engineers**

Contract No. DACW41-99-D-9001

October 2004, Revision 0



**SOIL SCREENING LEVEL (SSL) TECHNICAL MEMORANDUM**

**FUSRAP MAYWOOD SUPERFUND SITE  
MAYWOOD, NEW JERSEY**

**SITE-SPECIFIC ENVIRONMENTAL RESTORATION  
CONTRACT No. DACW41-99-D-9001  
TASK ORDER 0004  
WAD 05**

*Submitted to:*

Department of the Army  
U.S. Army Engineer District, New York  
Corps of Engineers  
FUSRAP Project Office  
26 Federal Plaza  
New York, New York 10278

Department of the Army  
U.S. Army Engineer District, Kansas City  
Corps of Engineers  
700 Federal Building  
Kansas City, Missouri 64106

*Submitted by:*

Shaw Environmental, Inc.  
100 West Hunter Avenue  
Maywood, New Jersey 07607

October 2004  
Revision 00

Issued to: \_\_\_\_\_

Date: \_\_\_\_\_

Copy No. \_\_\_\_\_  Controlled  Uncontrolled

This page intentionally left blank.

**SOIL SCREENING LEVEL (SSL) TECHNICAL MEMORANDUM**

**FUSRAP MAYWOOD SUPERFUND SITE  
MAYWOOD, NEW JERSEY**

**SITE-SPECIFIC ENVIRONMENTAL RESTORATION  
CONTRACT No. DACW41-99-D-9001  
TASK ORDER 0004  
WAD 05**

*Submitted to:*

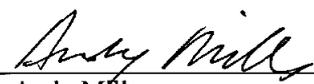
Department of the Army  
U.S. Army Engineer District, New York  
Corps of Engineers  
FUSRAP Project Office  
26 Federal Plaza  
New York, New York 10278

Department of the Army  
U.S. Army Engineer District, Kansas City  
Corps of Engineers  
700 Federal Building  
Kansas City, Missouri 64106

*Submitted by:*

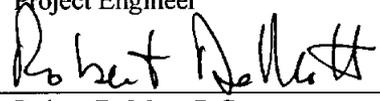
Shaw Environmental, Inc.  
100 West Hunter Avenue  
Maywood, New Jersey 07607

October 2004  
Revision 00

Reviewed / Approved by:  Date: 10/13/04  
Andy Mills  
Project Manager

Reviewed / Approved by:  Date: 10.13.04  
Edmundo Cintra  
Contractor Quality Control System Manager

Reviewed / Approved by:  Date: 10-13-04  
John Enger  
Project Engineer

Reviewed / Approved by:  Date: Oct 13, 2004  
Robert DeMott, P.G.  
Project Hydrogeologist

This page intentionally left blank.

## RECORD OF REVISIONS

<b>Revision No.</b>	<b>Description of Revision</b>	<b>Date</b>
Revision 00	Initial regulator submittal	October 2004

This page intentionally left blank.

## TABLE OF CONTENTS

<b>RECORD OF REVISIONS.....</b>	<b>i</b>
<b>TABLE OF CONTENTS .....</b>	<b>iii</b>
<b>LIST OF TABLES .....</b>	<b>iv</b>
<b>LIST OF FIGURES .....</b>	<b>v</b>
<b>APPENDICES.....</b>	<b>vi</b>
<b>ABBREVIATIONS, ACRONYMS, FORMULAS AND SYMBOLS .....</b>	<b>vii</b>
<b>1.0 INTRODUCTION.....</b>	<b>1-1</b>
1.1 PURPOSE.....	1-1
1.2 BACKGROUND.....	1-1
1.3 SAMPLING RATIONALE .....	1-2
<b>2.0 FIELD INVESTIGATION.....</b>	<b>2-1</b>
2.1 SITE PREPARATION AND MOBILIZATION .....	2-1
2.2 SOIL BORING ACTIVITIES.....	2-1
2.3 SAMPLING AND LABORATORY ANALYSIS .....	2-2
<b>3.0 SAMPLING RESULTS AND DATA ANALYSIS.....</b>	<b>3-1</b>
3.1 SUBSURFACE GEOLOGY .....	3-1
3.2 LABORATORY ANALYSIS RESULTS.....	3-1
3.3 DETERMINATION OF DILUTION ATTENUATION FACTOR (DAF) .....	3-2
3.4 DETERMINATION OF SOIL SCREENING LEVELS (SSL) .....	3-3
3.5 DISCUSSION.....	3-5
<b>4.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS .....</b>	<b>4-1</b>
4.1 SUMMARY AND CONCLUSIONS .....	4-1
4.2 RECOMMENDATIONS.....	4-2
<b>5.0 REFERENCES.....</b>	<b>5-1</b>

## **LIST OF TABLES**

Table 1	Boring Data Summary
Table 2	Analytical Methods and Sample Numbers
Table 3	Summary of SSL Data Analysis

## **LIST OF FIGURES**

Figure 1      SPLP Boring Location Map, FUSRAP Maywood Superfund Site

## APPENDICES

<b>Appendix A</b>	<b>DOE, 1992 Section Plan and Cross Sections A-A', B-B', C-C', D-D', &amp; E-E'A-1</b>
<b>Appendix B</b>	<b>Soil Boring Logs.....B-1</b>
<b>Appendix C</b>	<b>Hydrometer and Grain Size ..... C-1</b>
<b>Appendix D</b>	<b>Summary of Analytical Results..... D-1</b>
<b>Appendix E</b>	<b>Dilution Attenuation Factor (DAF) Calculation Sensitivity Analysis .....E-1</b>
<b>Appendix F</b>	<b>NJDEP SPLP-IGWSRS Draft Procedure .....F-1</b>
<b>Appendix G</b>	<b>SPLP Chemical Plots ..... G-1</b>
<b>Appendix H</b>	<b>SSL Work Plan and Responses to USEPA and NJDEP Comments..... H-1</b>

## ABBREVIATIONS, ACRONYMS, FORMULAS AND SYMBOLS

AHA	Activity Hazard Analysis
ATT	Advanced Terra Testing
CDQMP	Chemical Data Quality Management Plan
CLP	contract laboratory program
COC	constituents of concern
CST	Chicago Steel Tape MT102 Magnetic Locator
d	mixing zone depth (m)
da	aquifer thickness (m)
DAF	dilution attenuation factor
DOE	Department of Energy
FMSS	FUSRAP Maywood Superfund Site
FUSRAP	Formerly Utilized Sites Remedial Action Program
Geoprobe®	Denotes a Registered Trademark
GPR	Noggin 250 MHz Ground Penetrating Radar System
GWFS	groundwater feasibility study
GWQC	Groundwater Quality Criteria
GWQS	Groundwater Quality Standard
GWRI	Draft Groundwater Remedial Investigation
i	hydraulic gradient (m/m)
I	infiltration rate (m/yr)
IGWSCC	impact to groundwater soil cleanup criteria
IGWSRS	Impact to Groundwater Site-Specific Remediation Standards
K	aquifer hydraulic conductivity (m/yr)
L	source length parallel to ground water flow (m)
MCL	Maximum Contaminant Levels
MISS	Maywood Interim Storage Site
NJDEP	New Jersey Department of Environmental Protection
OU1	Operable Unit 1
PET	Polyethylene terephthalate
PVC	Polyvinyl chloride
QA/QC	Quality Assurance/Quality Control
RD	Radio-detection RD400 Magnetic Locator
RDSCC	residential direct soil contact criteria
SPLP	Synthetic Precipitation Leaching Procedure
SSLs	soil screening levels
STL	Severn Trent Laboratory
TAL	Target Analyte List
TGC	target groundwater concentration
TOC	total organic carbon
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VOCs	volatile organic constituents
WP	Work Plan

This page intentionally left blank.

## 1.0 INTRODUCTION

The United States Army Corps of Engineers (USACE) is conducting a remedial investigation for groundwater at the Formerly Utilized Sites Remedial Action Project (FUSRAP) Maywood Superfund Site. This Technical Memorandum documents the development of site-specific soil screening levels (SSLs) for the protection of groundwater on the FUSRAP Maywood Superfund Site (FMSS) for chemical constituents of concern (COCs) that exceeded Federal or State standards. The New Jersey Department of Environmental Protection (NJDEP) has not developed impact to groundwater soil cleanup criteria (IGWSCC) for inorganic constituents and therefore SSLs are needed for vadose zone soils using site-specific chemical and physical parameters. The inorganic constituents selected for evaluation were detected in site groundwater at concentrations exceeding the Federal/State Maximum Contaminant Levels (MCL), or the lower of the New Jersey Groundwater Quality Standard (GWQS) or New Jersey Groundwater Quality Criteria (GWQC). The COCs for this SSL evaluation include arsenic, barium, beryllium, boron, cadmium, chromium (total), lead, lithium, nickel, selenium, and thallium. Isolated exceedances of the NJDEP residential direct soil contact criteria (RDSCC) for antimony, copper, and mercury were also detected on the Maywood Interim Storage Site (MISS), and so these constituents were also included in the SSL evaluation. This technical memorandum contains the results of field sampling, laboratory analysis, data validation, data analysis, and the determination of SSLs for these selected COCs at the FMSS.

### 1.1 PURPOSE

The USACE calculated an SSL value for each of the selected inorganic COCs using the methodology described in the *Soil Screening Guidance: Users Guide* (United States Environmental Protection Agency [USEPA] 1996) and the NJDEP Draft Procedure for using Synthetic Precipitation Leaching Procedure (SPLP) results to develop Impact to Groundwater Site-Specific Remediation Standards (IGWSRS, NJDEP 2004). The scope of work included the collection of 22 overburden soil samples on the MISS, and analysis for Target Analyte List (TAL) metals plus lithium and boron, and leachable TAL metals including lithium/boron via SPLP. Additionally, the soil parameters, total organic carbon (TOC), soil pH, grain size distribution and moisture content were analyzed. The site-specific SSLs were determined for each COC based upon the calculated dilution attenuation factor (DAF), total metals concentrations (in soils), and SPLP metal results.

This SSL Technical Memorandum summarizes the results of the field sampling, lab analysis and validation, and data evaluation. The technical memorandum includes boring logs, laboratory data, and calculations supporting the SSL evaluation. The SSL Technical Memorandum is submitted as an Addendum to the *Draft Groundwater Remedial Investigation Report*. The results will support detailed evaluation of alternatives in the forthcoming groundwater feasibility study (GWFS).

### 1.2 BACKGROUND

The overburden in the study area consists of fill and native soil/subsoil, and overlies weathered shale and sandstone bedrock of the Passaic Formation. The distribution and thickness of fill and

native overburden materials on the MISS is shown in the Section Plan and Cross Sections A-A', B-B', C-C', D-D', and E-E' provided in **Appendix A** (Department of Energy [DOE] 1992).

As shown in the cross sections, the average overburden thickness is approximately 20 feet on the MISS, and reaches a maximum thickness of about 25 feet in the area of Former Retention Pond B (**Figure 1**). The upper portion of the overburden is comprised of fill, which is laterally continuous across the MISS. The fill reaches a maximum mapped thickness of approximately 15 feet in Former Retention Pond B (Cross Section A-A' in **Appendix A**) (DOE 1992), and 10 feet in portions of Former Retention Ponds A and C (Cross Section D-D' and A-A' in **Appendix A**) (DOE 1992).

Shallow fill generally consists of a one to three feet thick tan to dark brown sand, and overlies pond sludge in the Former Retention Pond areas consisting of coal ash, process sludge and sand/gravel fill in the Former Retention Pond areas. A laterally continuous native black silt and sand unit is mapped at the base of the pond sludge/fill, and extends across most of the MISS site including Former Retention Ponds A, C, and E, and portions of B. The black silt and sand unit grades laterally and upward into the mapped undifferentiated sand silt and clay unit, which appears to underlie parts of Former Retention Pond B and the eastern edge of Former Retention Pond A. Fill sediments along the western edge of Former Retention Pond B are mapped in contact with unconsolidated "weathered bedrock", and consists of red-brown sand to gravel material. Boring logs from the current soil sampling in the area of Former Retention Ponds A, B, and C are provided in **Appendix B**.

The Draft GWRI Report identified Former Retention Ponds A and C as groundwater AOCs, and attributed inorganic (metals) groundwater contamination in those basins to leaching of impacted pond sludge/fill. This is supported by soil sampling data from a number of prior investigations which report that the highest soil metals concentrations are detected in these AOCs. Excavation and disposal of radiologically impacted soils within the MISS is proposed as part of the Operable Unit 1 (OU1) remediation in the *Record of Decision for Soils and Buildings at the FUSRAP Maywood Superfund Site (USACE, 2003b)*, and involves the removal of most pond sludge/fill. Sampling was thus focused on the native soil (black organic silt and sand unit/undifferentiated unit) located below the pond sludge/fill deposits and corresponding excavation limit (residual soils) to determine the residual soil metal concentrations and the corresponding SPLP concentrations.

### 1.3 SAMPLING RATIONALE

A total of 19 soil samples were proposed in the SSL Work Plan (WP), to be distributed in and adjacent to Former Retention Ponds A, B, and C. Three sample locations (A-8, C-7 and C-8) were added at impacted soil locations in response to NJDEP comments/concerns about the number of impacted soil samples and the distribution of data for analysis. Field sample locations are shown on **Figure 1**. Noting that individual metal contamination may be limited to any one Former Retention Pond, a minimum of six samples were collected in or adjacent to each Former Retention Pond. The distribution of samples in each Former Retention Pond area is biased, with the collection of five to seven samples in metal impacted soils. One sample in or adjacent to each Former Retention Pond area was located in minimally impacted soil areas to obtain low

range metal soil and SPLP concentration. Soil sample locations were selected from soil metals data provided in the *Remedial Investigation for the Maywood Site* (DOE 1992), *Final Remedial Investigation Report- Stepan Company Property* (CH2M Hill 1994), *Pre-Design Investigation For Potential Chemical Contamination at the MISS* (USACE 2002c), and *Draft GWRI Report* (USACE, 2003a).

Historical soil sampling data shows that soil metal concentrations decrease with depth below the pond sludge/fill, so sampling was biased toward the potentially impacted upper native soils interval. Derivation of SSLs from the native soils is important since they lie at or below the proposed OU1 depth of excavation, and will be the primary remaining soil media after the removal of the radiologically impacted pond sludge. Residual soil concentrations that exceed the site-specific SSL for a COC have the potential to impact groundwater.

In accordance with the *Soil Screening Guidance*, sampling was restricted to the vadose zone (unsaturated) soils, and focused on the one to two feet native soil interval below the pond sludge/fill. If groundwater was encountered at or above the top of native soils, a pond sludge/fill sample was collected in the one to two feet interval above the water table at that location. In accordance with the Work Plan, a pond sludge/fill sample and native soil sample was collected at the same location (B-5) for comparison purposes.

This page intentionally left blank.

## 2.0 FIELD INVESTIGATION

### 2.1 SITE PREPARATION AND MOBILIZATION

Each plotted boring location was staked in the field, and evaluated with respect to overhead line clearance, proximity to known underground utilities, and road access and hazards. Six alternative boring locations were also located/staked in impacted soil areas on the MISS, and were cleared in case of boring refusal at a primary location, and/or the need for additional soil samples. Boring locations were cleared by Hager-Richter Geophysics, which included a utility plan review, utility line tracing, and use of sensors including the Radio-detection RD400 Magnetic Locator (RD), Chicago Steel Tape MT102 Magnetic Locator (CST) and Noggin 250 MHz Ground Penetrating Radar System (GPR). A One-Call request was submitted for soil boring activities on the site, and a “ticket” was issued on May 28, 2004. A USACE Quality Assurance/Quality Control (QA/QC) Preparatory Meeting was conducted prior to field activities, and included a review of the project scope of work, geophysical and one-call boring clearances, and Activity Hazard Analysis (AHA).

### 2.2 SOIL BORING ACTIVITIES

Geoprobe® boring and sampling activities were conducted during the period of June 21-24, 2004. A total of 54 borings were advanced at 22 sample locations, and included the collection of two or more adjacent cores at most locations to obtain the required soil sample volume. One sample was collected from each boring location, except at Boring B-5, where two samples were collected at different intervals. Boring B-2 was abandoned without sampling after repeated shallow refusals in and around the marked location, and a sample was instead collected at alternate Boring B-7. Boring C-4 was originally proposed as a “minimally-impacted” soil sample for Former Retention Pond C. Upon review of NJDEP SSL WP comments, and their focus on the distribution of impacted metals data, this location was abandoned in favor of a potentially more impacted location. Noting that there were no impacted soil areas close to the proposed C-4 location, it was decided to replace rather than relocate the sample to clearly identify the change from the WP. As noted in Section 1.3, samples were collected at three additional boring locations in Former Retention Ponds A (A-8) and C (C-7 and C-8).

Borings were completed by B&B Drilling using a track mounted Model 54DT Geoprobe® Macrocore. A radiation technician was present during all intrusive activities to monitor radiological activity and volatile organic constituents (VOCs) in core samples. Continuous four foot cores were collected at all sample locations using polyvinyl chloride (PVC)/polyethylene terephthalate (PET) liners. Detailed core logging was conducted by a geologist in the field, and sample intervals were selected based upon the interpreted fill/native soil contact and water table depths. Soil boring logs are provided in **Appendix B**.

At most locations, soil samples were collected in the one to two foot unsaturated native soil interval below the pond sludge/fill. Where the native soils were saturated, sludge/fill samples were collected in the one to two feet interval above groundwater. A summary of the boring depth to groundwater, sample intervals and sample media are given in **Table 1**. As shown, the majority (17/22) of samples were collected in native formation. All were collected above

groundwater. At boring B-5, a second shallow pond sludge/fill sample was collected for analysis.

At the conclusion of sampling, the location of each boring was determined by a Trimble Model PRO XRS differential backpack GPS, which is accurate to +/- 50 cm. A boring location map was prepared from the GPS data, and is shown on **Figure 1**.

### **2.3 SAMPLING AND LABORATORY ANALYSIS**

A total of 22 soil samples were collected in the field, in addition to field quality control samples. SSL QA/QC samples were collected in accordance with the *Soil Screening Level Work Plan* (USACE 2004b) and *Chemical Data Quality Control Report* (CDQMP, USACE 2002d), and included five rinseate blanks, two field duplicates, and one USACE split. Field samples were collected from the prescribed one to two foot interval(s), and thoroughly homogenized in a decontaminated stainless steel bowl. Soil samples were then placed into four labeled 8-oz jars and placed in a cooler with ice for the remainder of the field day. All samples were listed on a chain of custody form, packed, and sealed into a cooler for same day lab pickup or shipping for next day delivery.

Samples were analyzed for TAL Metals + Li/Boron (soil), SPLP TAL Metals + Li/Boron (aqueous), Soil pH, Soil Moisture, TOC (soil), and Grain Size Analysis – Mechanical & Hydrometer. A summary of the analytical methods, and number of collected field and QA/QC samples is provided in **Table 2**. Sample analysis were conducted at several laboratories, including Severn Trent Laboratory (STL) Connecticut (TAL metals, soil pH, TOC, and moisture content), STL St. Louis, Missouri (SPLP analysis for leachable TAL metals), and Advanced Terra Testing (ATT), Lakewood, Colorado (grain size and hydrometer). STL laboratories provided Level 3 data packages, which include contract laboratory program (CLP) data forms without raw data.

## 3.0 SAMPLING RESULTS AND DATA ANALYSIS

### 3.1 SUBSURFACE GEOLOGY

An evaluation of the SSL boring logs (**Appendix B and Table 1**) shows general agreement with the noted cross sections, historical boring data, and current groundwater data. At the surface, a one- to three-foot thick sand and gravel fill layer was encountered at all locations, which overlies a distinctive laminated, chalky, white/tan to gray silt fill. This unit, termed the upper fill unit, was logged at all but one sample location and ranged from two feet to seven feet in thickness. This unit is underlain at most locations by layers of common fill, and a soft, thinly interbedded light gray and dark gray to black silt (fill), termed the lower fill unit. Much of the lower fill unit had a pudding like consistency in cores within Former Retention Pond B, with locally perched groundwater. The base of the lower fill unit typically consisted of a one to two foot thick red brown to dark gray/black sand and silt, which overlies native material. A total of four samples were collected in unsaturated fill, and one in saturated (perched water) fill within the lower fill unit.

Native soils were sampled at 17 boring locations, and in most cases (nine samples) consisted of dark gray to black silt and sand. The other native soils samples were generally described as gray brown to red brown silt and sand, and may comprise the mapped native undifferentiated gray clay, silt and sand unit and/or the weathered bedrock unit described in Section 1.2. The dark gray to black silt and sand unit was also logged below these sampled native soils at borings B-3, B-4, B-6, C-5 and C-8, and beneath fill samples at borings B-3 and B-6. The dark gray to black silt and sand unit is absent in borings A-1, B-5, and B-7, where the pond sludge/fill deposits are in contact with the weathered bedrock unit. These boring locations lie outside the mapped extent of the dark gray to black silt and sand unit on the MISS. The logged subsurface geology is consistent with that depicted in the DOE, 1992 geologic cross sections (Section 1.2), and confirms the mapped distribution of the dark gray to black silt and sand unit and other native soil units in and adjacent to the Former Retention Ponds on the MISS.

### 3.2 LABORATORY ANALYSIS RESULTS

Hydrometer and grain size analysis were performed on the boring soil samples. The results of the laboratory analysis are presented in **Appendix C**. The results of these analyses provide confirmation of the qualitative physical descriptions of the soil samples provided on the boring logs **Appendix B and Table 1**.

Percent moisture, pH, and TOC laboratory results are provided in **Appendix D**. The percent moisture values for the sample soils ranged from 9.6 percent to 58.3 percent. Soil pH ranged from 6.7 to 8.77. TOC values ranged from 514 to 93,800 mg/kg, with an arithmetic and geometric mean of 18,918 mg/kg (1.89% or foc = 0.0189) and 8,088 mg/kg (foc = 0.0081), respectively. The soil-water distribution coefficient (and mobility) of metals is directly effected by geochemical parameters/processes including pH, sorbent content (combination of clay and metal oxyhydroxides, organic carbon), redox conditions, major cation chemistry, and metal speciation. In determining SSLs, EPA used the MINTEQA2 model and input a foc of 0.002, and varied pH (4.9 to 8.0) and iron oxide content (0.01 to 1.11%) (EPA/540/R95/128, 1996). The

range of TOC (foc) results are substantially higher than the USEPA 0.002 foc value that was used to calculate generic SSLs, and may account in part (along with elevated iron oxide reported in local soils) for the higher calculated SSL as compared to USEPA generic values for selected constituents in this report. The reported foc values also exceed published average values of 0.006 to 0.008 for undifferentiated sand, silt, and clay (Schwarzenbach 1981) and 0.0049 for alluvium (Movet et al 1973).

All data packages were submitted to a certified validator for validation in accordance with the USACE Guidance CENWK-EC-EF, Data Quality Evaluation Guidance (USACE 1999). Validated laboratory results for the COCs used in the SSL evaluation are presented in **Appendix D**.

Data qualifiers (Result Qualifier) were assigned to samples, or accepted by the validator, and include the following:

- U - denotes the analyte was non-detect
- UJ - denotes that the analyte was non-detect and that the detection limits were estimated
- J - denotes that the concentration presented, was estimated
- R - denotes that the analyte was rejected
- D - denotes that the analysis required dilution prior to analysis
- B - denotes that blank contamination was encountered in the sample

Data tables are included for antimony, arsenic, barium, beryllium, boron, cadmium, copper, chromium (total), lead, lithium, mercury, nickel, selenium, and thallium. Both soil and leachate concentration data are provided. Leachate results are presented in triplicate as well as average values.

As required by the NJDEP Site Remediation Program, and as identified in NJAC 7:26E, or the Tech Regs., an electronic data submission is required for samples obtained as part of a Site Investigation, Remedial Investigation, or Remedial Action. The HazSite deliverable was formatted in a text file format (txt). Appendix D contains the electronic deliverable on CD. As recommended by NJ DEP, USACE utilized the Electronic Data Submittal Application (EDSA) routine to verify that the files would be acceptable for importing into the NJ DEP database. The database files were accepted by the EDSA routine.

### **3.3 DETERMINATION OF DILUTION ATTENUATION FACTOR (DAF)**

The USEPA and NJDEP provide generic DAF values of 20 and 11, respectively, for derivation of SSLs, but allow for calculation of alternative DAFs based upon site specific conditions. In accordance with the methodology in the *USEPA Soil Screening Guidance, Users Guide* (USEPA 1996), a site specific DAF was calculated for the MISS based on the aquifer hydraulic conductivity, hydraulic gradient, groundwater recharge rate, aquifer thickness, and source area size. The sensitivity of the dilution factor to variations of hydraulic conductivity, infiltration rate, and source length were also evaluated (**Appendix E**). The computed DAF is the best-fit value for the MISS site conditions.

The calculated DAF for the MISS source area was based upon site data for hydraulic conductivity, groundwater gradient, aquifer thickness and source area size using Equations 11 from the *Soil Screening Guidance*.

Equation 11: Derivation of dilution Factor

$$\text{dilution factor} = 1 + \frac{Kd}{IL}$$

where:

dilution factor (unitless)

K = aquifer hydraulic conductivity (m/yr)

i = hydraulic gradient (m/m)

I = infiltration rate (m/yr)

d = mixing zone depth (m)

L = source length parallel to ground water flow (m)

A site specific DAF of 20 was calculated based upon the following parameters:

K = 2043 m/yr (18.35 ft/day); Geometric Mean of Overburden (Draft GWRI Table 3-9, [USACE 2003])

i = 0.011 m/m; (across basins)

d = 3 m (10 ft); (average aquifer thickness)

I = 0.18 m/yr (7.0 in/yr); (EPA Default Infiltration Rate)

L = 20 m (65 ft); (variable)

The aquifer mixing zone depth was set equal to aquifer thickness due to the thinness of the aquifer (10 feet), and groundwater sampling data. Within the metal source areas, Geoprobe® groundwater samples were collected from the bottom 4 feet of aquifer (above bedrock), and detected similar metal groundwater concentrations to those reported in adjacent monitoring wells, which are screened across the water table. This data indicates that groundwater metals contamination, and the DAF mixing zone, extend vertically across the overburden aquifer.

The source length of 20 m (65 feet) was conservatively estimated from historical soil sampling data. Most historical metals soil sampling data does not show elevated concentrations, and those exceedances are typically isolated. Soil sampling in impacted areas shows that metal concentrations vary dramatically over short distances, and that “source areas” are limited in extent. Impacted soil areas appear to be small (25 feet in length) in most areas while extending up to 50 feet in the direction of groundwater flow along the north side of Former Retention Pond A.

### 3.4 DETERMINATION OF SOIL SCREENING LEVELS (SSL)

Migration to groundwater SSL values were evaluated for the selected soil COCs based on the methods described in the work plan and NJDEP draft procedures for IGWSRS determinations (**Appendix F**). As proposed in the SSL work plan, triplicate SPLP metals data were averaged

(mean) for each sample (**Appendix D**). Site sample data (excluding sludge and fill samples) were evaluated as one data set, since the sample locations are close together and the native soil type is common to most sample areas.

For each compound, the average SPLP results were plotted (on the Y axis), along with the Target Groundwater Concentration (TGC), and against the bulk soil metal concentration (on the X axis). A line was then fitted through the plotted points using statistical regression analysis techniques.

The TGC is defined as the groundwater cleanup standard multiplied by the DAF (20), and was derived using the lower of the Federal MCL or NJDEP GWQS. An alternative TGC was also applied for those COCs where the NJDEP GWQC, a human health based standard, was lower than the GWQS. The SSL was graphically determined by the horizontal extension of the TGC concentration to the fitted line, and extrapolation of corresponding bulk soil concentration on the X axis. Individual plots were prepared for each COC. The individual metal data plots are shown in **Appendix G**.

The reported soil metals bulk and SPLP concentrations were substantially lower than expected when the Work Plan was prepared, and all COC plotted sample bulk/SPLP values (except one arsenic and lead data point) fell below the respective TGC's on the regression plots. Further evaluation using regression analysis was not performed for the following reasons:

1. The plotted regression lines were not defined (bounded by data) at the TGC, except for arsenic.
2. The majority of data points did not lie above the TGC, per NJDEP requirements for regression analysis.
3. The best fit lines produced low  $R^2$  (coefficient of determination) values indicating that the regression equation was a poor fit of the data.

For the foregoing reasons, an alternative approach was used to calculate SSL values for the MISS. SSL values for selected MISS COCs were derived using the NJDEP Draft Procedure for using SPLP results to develop IGWSRS "Using SPLP Results" sub-procedure "a" (**Appendix F**). Following this procedure, the highest SPLP concentration (below the TGC) was identified for each metal, and the corresponding bulk soil concentration was applied as the impact to groundwater SSL. The results based on this method are considered very conservative, since most COC SPLP leachate results fall well below the applicable TGCs. The results of the SSL analysis are given in **Table 3**. As shown, SSLs were developed for the COCs using both Federal MCL and NJDEP GWQC (when the GWQC was lower than the GWQS).

Due to the low detected concentrations of selected metals, the reported metal leachate concentrations for native soils are fractional (<10%) values of the calculated TGC. These results are considered excessively conservative, and in these instances, the greater of the derived and generic SSL values were applied. As shown in the last column of **Table 3**, EPA generic impact to groundwater values were applied to antimony, barium, beryllium, cadmium, lead, mercury, and selenium.

### 3.5 DISCUSSION

Seven of the 14 COC Federal MCL derived SSL values (antimony, barium, beryllium, cadmium, lead, mercury, and selenium) were at or below the USEPA Generic Impact to Groundwater Criteria as given in **Table 3**. The generic SSL value will be used for these metals. The remaining metal COC derived SSL values shown in **Table 3** are based on the maximum detected soil concentration with a leachate value below the TGC.

The following observations, related to the derivation of SSL for the MISS, can be made:

1. The major COCs arsenic and lithium, have historical soil data exceedances above of the calculated SSLs.
2. These soils are potential sources of groundwater contamination.
3. Plotted groundwater exceedances coincide with these impacted soils.

Arsenic, soil exceedances are limited to the area along the northern edge (along the railroad easement) of Former Retention Pond A, and to a lesser degree, the western half of Former Retention Pond C. Arsenic groundwater exceedances are detected in corresponding local wells (and geoprobes). Areas with lithium soil exceedances show the highest groundwater concentrations.

This page intentionally left blank.

## 4.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

### 4.1 SUMMARY AND CONCLUSIONS

1. The NJDEP has not developed IGWSCC for inorganic constituents, therefore, SSLs need to be developed for overburden, vadose zone soils using site-specific chemical and physical parameters.
2. The COCs for this SSL evaluation include antimony, arsenic, barium, beryllium, boron, cadmium, copper, chromium (total), lead, lithium, mercury, nickel, selenium, and thallium which were all found to exceed a Federal or State limit during the Remedial Investigation.
3. The USACE proposed to calculate an SSL value for each of the selected inorganic COCs using the methodology described in the Soil Screening Guidance: Users Guide and the NJDEP Draft Procedure for using SPLP results to develop IGWSRS values.
4. The proposed OU #1 soil remediation (excavation) depths generally extend to the top of native soils, which overlie weathered shale and sandstone bedrock of the Passaic Formation.
5. A total of 54 borings were advanced at 22 sample locations using a Geoprobe® rig, and included the collection of two or more adjacent cores at most locations to obtain the required soil sample volume.
6. A total of 22 soil samples (and required QC samples) were collected from the borings distributed in, and adjacent to, Former Retention Ponds A, B, and C.
7. Samples were analyzed for TAL Metals + Li/Boron (soil), SPLP TAL Metals + Li/Boron (aqueous), Soil pH, Soil Moisture, TOC (soil), and Grain Size Analysis (Mechanical & Hydrometer).
8. The range of TOC (foc) results are substantially higher than the USEPA 0.002 foc value that was used to calculate generic SSLs, and may account in part for the higher calculated SSL values for selected constituents in this report.
9. A site specific DAF of 20 was calculated using site data.
10. SSL values for selected MISS COCs were determined using the NJDEP Draft Procedure for using SPLP results to develop IGWSRS and are given in **Table 3**.
11. Seven of the 14 COC Federal MCL derived SSL values (antimony, barium, beryllium, cadmium, lead, mercury, and selenium) were at or below the USEPA Generic Impact to Groundwater Criteria, therefore the generic SSL value was selected.

## 4.2 RECOMMENDATIONS

The following recommendations are made based on the field sampling program, laboratory analysis results, and impact to groundwater SSL data analysis activities:

1. A DAF of 20 should be used in determining migration to groundwater SSL (IGWSRS) values for the MISS.
2. The following IGWSRS values should be accepted for the MISS:
  - antimony, 5 mg/kg
  - arsenic, 122 mg/kg
  - barium, 1,600 mg/kg
  - beryllium, 63 mg/kg
  - boron, 52 mg/kg
  - cadmium, 8 mg/kg
  - chromium, 242 mg/kg,
  - copper, 426 mg/kg
  - lead, 400 mg/kg
  - lithium, 194 mg/kg
  - mercury, 2 mg/kg
  - nickel, 214 mg/kg
  - selenium, 5 mg/kg
  - thallium, 1.2 mg/kg

Noting the very conservative assumptions associated with the current SSL evaluation, if COC soil concentrations exceeding these values are encountered during remediation, revised IGWSRS values should be determined using the procedures presented in this Technical Memorandum.

## 5.0 REFERENCES

1. DOE, 1992, *Remedial Investigation for the Maywood Site Volume 1*, Prepared for the U.S. Department of Energy, by Bechtel National Inc.
2. CH2M Hill, 1994, *Final Remedial Investigation Report-Stephen Property*.
3. Mouvet, C.,D. Barberis and A.C.B. Bourg, *Adsorption Isotherms of Tri and Tetrachloroethylene by Various Natural Soils*, J. Hydrol., 149, 163-182, 1993.
4. NJDEP, 2004, *SPLP Impact to Groundwater Site Specific Remediation Standards (IGWSRS) Draft Procedure*, Letter from Ms. Donna L. Gaffigan, Case Manager to Mr. Allen Roos, Project Manager, USACE, May 5, 2004.
5. Scharzenback, R.P. and J. Westall, *Transport of Nonpolar Organic Compounds from Surface Water to Groundwater*, Laboratory Sorption Studies, Environ. Sci. Technol., 15(11), 1360-1367, 1981.
6. USACE, 1999, *Data Quality Evaluation Guidance*, U. S. Army Corp of Engineers, Guidance, CENWK-PE-ES.
7. USACE, 2002a, *Feasibility Study for Soils and Buildings at the FUSRAP Maywood Superfund Site*, Maywood, NJ.
8. USACE, 2002b, *Proposed Plan for the Soils and Buildings at the FUSRAP Maywood Superfund Site*, Maywood, NJ.
9. USACE, 2002c, *Pre-Design Investigation for Potential Chemical Contamination at the MISS*, prepared for the USACE by Stone and Webster, Inc.
10. USACE, 2002d, *Chemical Data Quality Control Report (CDQMP), Revision 1*, prepared for the USACE by Stone and Webster, Inc.
11. USACE, 2003a, *Draft Groundwater Remedial Investigation Report(GWRI)*, New York District, FUSRAP, Maywood Superfund Site.
12. USACE, 2003b, *Record of Decision (ROD) for Soils and Buildings at the FUSRAP Maywood Superfund Site*, New York District, FUSRAP Maywood Superfund Site.
13. USACE, 2004a, *Groundwater Remedial Investigation Report Addendum*, New York District, FUSRAP, Maywood Superfund Site.
14. USACE, 2004b, *Soil Screening Level (SSL) Workplan*, FUSRAP Maywood Superfund Site, Maywood, NJ.
15. USEPA, 1996, *Soil Screening Guidance: User's Guide*, Office of Solid Waste and Response, Publication 9355.4-23, Washington D.C.

This page intentionally left blank.

## **TABLES**

This page intentionally left blank.

**Table 1**  
**Boring Data Summary**  
**FUSRAP Maywood Superfund Site, Maywood, NJ**

Boring ID	Date Completed	Depth to Groundwater (in feet, bgs)	Sample Interval	Sample Media
A-1	06/21/04	>15.4	13.5 - 15.0	Red-brown sandy SILT (Native Soil)
A-2	06/22/04	9.6	6.3 - 7.1	Brown/Dk gray/black fine sandy SILT (Native Soil)
A-3	06/21/04	8.4	6.3 - 8.3	Gray/Tan/Brown silty fine to medium SAND (Fill)
A-4	06/23/04	10.5	9.4 - 10.4	Gray-brown silty fine to medium SAND (Native Soil)
A-5	06/23/04	11.4	10.4 - 11.4	Dk gray-black silty fine SAND (Native Soil)
A-6	06/25/04	> 8.0	5.9 - 7.9	Dk brn-bik organic SILT/silty fine sand (Native Soil)
A-7	06/21/04	11.1	9.0 - 11.0	Dk gray-black organic SILT (Native Soil)
A-8	06/25/04	12.6	11.2 - 12.4	Dk gray fine to med SAND w/clay (Native Soil)
B-1	06/23/04	>15.3	12.4 - 13.4	Dk gray-black fine to medium SAND (Native Soil)
B-2	06/22/04	N/A	N/A	Boring abandoned due to shallow refusal
B-3	06/23/04	9.3	7.8 - 8.5	Black organic SILT w/ sand (Pond sludge/Fill)
B-4	06/22/04	>16.0	10.0 - 11.3	Gray fine sandy SILT w/ little clay (Native Soil)
B-5	06/28/04	>17.7	12.4 - 14.4	Interbedded black/white SILT (Pond sludge/Fill)
B-5	06/22/04	>19.0	15.7 - 17.7	Red-brown medium to fine SAND (Native soil)
B-6	06/22/04	12.5	7.8 - 8.8	Interbedded blk/gray/wt clay/SILT (Pond Sludge)
B-7	06/23/04	>11.9	8.1 - 9.1	Interbedded black/gray sandy SILT (Pond Sludge)
C-1	06/24/04	11.2	10.2 - 11.2	Dk gray to brn clayey fine to med SAND -(Native)
C-2	06/24/04	10.8	8.6 - 10.6	Tan/Orange-brown SAND (Native Soils)
C-3	06/24/04	10.6	9.6 - 10.6	Dk gray-black fine SAND (Native Soils)
C-4	N/A	N/A	N/A	Boring not installed.
C-5	06/24/04	9.6	8.6 - 9.6	Dk gray-brown medium to fine SAND (Native Soils)
C-6	06/24/04	13.7	12.6 - 13.6	Dk gray-black fine to med SAND (Native Soils)
C-7	06/25/04	9.2	7.6 - 8.6	Dk gray-blk sandy SILT w/ clay (Native Soil)
C-8	06/28/04	6.3	4.7 - 6.2	Red-brn fine to med SAND w/ clay silt (Native soil)

Table 2  
 Analytical Methods/Sample Numbers and QA/QC Samples  
 FUSRAP Maywood Superfund Site, Maywood, NJ

Sample Item	Media	Method	Field Samples	Rinsate Blanks	Duplicates	USACE Splits	Comments
TAL Metals + Li/Boron	Soil	SW-846 Method 6010B/7471A	22	5	2	1	
SPLP - TAL Metals + Li/Boron	Soil	1312/SW-846 Method 6010B/6020/7470A	22	NA	NA	NA	SPLP was run in triplicate. No duplicate QA/QC sample was performed.
Soil pH	Soil	SW-846 Method 9045C	22	NA	2	NA	
Total Organic Carbon	Soil	Lloyd Kahn Method	22	NA	2	NA	
Soil Moisture	Soil	MCAWW 160.3 Modified	22	NA	2	NA	
Grain Size Analysis - Mechanical & Hydrometer	Soil	D422-63	22	NA	NA	NA	

Notes:

NA = Not Analyzed

Table 3  
 Summary of SSL Data Analysis Results

FUSRAP Maywood Superfund Site, Maywood, NJ

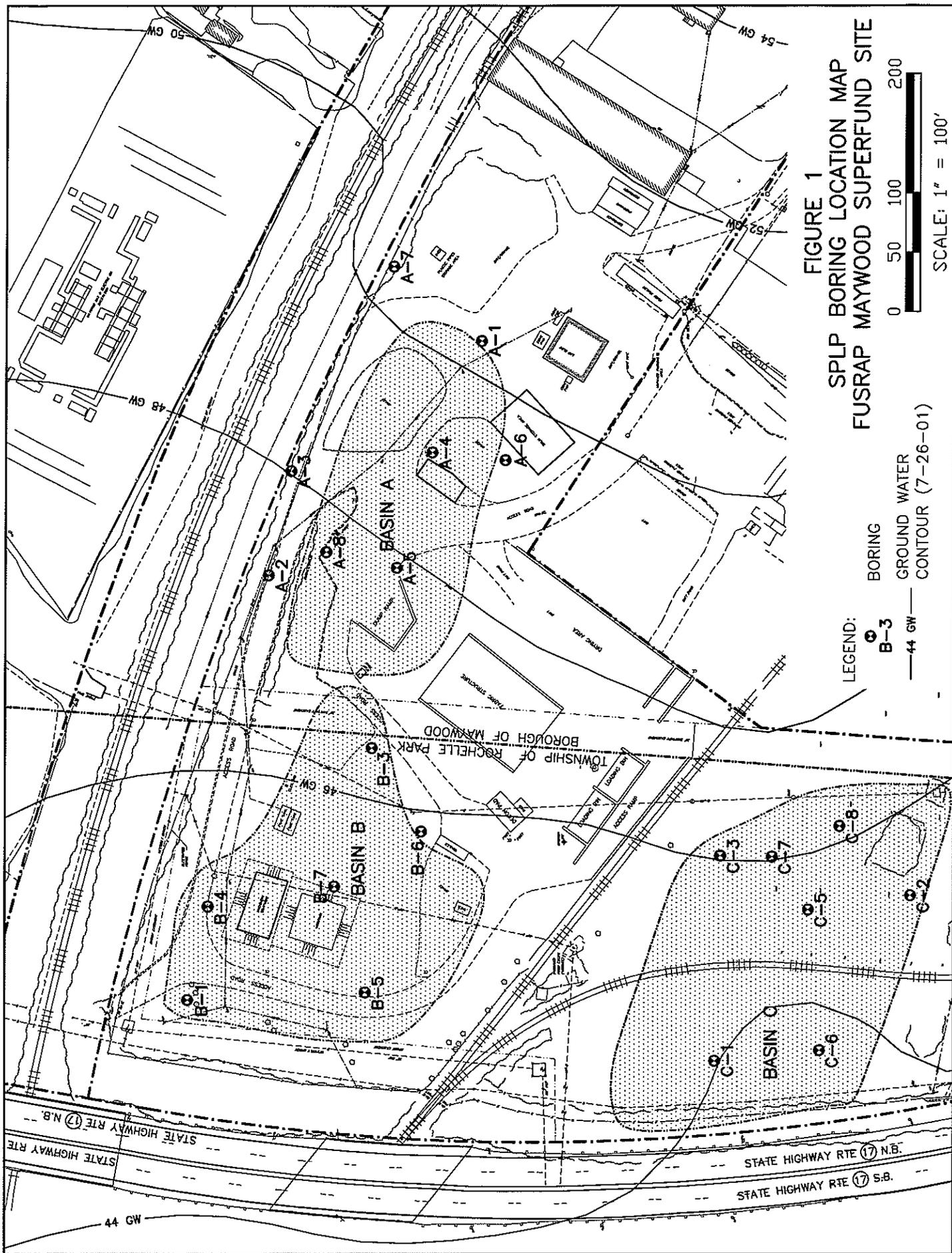
Analyte	Groundwater Criteria (ug/L)		TGC = GWQC or MCL X DAF of 20 (ug/L) See Note 1.	Maximum Detected Soil Concentration With Leachate Below TGC (mg/Kg)	Maximum Detected Soil Concentration Location	USEPA Generic Impact to Groundwater Standard (mg/kg)	Criteria to Use (Generic or Derived)	Migration to Groundwater SSL (mg/kg)
	6	Federal MCL						
Antimony	2	NJDEP GWQC	40	1.5 (Reporting Limit)	C-2	5	Generic	5
	10	Federal MCL	200	1.5 (Reporting Limit)	C-2	5	Generic	5
Arsenic	0.02	NJDEP GWQC	0.4	122	A-6	29	Derived	122
	2000	NJDEP GWQC and Federal MCL	40,000	None	N/A	29	Generic	29
Barium	4	Federal MCL	80	255	C-7	1600	Generic	1600
Beryllium	0.008	NJDEP GWQC	0.16	2 (Reporting Limit)	C-2	63	Generic	63
	7300	Region IX PRG	146,000	None	N/A	63	Generic	63
Boron	5	Federal MCL	100	52	A-7	N/A	Derived	52
	4	NJDEP GWQC	80	1.9 (Reporting Limit)	A-7	8	Generic	8
Chromium	100	NJDEP GWQC and Federal MCL	2000	1.9 (Reporting Limit)	A-7	8	Generic	8
	1300	Federal MCL	26,000	242	A-1	38	Derived	242
Copper	1000	NJDEP GWQC	20,000	426	A-6	N/A	Derived	426
	15	Federal MCL	300	426	A-6	N/A	Derived	426
Lead	5	NJDEP GWQC	100	193	C-8	400 (Screening Level)	Generic	400
	730	Region IX PRG	14,600	193	C-8	400 (Screening Level)	Generic	400
Lithium	2	NJDEP GWQC and Federal MCL	40	194	A-7	N/A	Derived	194
	100	NJDEP GWQC	2000	0.61	A-7	2	Generic	2
Nickel	50	NJDEP GWQC and Federal MCL	1000	214	A-6	130	Derived	214
	2	Federal MCL	40	3 (Reporting Limit)	A-7	5	Generic	5
Thallium	0.5	NJDEP GWQC	10	1.2 (Reporting Limit)	C-7	0.7	Derived	1.2
				1.2 (Reporting Limit)	C-7	0.7	Derived	1.2

Notes: (1.) TGCs were calculated by using the applicable NJDEP GWQC or Federal MCL and NJDEP GWQC if lower than the GWQS.  
 NJDEP = New Jersey Department of Environmental Protection  
 MCL = Maximum Contaminant Level  
 PRG = Preliminary Remediation Goal  
 ug/L = Micrograms per liter  
 GWQC = Groundwater Quality Criteria  
 GWQS = Groundwater Quality Standard  
 DAF = Dilution Attenuation Factor  
 N/A = Not Applicable  
 TGC = Target Groundwater Concentration  
 USEPA = United States Environmental Protection Agency



## FIGURES

This page intentionally left blank.



**FIGURE 1**  
**SPLP BORING LOCATION MAP**  
**FUSRAP MAYWOOD SUPERFUND SITE**

**LEGEND:**  
 ○ BORING  
 ○ B-3  
 — 44 GW — GROUND WATER CONTOUR (7-26-01)



SCALE: 1" = 100'



## APPENDICES

This page intentionally left blank.

**APPENDIX A**  
**DOE, 1992 SECTION PLAN AND CROSS SECTIONS**  
**A-A', B-B', C-C', D-D', & E-E'**

This page intentionally left blank.



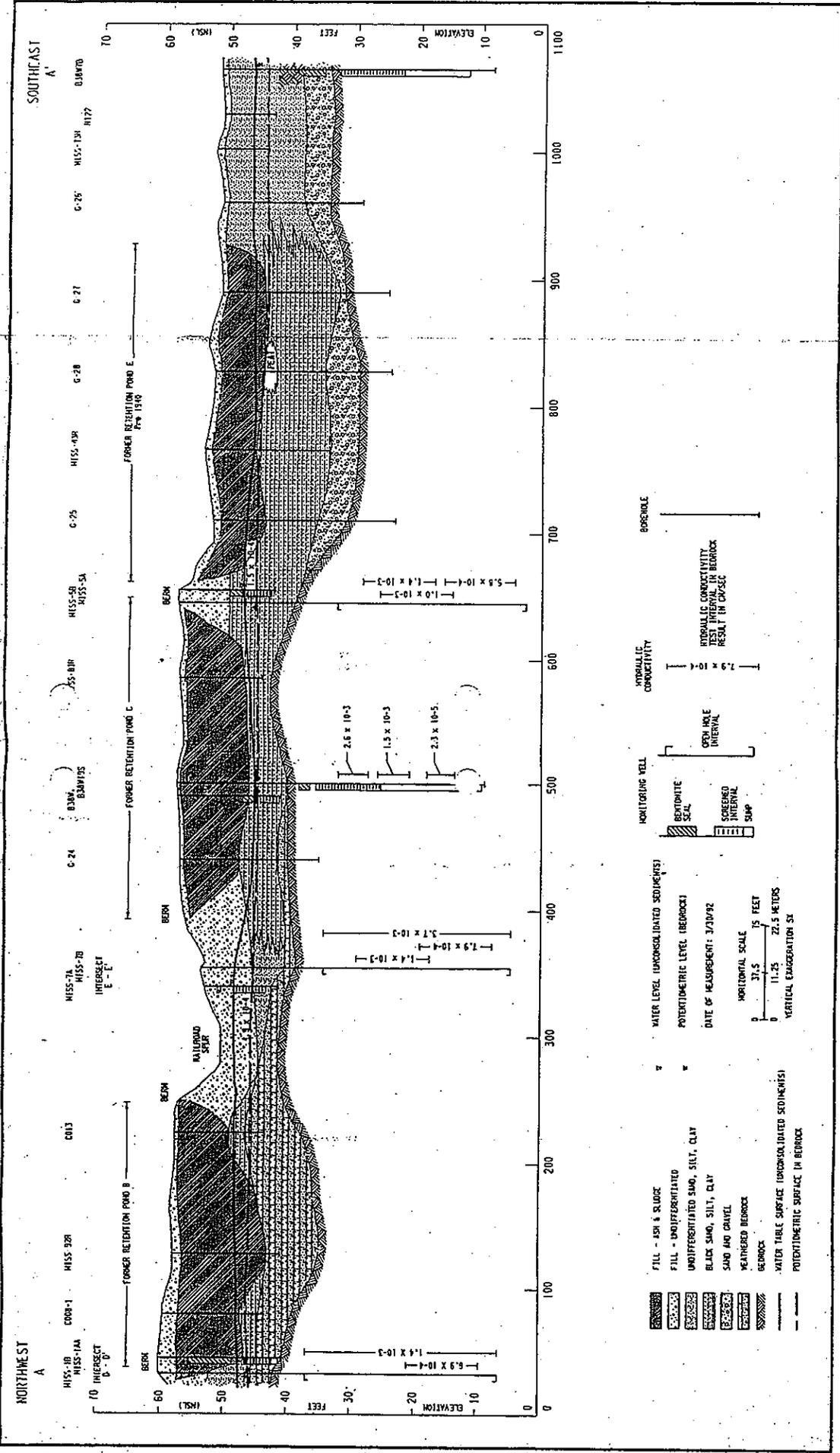
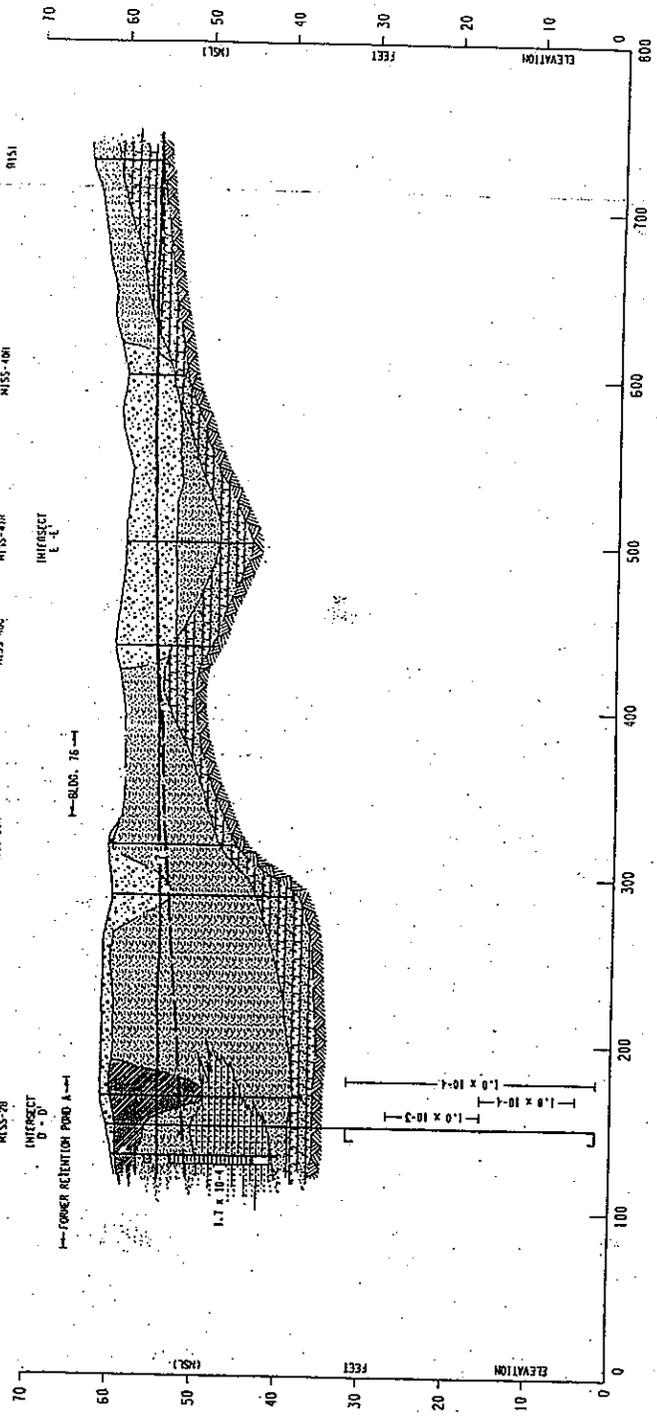


Figure 3-12 Hydrogeologic Cross Section A-A' at MISS



NORTHWEST  
C

SOUTHEAST  
C'



- FILL - ASH & SLUDGE
- FILL - UNDIFFERENTIATED
- UNDIFFERENTIATED SAND, SILTY, CLAY
- BLACK SAND, SILTY, CLAY
- SAND AND GRAVEL
- WEATHERED BEDROCK
- BEDROCK
- WATER TABLE SURFACE (UNCONSOLIDATED SEDIMENTS)
- POTENTIOMETRIC SURFACE IN BEDROCK

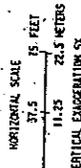
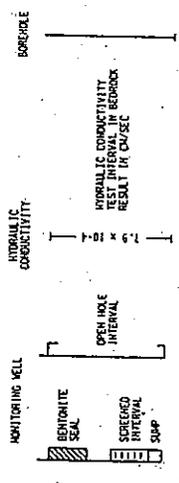


Figure 3-14  
Hydrogeologic Cross Section C-C' at MISS

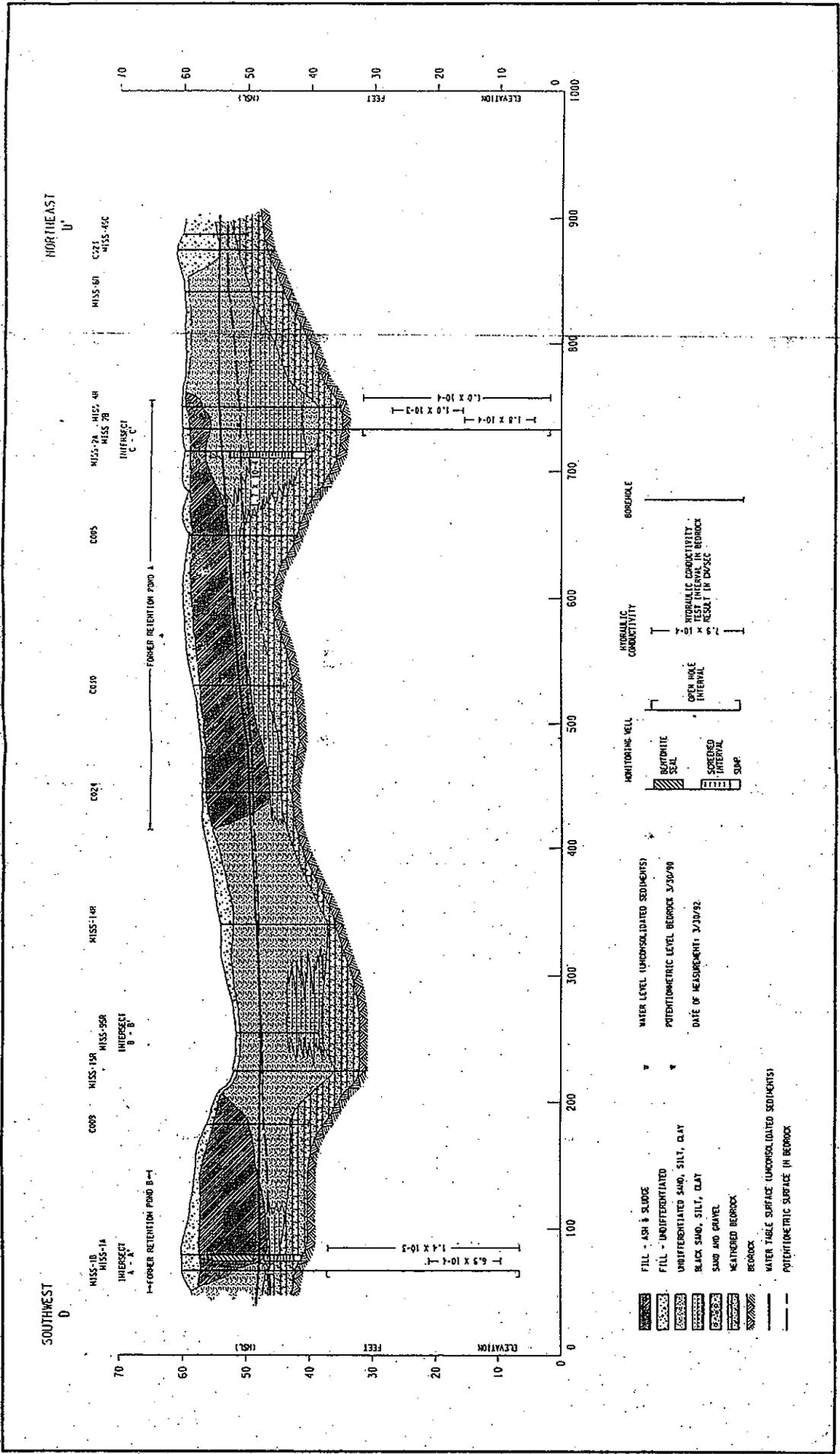


Figure 3-15 Hydrogeologic Cross Section D-D' at MISS



## **APPENDIX B SOIL BORING LOGS**

This page intentionally left blank.

SHAW Environmental  
and Infrastructure, Inc.

BORING LOG DETAILS FOR: A-1

(Page 1 of 1)

MAYWOOD - FUSRAP

DATE STARTED : June 21, 2004  
 DATE COMPLETED : June 21, 2004  
 DRILLING METHOD : Geoprobe  
 DRILLER : B&B / Gordon Blewett  
 GEOLOGIST : Joseph McGuckin

Maywood, New Jersey

Shaw Project #608575

Depth in feet	Core #	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS
0				0.0-1.4 Dry, gray 3/4" GRAVEL and CRUSHED ROCK aggregate powder (compacted fill).	Total core runs = 2 Core run #2 recovery (feet): 0-4: 3.6 4-8: 3.9 8-12: 3.7 12-15.4: 3.4 (refusal)
1			1.4-4.0 Dry, red-brown ROCK FLOUR and 3/4" GRAVEL (compacted fill).		
2	1	4.0	0.0		
3					
4				4.0-4.3 Dry, red ROCK FLOUR (fill).	Native soils @ 13.5 feet, bgs. Sample interval: 13.5-15.0.
5				4.3 Dry, "black" red-brown silty clayey fine SAND (fill).	
6	2	3.7	0.0	4.3-5.8 Dry, red-brown silty fine SAND / sandy SILT with some gravel-sized rock fragments (moist @ 5.7) (fill).	
7				5.8-6.7 Moist, gray to dark gray silty fine SAND (fill).	
8				6.7-7.5 White/gray chalk-like SILT (pond sludge/fill).	END OF BORING AT 15.4' BGS.
9				7.5-7.7 Dark brown organic SILT (fill).	
10	3	3.7	0.0	8.0-10.3 Saturated/wet, dark gray brown clayey SILT with 15% fine sand fraction (fill).	
11				10.3-11.7 Saturated/wet, very dark gray / black, with red-brown mottles, fine sandy SILT with 20% angular gravel (fill).	
12				12.0-13.5 Wet, dark reddish brown sandy SILT with 1" white-gray quartz gravel (fill). Black-colored zone at interface with natural soil zone (13.5).	END OF BORING AT 15.4' BGS.
13				13.5-15.0 Wet, red-brown fine sandy SILT with 40% red-brown rock gravel.	
14	4	2.6	0.0	**CORE RUN #2	
15				12.0-13.4 Wet, black / dark gray silty fine SAND (fill).	
16				13.4-15.4 Dry/moist (not wet), red-brown sandy SILT with 35% gravel.	
17					
18					
19					
20					

SHAW Environmental  
and Infrastructure, Inc.

BORING LOG DETAILS FOR: A-2

(Page 1 of 1)

MAYWOOD - FUSRAP

DATE STARTED : June 22, 2004  
 DATE COMPLETED : June 22, 2004  
 DRILLING METHOD : Geoprobe  
 DRILLER : B&B / Gordon Blewett  
 GEOLOGIST : Joseph McGuckin

Maywood, New Jersey

Shaw Project #608575

Depth in feet	Core #	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS	
0				0.0-0.8 Dry, crushed gray roadway STONE (fill).	Total core runs = 3	
1				0.8-1.1 Dry, brown fine sandy SILT (topsoil/fill).		
2	1	3.7	0.0	1.1-2.5 Moist, light gray / white "chalk-like" SILT (pond sludge/fill). 2.5-2.6 Very dark brown/black lens SILT with fine gravel and coarse sand (pond sludge/fill). 2.6-3.7 Moist, light gray / white SILT (pond sludge/fill).		
3						
4				4.0-6.0 Moist, light gray / white SILT (pond sludge/fill).	Contact w/native soils @ 6.2 feet, bgs. Sample interval: 6.3-7.1.	
5				6.0-6.15 Light gray / beige / tan fine silty SAND (pond sludge/fill), transition zone to natural material @ 6.2.		
6	2	3.1	0.0	6.2-6.6 Brown fine sandy SILT with little 1/2" to 3/4" Brunswick weathered rock fragments. 6.6-7.1 Moist, black / very dark gray fine sandy SILT (soft).		
7						
8				8.0-9.6 Moist to wet, black / very dark gray fine sandy SILT grading to a silty fine SAND, high organic content, natural.	Saturated sediment (water table) @ 9.6 feet, bgs.	
9				9.6-9.9 Black / very dark gray silty organic fine to medium SAND with trace medium gravel (subrounded).		
10	3	3.4		9.9-11.4 Mottled dark gray / red-brown / light gray silty CLAY / clayey SILT (aquitar) with 25% fine sand and little Brunswick formation (1/4" to 1.25") rock fragments.		
11						
12	END OF BORING AT 12' BGS.					
13						
14						
15						
16						
17						
18						
19						
20						

SHAW Environmental  
and Infrastructure, Inc.

BORING LOG DETAILS FOR: A-3

(Page 1 of 1)

MAYWOOD - FUSRAP

DATE STARTED : June 21, 2004  
 DATE COMPLETED : June 21, 2004  
 DRILLING METHOD : Geoprobe  
 DRILLER : B&B / Gordon Blewett  
 GEOLOGIST : Joseph McGuckin

Maywood, New Jersey

Shaw Project #608575

Depth in feet	Core #	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS
0				0.0-0.5 Dry, white/gray angular crushed quartz GRAVEL and ROCK FLOUR (roadway surface) (fill).	Total core runs = 2 Core run #2 recovery (feet): 5.0-9.0: 3.4 12.0-14.5: 2.5 (refusal)
1			0.5-1.0 Dry, dark brown SILT with trace fine sand, some fine gravel (topsoil/fill).		
2	1	3.0		1.0-2.7 Brown SILT with gravel rock fragments of Brunswick formation and trace sand (fill).	
3				2.7-3.0 Dry, black COAL fragments (fill).	
4				4.0-5.5 Wet, light gray, varved, soft chalky SILT (fill).	Sample collected in probable fill material at 6.3-8.3 feet interval, bgs.
5				5.5-5.7 Gray GRAVEL and brown SILT (pond sludge/fill).	
6	2	2.4		5.7-6.4 Moist/wet, gray/brown silty fine/medium SAND to 8.4. **CORE RUN #2 5.0-9.0 Very moist, gray/tan/brown silty fine SAND. (6.3-8.3 - Moist, silty fine to medium SAND with fine root hairs and strands of vegetation) (fill - probable pond sludge/fill below).	
7					Saturated sediment (water table) @ 8.4 feet, bgs.
8				8.0-8.4 Same as above.	
9				8.4-9.3 Wet, black and brown vertically interbedded varved silty fine SAND (probable fill).	Probable native soils @ 12.0 feet, bgs.
10	3	3.4		9.3-10.4 Wet, black fine to medium SAND, trace silt fraction.	
11				10.4-10.8 Wet/saturated, black and dark gray interbedded lenses (1/8" to 1/2" thick) of fine to medium sand with trace silt (probable fill).	
12				10.8-11.1 Black medium to coarse SAND with black organic fluid (oil-like without sheen), slight odor (probable fill).	
13				11.1-11.4 Moist, dark brown / mottled black silty CLAY, aquitard layer. **CORE RUN #2	Probable native soils @ 12.0 feet, bgs.
14	4	2.5		11.1-11.4 (Above clay unit) - saturated (perched) soils with black oil-like coarse sand (probable fill). **CORE RUN #2	
15				12.0-14.5 Red-brown mottled with dark gray clayey SILT with little gravel-sized rock fragments - probable native material.	
END OF BORING AT 14.5' BGS.					
16					
17					
18					
19					
20					

07-28-2004 n:\COOK\MaywoodA-3.bor

SHAW Environmental  
and Infrastructure, Inc.

BORING LOG DETAILS FOR: A-4

(Page 1 of 1)

MAYWOOD - FUSRAP

DATE STARTED : June 23, 2004  
 DATE COMPLETED : June 23, 2004  
 DRILLING METHOD : Geoprobe  
 DRILLER : B&B / Gordon Blewett  
 GEOLOGIST : Joseph McGuckin

Maywood, New Jersey

Shaw Project #608575

Depth in feet	Core #	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS
0				0.0-2.2 Dry, light brown / tan SILT with 20% fine sand, grass and root mat and topsoil 0.0-0.2 (fill).	Total core runs = 2
1				2.2-2.3 Red BRICK gravel-sized fragment and brown SILT matrix.	Core run #2 recovery (feet):
2	1	3.6	0.0	2.3-2.8 Dry, light red-brown fine sandy SILT with 20% fine to medium angular gravel (fill).	8.0-12.0: 3.3
3				2.8-3.3 Dark brown LIGNITE/PEAT and GRAVEL with 20% matrix of same, trace fine root mat.	
4				3.3-3.5 Dry, red-brown silty fine SAND and rock GRAVEL fragments of same (1/2" to 3/4") (fill).	
5				3.5-3.6 Gray SILT at end of core (pond sludge).	
6	2	3.6		4.0-4.4 Moist, black zone of organic SILT (fill).	
7				4.4-7.3 Moist to wet, alternating lenses of dark gray / gray / white SILT (1/2" to 1") (pond sludge) (fill).	
8				7.3-7.6 Moist, very dark gray organic SILT (fill).	
9				8.0-9.2 Saturated/wet, light gray / darker gray / gray-blue pigmented zones of SILT, transition interface of fill/natural material zone @ 9.3-9.4.	Probable native formation @ 9.4 feet, bgs.
10	3	3.9		9.2-9.4 Moist, white SILT (pond sludge/fill), transition to gray-brown clayey silty fine SAND (moist) with remnant fine roots, stems.	Sample interval: 9.4-10.4.
11				9.4-10.4 Moist, gray-brown silty fine to medium SAND, probable native formation.	Saturated sediment (water table) @ 10.5 feet, bgs.
12				10.5-11.9 Wet, see above 9.4-10.4.	
13	END OF BORING AT 12' BGS.				
14					
15					
16					
17					
18					
19					
20					

MAYWOOD - FUSRAP

DATE STARTED : June 23, 2004  
 DATE COMPLETED : June 23, 2004  
 DRILLING METHOD : Geoprobe  
 DRILLER : B&B / Gordon Blewett  
 GEOLOGIST : Joseph McGuckin

Maywood, New Jersey

Shaw Project #608575

Depth in feet	Core #	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS
0				0.0-0.3 Dry, gray GRAVEL (roadbase/fill).	Total core runs = 4
1				0.3-0.6 Dry, light brown / tan SILT with some fine sand and 15% gravel (fill).	Core run #4 installed 7 feet west of core run #1 due to dense obstruction at depth in core run #1.
2	1	3.9		0.6-2.2 Dry, light brown fine sandy SILT with 20% fine to medium angular gravel (fill).	
3				2.2-2.4 Dry, gray GRAVEL (former roadway subbase) (fill).	Core run #3 recovery (feet): 9.0-13.0: 3.4
4				2.4-2.7 Dry, light brown / tan friable layer rock GRAVEL and brown SILT matrix (fill).	Core run #4 recovery (feet): 9.0-13.0: 3.4
5				2.7-3.9 Dry, brown SILT with some gravel rock fragments and fine sand (fill).	
6	2	3.8		4.0-5.2 Dry, same as above (fill).	
7				5.2-5.4 Dry, dark brown silty HUMUS with little root mat and little medium angular gravel (fill).	
8				5.4-5.5 Moist, light beige silty CLAY (fill).	
9				5.5-7.0 Moist, light gray / gray / white alternating lenses (1/2" to 1.25") SILT (pond sludge/fill).	
10	3	3.9		7.0-7.1 Dry, black fine sandy SILT with organic fraction (fill).	Native soils @ 10.4 feet, bgs.
11				7.1-7.35 Moist, very light gray / white clayey SILT (fill).	Sample interval: 10.4-11.4.
12				7.35-7.4 Moist, gray fine sandy SILT with trace vegetation (stems, fibrous strands) (fill).	Saturated sediment (water table) @ 11.4 feet, bgs.
13	4	1.9		7.4-7.8 Moist, gray-brown silty fine SAND, with 10% root mat to 7.5, gray fine sandy SILT to 7.8.	
14				8.0-9.1 Moist, gray SILT with alternating darker/lighter lenses of gray color (1/2" to 1") (pond sludge/fill).	
15				9.1-10.1 Wet, alternating lenses of light gray / darker gray / white fine sandy SILT, grading to coarser silty fine SAND with increased depth (fill).	
16				10.1-10.4 Gray/black clayey SILT, with 15% vegetation fibers/strands visible, interface of fill/natural soils @ 10.4.	
17				10.4-10.7 Moist, dark gray-brown silty fine SAND (native soils).	
18				10.7-11.4 Moist, very dark gray / black silty fine SAND, grading to more sandy fraction with 20% silt matrix.	
19				11.4-13.9 Saturated/wet, very dark gray / black fine SAND with 15% to 20% silt matrix fraction.	
20				12.0-13.9 See above.	
END OF BORING AT 13.9' BGS.					

SHAW Environmental  
and Infrastructure, Inc.

BORING LOG DETAILS FOR: A-6

(Page 1 of 1)

MAYWOOD - FUSRAP

DATE STARTED : June 25, 2004  
 DATE COMPLETED : June 25, 2004  
 DRILLING METHOD : Geoprobe  
 DRILLER : B&B / Gordon Blewett  
 GEOLOGIST : Joseph McGuckin

Maywood, New Jersey

Shaw Project #608575

Depth in feet	Core #	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS
0				0.0-0.5 Dry, brown fine sandy SILT (topsoil) with grass and root mat and 30% rock fragments (fill).	Total core runs = 1
1				0.5-2.3 Dry, brown fine silty SAND with trace gravel fragments (fill).	
2	1	3.8		2.3-3.8 Dry, gray medium to fine SAND with 15% silt matrix fraction (fill).	
3					
4				4.0-5.7 Dry, light gray SILT (chalk-like powder/fill).	
5				5.7-5.9 Dry, light gray SILT (fill) transitioning to moist, black organic SILT @ 5.8.	
6	2	3.8		5.9-7.4 Moist, dark brown / black organic SILT.	Native soils @ 5.8 feet, bgs. Sample interval: 5.9-7.9.
7				7.4-7.8 Moist, transitioning coarser with depth to a dark brown very silty fine SAND (natural soil).	
8	END OF BORING AT 8' BGS.				
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

SHAW Environmental  
and Infrastructure, Inc.

BORING LOG DETAILS FOR: A-7

(Page 1 of 1)

MAYWOOD - FUSRAP

DATE STARTED : June 21, 2004

DATE COMPLETED : June 21, 2004

DRILLING METHOD : Geoprobe

Maywood, New Jersey

DRILLER : B&B / Gordon Blewett

Shaw Project #608575

GEOLOGIST : Joseph McGuckin

Depth in feet	Core #	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS	
0				0.0-1.0 Dry, light brown SILT (topsoil).	Total core runs = 2	
1				1.0-2.6 Dry, reddish-brown fine sandy SILT with 30% gravel fragments (fill).		
2	1	3.0		2.6-3.0 Dry, dark gray SILT (rock flour) with white coarse sand fraction (fill).		
3						
4				4.0-5.2 Dry, white / light gray SILT (pond sludge/fill).	Native soils @ 8.0 feet, bgs.  Sample interval: 9.0-11.0.  Saturated sediment (water table) @ 11.1 feet bgs.	
5				5.2-5.5 Moist, light gray chalky SILT (pond sludge/fill).		
6	2	3.6		5.5-6.6 Wet, light gray, laminated, alternating 0.5" varves of chalky SILT (pond sludge/fill).		
7				6.6-7.6 Wet, tan-beige SILT with trace fine sand (fill).		
8				8.0-11.1 Moist, very dark gray / black with white speckles organic SILT with decomposed lignite vegetation stems visible with some fine root mat (native soils).		
9				11.1-11.7 Wet, dark gray silty fine SAND grading to a fine sandy SILT with some clay.		
10	3	3.7				
11						
12				12.0-14.3 Saturated/wet, very dark gray silty fine SAND.		
13				14.3-15.8 Wet, dark brown silty fine SAND with some alternating dark tan silty clay (0.5") lenses @ 15.4-15.7.		
14	4	3.8				
15						
16	END OF BORING AT 16' BGS.					
17						
18						
19						
20						

07-28-2004 n:\COOK\Maywood\A-7.bor

SHAW Environmental  
and Infrastructure, Inc.

BORING LOG DETAILS FOR: A-8

(Page 1 of 1)

MAYWOOD - FUSRAP

DATE STARTED : June 25, 2004  
 DATE COMPLETED : June 25, 2004  
 DRILLING METHOD : Geoprobe  
 DRILLER : B&B / Gordon Blewett  
 GEOLOGIST : Joseph McGuckin

Maywood, New Jersey

Shaw Project #608575

Depth in feet	Core #	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS
0				0.0-1.0 Dry, brown-gray sandy SILT with 3/4" gravel rock fragments (fill).	Total core runs = 2
1				1.0-2.1 Dry, red-brown fine sandy SILT (fill).	Core run #2 recovery (feet):
2	1	3.4		2.1-3.4 Dry, red-brown fine sandy SILT with 30% large (3/4" to 2") gravel rock fragments (fill).	11.0-15.0: 3.6
3					
4				4.0-4.5 Dry, red-brown SILT (fill).	
5				4.5-5.0 Dry, dark brown SILT (fill).	
6	2	3.6		5.0-7.6 Moist, red-brown fine sandy SILT with some white mottles (fill).	
7					
8				8.0-10.0 Wet/saturated, white / gray / light gray / black alternating lenses SILT (pond sludge/fill).	
9				10.0-11.6 Saturated, gray/black/tan SILT lenses (same as 8.0-10.0), but darker color (fill).	
10	3	3.9		11.6-11.9 Wet, very dark gray / black fine/medium organic SILT, natural soils interface.	
11				**CORE RUN #2	Probable native soils @ 11.2 feet, bgs.
12				11.2-12.4 Moist, dark gray fine to medium SAND with 15% clay matrix fraction (probable native soils).	Sample interval: 11.2-12.4.
13				12.0-12.4 Moist, dark gray clayey medium to fine SAND, natural soils.	Saturated sediment (water table) @
14	4	3.1		12.4-12.7 Same as above, saturated @ 12.6.	12.6 feet, bgs.
15				12.7-15.1 Saturated, red-brown silty SAND, dense, residual Brunswick formation soils with remnant rock fabric.	
16	END OF BORING AT 16' BGS.				
17					
18					
19					
20					

07-28-2004 n:\COOK\MaywoodA-8.bor

SHAW Environmental  
and Infrastructure, Inc.

BORING LOG DETAILS FOR: B-1

(Page 1 of 1)

MAYWOOD - FUSRAP

DATE STARTED : June 23, 2004  
 DATE COMPLETED : June 23, 2004  
 DRILLING METHOD : Geoprobe  
 DRILLER : B&B / Gordon Blewett  
 GEOLOGIST : Joseph McGuckin

Maywood, New Jersey  
 Shaw Project #608575

Depth in feet	Core #	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS
0				0.0-0.4 Gray-brown fine sandy SILT (topsoil) with grass and root mat @ 0.0-0.1.	Total core runs = 2
1				0.4-1.0 Dry, tan/beige fine sandy SILT (fill).	Refusal @ 15.3.
2	1	3.3		1.0-1.6 Dry, red-brown SILT with 25% red-brown shale rock fragments (fill).	Core run #2 recovery (feet):
3				1.6-3.3 Dry, very light gray / white / tan mottled SILT (re-worked pond sludge) (fill).	11.0-15.0: 3.5
4				4.0-8.0 Wet/saturated, alternating lenses of light gray / tan / beige / white SILT (1/2" to 1.25"), very soft (pond sludge) (fill), continues to 10.5.	
5	2	4.0			
6					
7					
8				8.0-10.5 Wet/saturated, alternating lenses of gray/beige/tan/white SILT (1/2" to 1.25"), very soft (pond sludge/fill).	
9				10.5-11.2 Moist, gray/tan soft silty CLAY / clayey SILT.	
10	3	3.2		**CORE RUN #2 10.5-12.4 Moist, gray/tan silty CLAY (pond sludge/fill), grading to a more dense clayey SAND @ 12.4 (probable natural soils).	
11					
12				12.0-12.4 See above.	Probable native soils @ 12.4 feet, bgs.
13				12.4-15.3 Moist, very dark gray / black / red-brown fine to medium SAND with trace silt matrix and some red-brown (1.5") sandstone rock fragments (Brunswick formation) @ 13.5 (probable natural formation).	Sample interval: 12.4-13.4.
14	4	3.3			
15					
16				END OF BORING AT 15.3' BGS.	
17					
18					
19					
20					

07-28-2004 n:\COOK\Maywood\B-1.bor

SHAW Environmental  
and Infrastructure, Inc.

BORING LOG DETAILS FOR: B-2

(Page 1 of 1)

MAYWOOD - FUSRAP

DATE STARTED : June 22, 2004  
 DATE COMPLETED : NA  
 DRILLING METHOD : Geoprobe  
 DRILLER : B&B / Gordon Blewett  
 GEOLOGIST : Joseph McGuckin

Maywood, New Jersey

Shaw Project #608575

Depth in feet	Core #	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS
0					
1	1				Total core runs = 2 B-2 offset 7 feet north due to overhead power lines. Obstruction/refusal encountered @ 2.0 in both core runs. Boring abandoned.
2				END OF BORING AT 2' BGS.	
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

MAYWOOD - FUSRAP

DATE STARTED : June 23, 2004  
 DATE COMPLETED : June 23, 2004  
 DRILLING METHOD : Geoprobe  
 DRILLER : B&B / Gordon Blewett  
 GEOLOGIST : Joseph McGuckin

Maywood, New Jersey  
 Shaw Project #608575

Depth in feet	Core #	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS
0				0.0-0.4 Dry, gray/red/tan GRAVEL with silt (roadway subbase/fill).	Total core runs = 2  Core run #2 recovery (feet): 6.0-10.0: 3.8
1			0.4-1.6 Dry, red-brown large GRAVEL with silt (fill).		
2	1	3.9	1.6-2.3 Dry, light tan fine GRAVEL and fine SAND with silt matrix (roadbase/fill), burlap fabric swatch @ 2.3.		
3			2.3-2.7 Dry, gray fine GRAVEL with fine to medium sand and silt matrix (fill).		
4			2.7-3.7 Very dark gray / black SILT with 35% 1/2" to 3/4" gravel, trace vegetation stems (fill).		
5			3.7-3.9 Dark red-brown lignite fibrous SILT with root mat (fill).		
6	2	3.7	4.0-4.25 Dry, dark gray / black SILT with 30% fine to medium gravel fraction (fill).		
7			4.25-4.55 Dry, gray/beige SILT with 25% fine to medium gravel fraction (fill).		
8			4.55-4.65 Dry, light red-gray SILT (rock flour) with trace medium gravel.		
9			4.65-4.9 Moist, dark brown SILT with trace fine sand.		
10	3	3.9	4.9-5.2 Dry, gray-brown medium/fine/coarse GRAVEL with 30% silt fraction (fill).	Sample collected in probable fill interval (7.8-8.5 feet, bgs) above the water table.  Saturated sediment (water table) @ 9.3 feet, bgs.  Probable native soils @ 11.3 feet, bgs.	
11			5.2-5.6 Dry, red-brown large GRAVEL and SILT (rock flour), Brunswick formation siltstone (fill).		
12			5.6-5.7 Moist, red BRICK fragments with brown soil matrix (fill).		
13			5.7-6.4 Dry, gray SILT, dense (fill).		
14			6.4-6.9 Dry, dark gray SILT with little 25% fine to medium gravel/slag fraction (fill). Natural interface @ 6.9.		
15			6.9-7.4 Moist, black SILT with red laminations (remnant rock fabric/texture).		
16			7.4-7.6 Moist, gray/beige SILT (fill-verified).		
17			7.6-7.8 Moist, black SILT (same as 6.9-7.4, fill).		
18			**CORE RUN #2		
19			7.8 Glass fragments.		
20			8.0-8.2 Same as above (7.6-7.8) to 8.1, then black organic SILT to 8.2.		
			8.2-8.5 Moist, light gray fine SAND with trace silt matrix (pond sludge/fill), alternating light/darker lenses 1/2" to 3/4" pattern.		
			8.5-9.0 Moist, alternating lenses (1/2" to 3/4" thick) of very light gray / white inorganic SILT and very fine SAND (pond sludge/fill).		
			9.0-11.3 Saturated/wet 9.3-11.3, same as above except black organic silt lens included (pond sludge/fill).		
			11.3-11.9 Wet, black organic SILT (native formation).		
			END OF BORING AT 12' BGS.		

07-28-2004. n:\COCK\Maywood\B-3.bor

SHAW Environmental  
and Infrastructure, Inc.

BORING LOG DETAILS FOR: B-4

(Page 1 of 1)

MAYWOOD - FUSRAP

DATE STARTED : June 22, 2004  
 DATE COMPLETED : June 22, 2004  
 DRILLING METHOD : Geoprobe  
 DRILLER : B&B / Gordon Blewett  
 GEOLOGIST : Joseph McGuckin

Maywood, New Jersey

Shaw Project #608575

Depth in feet	# Core	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS
0				0.0-0.5 Dry, gray road GRAVEL and ROCK FLOUR.	Total core runs = 3  Core run #2 recovery (feet): 10.0-14.0: 3.4  Core run #3 recovery (feet): 10.0-14.0: 3.4
1			0.5-1.0 Dry, brown/gray fine to medium SAND with some fine gravel and little silt (fill).		
2	1	3.2	1.0-3.2 Light gray / beige / white SILT with some fine sandy silt laminations. Same through 4.0-6.2 (pond sludge/fill).		
3					
4				4.0-6.2 Same as above (fill).	Probable native soils @ 10.0 feet, bgs. Sample interval: 10.0-11.3.
5			6.2-6.5 Dry, dark gray / brown coarse SAND / fine GRAVEL with trace silt (fill).		
6	2	3.4	6.5-7.4 Light gray / beige / white SILT with some fine sandy silt laminations. Continues in 8.0-9.9 (pond sludge/fill).		
7					
8			8.0-9.9 Same as above.		
9			9.9-10.0 Moist, gray/tan (transition zone) silty CLAY (fill/natural).		
10	3	3.6	10.0-10.4 Moist, orange-brown fine sandy CLAY (probable native soils). 10.4-11.0 Moist, gray fine sandy clayey SILT grading to a black organic SILT.		
11			11.0-11.6 Moist, dark gray / black organic SILT/PEAT with lignite roots and vegetation stems, strong organic odor, natural material.		
12			12.0-14.3 Orange-brown / dark gray / black / tan mottled silty CLAY with 15% fine subrounded gravel (1/4" to 1/2") fraction.		
13			14.3-15.3 More uniformly dark reddish brown CLAY (same texture as 12.0-14.3).		
14	4	3.3			
15					
16				END OF BORING AT 16' BGS.	
17					
18					
19					
20					

07-28-2004 n:\COOK\Maywood\B-4.bor

MAYWOOD - FUSRAP

DATE STARTED : June 22, 2004  
 DATE COMPLETED : June 22, 2004 (see remarks)  
 DRILLING METHOD : Geoprobe  
 DRILLER : B&B / Gordon Blewett  
 GEOLOGIST : Joseph McGuckin

Maywood, New Jersey

Shaw Project #608575

Depth in feet	Core #	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS
0				0.0-0.3 Dry, gray quartz GRAVEL.	Total core runs = 2
1				0.3-1.1 Dry, dark brown fine sandy SILT (topsoil) with some fine gravel fragments.	Refusal @ 19.0
2	1	3.9		1.1-1.9 Dry, red-brown sandy SILT with rock fragments/gravel (fill). 1.9-2.9 Dry, brown / tan / light gray fine sandy SILT with laminations of white silt (pond sludge/fill). 2.9-3.9 Moist, light gray / white SILT layers interbedded with 1/2" to 3/4" layers of medium to fine quartz sand (pond sludge/fill).	B-5 resampled 6/25 (core run #3), 1 foot west of original boring.  Core run #3 recovery (feet): 8.0-12.0: 2.8 12.0-16.0: 3.8
4				4.0-7.8 Moist, same as above, light gray / white SILT (pond sludge/fill).	
6	2	3.8			
8				8.0-11.3 Wet, white 2" lenses SILT with regular 1/8" lenses gray silt (pond sludge/fill).	Probable perched water in pond sludge/fill @ 8.0-15.7 feet, bgs.
10	3	3.3			
12				12.0-12.6 Wet, white / light gray SILT (pond sludge/fill). 12.6-15.6 Wet, black SILT with little fine sand and regular 1/2" lenses white silt every 1.5" to 2.5" (pond sludge/fill). 15.6-15.8 Wet, gray SILT with little fine sand (probable native formation). **CORE RUN #3 12.0-16.0 Wet, alternating layers SILT with trace fine sand.	Sample collected in probable pond sludge/fill (saturated) interval (12.4-14.4 feet, bgs).
14	4	3.8			
16				16.0-19.0 Moist, red-brown medium to fine SAND with some Brunswick formation rock fragments (1/4" to 1"), black mottles at some zones (1/16" to 1/8").	Sample collected in native soils interval (15.7-17.7 feet, bgs).
17	5	2.7			
19	END OF BORING AT 19' BGS.				
20					

MAYWOOD - FUSRAP

DATE STARTED : June 22, 2004  
 DATE COMPLETED : June 22, 2004  
 DRILLING METHOD : Geoprobe  
 DRILLER : B&B / Gordon Blewett  
 GEOLOGIST : Joseph McGuckin

Maywood, New Jersey

Shaw Project #608575

Depth in feet	Core #	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS
0				0.0-0.5 Dry, gray / light tan / white 3/4" GRAVEL and ROCK FLOUR (roadway surface).	Total core runs = 2
1				0.5-0.9 Dry, dark brown fine sand SILT (topsoil).	Core run #2 recovery (feet):
2	1	3.4		0.9-1.2 Dry, dark gray / dark brown fine sandy SILT with 15% red brick fragments (fill).	7.0-11.0: 3.9
3				1.2-3.4 Dry, dark gray / brown fine sandy SILT with 20% gray rock gravel and red brick fragments (1/2" to 3/4") (fill).	
4				4.0-4.7 Moist, same as above, dark gray / brown sandy SILT (fill).	
5				4.7-5.0 Gray/tan rock GRAVEL (1/4" to 1/2") fragments and ROCK FLOUR.	
6	2	3.3		5.0-5.2 Dry to moist, gray / white / dark brown mottled fine sandy SILT with 20% 3/4" rock fragments (fill).	Sample interval: 7.8-8.8.
7				5.2-5.5 Moist, dark reddish brown SILT (peat-like fabric) with rock fragments (fill).	
8				5.5-5.6 Dry, white/gray SILT lens (chalk-like and friable).	
9				5.6-5.8 Moist, tan/brown SILT with 20% clay and 20% very fine sand.	
10	3	3.9		5.8-6.3 Dark reddish brown silty coarse SAND / fine GRAVEL (same as 5.2-5.5) with decomposed wood fragments (postage stamp size/shape).	Probable native soils @ 12.0 feet, bgs.
11				6.3-6.5 Dark gray / brown fine sandy SILT with trace medium gravel fragments.	Saturated sediment (water table) @ 12.5 feet, bgs.
12				6.5-6.6 Moist, red-brown silty CLAY lens.	
13				6.6-6.7 Moist, black silty coarse SAND lens.	
14	4	3.4		6.7-6.95 Brown silty SAND.	
15				6.95-7.1 Red-brown Brunswick sandstone ROCK fragment (1.5").	
16				Natural soil / fill transition interface.	
17				7.1-7.3 Moist, black / very dark brown coarse SAND with 40% black silt (natural material).	
18				8.0-11.9 Moist to 11.5, saturated/wet @ 11.6, dark gray / light gray / white / black interbedded lenses (1/2" to 1") with little decomposed fragments of vegetation (roots, stems, long fibrous stalks). Soil lenses alternate from silty CLAY to clayey SILT to black organic CLAYS/SILTS (probable pond sludge/fill).	
19				12.0-12.5 Moist, gray fine to medium SAND with trace silt matrix fraction (probable native formation).	
20				12.5-12.7 Wet, gray clayey medium to fine SAND.	
				12.7-12.9 Wet, black / dark gray sandy CLAY lens.	
				12.9-13.4 Wet, stiff dark gray sandy CLAY.	
				13.4-14.2 Wet/saturated, dark gray fine to medium SAND with trace clay/silt matrix.	
				14.2-15.4 Wet/saturated, very dark gray / black fine SAND with trace silt matrix and strong organic odor, natural.	
				END OF BORING AT 16' BGS.	

07-28-2004 n:\COCK\Maywood\B-6.bor

SHAW Environmental  
and Infrastructure, Inc.

BORING LOG DETAILS FOR: B-7

(Page 1 of 1)

MAYWOOD - FUSRAP

DATE STARTED : June 23, 2004  
 DATE COMPLETED : June 23, 2004  
 DRILLING METHOD : Geoprobe  
 DRILLER : B&B / Gordon Blewett  
 GEOLOGIST : Joseph McGuckin

Maywood, New Jersey

Shaw Project #608575

Depth in feet	Core #	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS
0				0.0-0.5 Dry, gray coarse GRAVEL and light gray sandy SILT matrix (roadway subbase).	Total core runs = 2
1				0.5-1.9 Dry, tan / light brown fine GRAVEL and fine SAND with silt matrix (fill), burlap fabric swatch at 1.9.	Refusal @ 15.5.
2	1	3.4		1.9-2.2 Dry, gray fine to medium GRAVEL and coarse to medium SAND with silt matrix (fill).	Core run #2 recovery (feet): 7.0-11.0: 3.2
3				2.2-2.6 Dry, dark gray SILT with 20% vegetation fragments (stems, stalks, fibers) (fill).	
4				2.6-2.9 Dry, dark gray-brown SILT with little fine sand.	
5				2.9-3.3 Moist, dark reddish brown SILT with humus and fine root mat.	
6	2	3.7		3.3-3.4 Moist, light gray SILT (chalk-like) with trace root mat (pond sludge/fill).	
7				4.0-7.7 Moist, alternating lenses of dark gray / light gray / white SILT (1/2" to 1.5") (pond sludge/fill).	
8				8.0-8.1 Gray GRAVEL, marks interface limits of fill (pond sludge) and natural interbedded silts and fine sands.	Sample interval: 8.1-9.1.
9				8.1-9.2 Moist, black/gray alternating lenses (1/2" to 3/4") of organic SILT (black) and very fine sandy SILT (gray) (pond sludge/fill).	Probable native soils @ 9.2 feet, bgs.
10	3	3.9		9.2-11.1 Wet, very dark gray fine sandy SILT, grading downward to a silty fine SAND, natural residual/weathered Brunswick formation.	
11				11.1-11.9 Moist, red-brown silty fine to medium SAND and some rock GRAVEL fragments (Brunswick formation), pyrite fragment (1/8") @ 11.4.	
12					
13					
14	4	3.0			
15					
16				END OF BORING AT 15.5' BGS.	
17					
18					
19					
20					

SHAW Environmental  
and Infrastructure, Inc.

BORING LOG DETAILS FOR: C-1

(Page 1 of 1)

MAYWOOD - FUSRAP

DATE STARTED : June 24, 2004  
 DATE COMPLETED : June 24, 2004  
 DRILLING METHOD : Geoprobe  
 DRILLER : B&B / Gordon Blewett  
 GEOLOGIST : Joseph McGuckin

Maywood, New Jersey

Shaw Project #608575

Depth in feet	Core #	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS
0				0.0-0.4 Dry, brown SILT and grass root mat (fill). 0.4-1.1 Dry, mottled light gray / brown / white SILT (industrial fill). 1.1-1.4 Dry, gray/brown mottled SILT with trace vegetation fragments (fill). 1.4-1.6 Moist, gray SILT unit (fill). 1.6-3.2 Moist, white / gray / light gray / tan SILT with chalk-like consistency, interbedded lenses (1/2" to 2") (pond sludge/fill). 3.2-4.1 Moist, same as above (1.6-3.2) (pond sludge/fill).	Total core runs = 2
1	1	4.1			
2					
3					
4				4.0-6.2 Moist to wet, same as above (1.6-4.1) (pond sludge/fill). 6.2-6.6 Saturated/wet, black organic SILT lenses (1/2" to 1") interbedded with very light gray silt lenses (1/2" to 1") (pond sludge/fill). 6.6-7.1 Gray / light gray / white / tan SILT lenses with trace fine sand (10%) (pond sludge/fill). 7.1-7.9 Very dark gray / black organic SILT zone with 1/8" laminations of light gray fine sand (fill).	Native soils @ 10.2 feet, bgs. Sample interval: 10.2-11.2. Saturated sediment (water table) @ 11.2 feet, bgs.
5	2	3.9			
6					
7					
8				8.0-9.5 Dark gray / very dark gray / black interbedded lenses of organic SILT (black) and SILT and silty gray CLAY (fill). 9.5-10.1 Black organic CLAY with some fine gravel and coarse to medium sand (5%) (fill). 10.1-10.2 Dark gray GRAVEL (1/2" to 3/4") with organic silt matrix (transition zone - bottom of pond/lagoon/basin). 10.2-11.2 Moist, dark gray-brown clayey fine to medium SAND (native soils). 11.2-13.0 Wet/saturated, dark gray-brown clayey fine to medium SAND, natural soils.	
9					
10	3	3.8			
11					
12				**CORE RUN #2 12.0-13.0 See above.	
13	4	1.0			
14				END OF BORING AT 13' BGS.	
15					
16					
17					
18					
19					
20					

SHAW Environmental  
and Infrastructure, Inc.

BORING LOG DETAILS FOR: C-2

(Page 1 of 1)

MAYWOOD - FUSRAP

DATE STARTED : June 24, 2004  
 DATE COMPLETED : June 24, 2004  
 DRILLING METHOD : Geoprobe  
 DRILLER : B&B / Gordon Blewett  
 GEOLOGIST : Joseph McGuckin

Maywood, New Jersey

Shaw Project #608575

Depth in feet	Core #	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS
0				0.0-0.6 Dry, brown SILT with grass and root mat (fill). 0.6-1.1 Dry, very light gray / white SILT (fill).	Total core runs = 1
1			1.1-1.3 Moist, dark gray clayey SILT, some organic fraction (fill). 1.3-3.4 Moist, interbedded gray / dark gray / light gray / white / orange-tan lenses (1/2" to 1.75") SILT (pond sludge/fill).		
2	1	3.4			
3					
4				4.0-7.3 Moist to saturated (5.8-7.3), same as above (pond sludge/fill).	
5					
6	2	3.3			
7					
8				8.0-8.4 Continued interbedded gray/white/tan SILT (chalk-like) (pond sludge/fill).	Native soils @ 8.6 feet, bgs. Sample interval: 8.6-10.6.
9				8.4-8.6 Interbedded dark gray / beige clayey fine SAND at transition interface from fill to natural soils.	
10	3	3.1		8.6-9.0 Moist, tan-brown / orange-brown layers/lenses clayey medium to fine SAND (natural soils). 9.0-9.5 Moist, tan/orange-brown SAND with 10% silt matrix.	Saturated sediment (water table) @ 10.8 feet, bgs.
11				9.5-9.9 Moist, interbedded laminations orange / tan-gray fine to medium SAND with trace silt matrix.	
12				9.9-10.4 Moist, gray fine to medium SAND. 10.4-11.1 Moist 10.4-10.8, saturated/wet 10.8-11.1, dark gray medium SAND with some fine and coarse sand fraction.	
13				END OF BORING AT 12' BGS.	
14					
15					
16					
17					
18					
19					
20					

07-28-2004 n:\COOR\Maywood\C-2.bor

SHAW Environmental  
and Infrastructure, Inc.

BORING LOG DETAILS FOR: C-3

(Page 1 of 1)

MAYWOOD - FUSRAP

DATE STARTED : June 24, 2004  
 DATE COMPLETED : June 24, 2004  
 DRILLING METHOD : Geoprobe  
 DRILLER : B&B / Gordon Blewett  
 GEOLOGIST : Joseph McGuckin

Maywood, New Jersey

Shaw Project #608575

Depth in feet	Core #	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS
0				0.0-0.3 Moist, light gray silty fine SAND and grass and root mat (fill). 0.3-0.9 Dry, lighter gray mottled with white SILT (industrial fill). 0.9-1.0 Dry, white SILT (fill). 1.0-1.5 Moist, alternating lenses gray/tan/white SILT (fill). 1.5-4.0 Moist to wet, alternating lenses (1/4" to 2.25") beige / tan / gray / light gray / white / rust orange-brown SILT (pond sludge/fill).	Total core runs = 2 Core run #2 recovery (feet): 8.0-12.0: 4.0
1	1	4.0			
2					
3					
4				4.0-7.8 Wet/saturated, same as above (1.5-4.0), black / dark gray lenses 7.6-7.8 (pond sludge/fill).	
5					
6	2	3.8			
7					
8				8.0-9.4 Saturated/wet, dark gray / black / light gray / purple-gray / blue-gray alternating lenses clayey SILT, soft with minimal plasticity (not fatty clay) (pond sludge/fill). 9.4-9.6 Very dark gray / black fine sandy SILT (probable native soils). 9.6-10.6 Moist, very dark gray / black fine SAND with 35% clay matrix fraction. 10.6-11.8 Wet/saturated, large intertwined mottles (3" to 4") black dense fine SAND with trace silt and dark gray fine sand, coarsening downward to 11.3-11.8 to a dark gray medium to fine SAND (natural soils).	Native soils @ 9.4 feet, bgs. Sample interval: 9.6-10.6. Saturated sediment (water table) @ 10.6 feet, bgs.
9					
10	3	3.8			
11					
12				END OF BORING AT 12' BGS.	
13					
14					
15					
16					
17					
18					
19					
20					

SHAW Environmental  
and Infrastructure, Inc.

BORING LOG DETAILS FOR: C-5

(Page 1 of 1)

MAYWOOD - FUSRAP

DATE STARTED : June 24, 2004  
 DATE COMPLETED : June 24, 2004  
 DRILLING METHOD : Geoprobe  
 DRILLER : B&B / Gordon Blewett  
 GEOLOGIST : Joseph McGuckin

Maywood, New Jersey

Shaw Project #608575

Depth in feet	Core #	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS
0				0.0-0.2 Dry, gray GRAVEL and grass root mat (fill).	Total core runs = 2  Core run #2 recovery (feet): 7.0-11.0: 3.0          Native soils @ 8.6 feet, bgs. Sample interval: 8.6-9.6. Saturated sediment (water table) @ 9.6 feet, bgs.
1	1	3.6		0.2-1.1 Moist, light gray brown SILT (industrial fill).	
2				1.1-2.1 Moist, very light gray / white very fine sandy SILT (pond sludge) (fill).	
3				2.1-3.0 Moist, alternating lenses gray / light gray / white / tan-orange SILT (1/4" to 1.5") (fill).	
4	2	4.0		3.0-3.6 Moist, very light gray fine sandy SILT (fill).	
5				4.0-4.5 Moist, same as above (fill).	
6				4.5-6.7 Wet/saturated, alternating layers dark gray / gray / white / light gray clayey SILT (pond sludge/fill).	
7				6.7-7.6 Wet/saturated, alternating lenses gray / black / dark gray organic SILT (pond sludge/fill).	
8	3	3.4		7.6-8.0 Dry, dark gray-brown very coarse SAND with 25% medium to fine sand and trace silt and cinder slag (fill).	
9				8.0-8.5 Same as 7.6-8.0, with large gravel (red brick) fragments and cinder/slag gravel fragments (fill).	
10				8.5-8.6 Moist, dark gray-brown SILT with trace fine sand matrix (fill), interface of fill / natural soil transition zone.	
11				8.6-9.6 Moist, dark gray-brown medium to fine SAND with 15% silt matrix fraction (natural soils).	
12				9.6-10.8 Wet/saturated, black / very dark gray fine SAND with 20% silt matrix (natural soils).	
13	END OF BORING AT 12' BGS.				
14					
15					
16					
17					
18					
19					
20					

SHAW Environmental  
and Infrastructure, Inc.

BORING LOG DETAILS FOR: C-6

(Page 1 of 1)

MAYWOOD - FUSRAP

DATE STARTED : June 24, 2004

DATE COMPLETED : June 24, 2004

DRILLING METHOD : Geoprobe

Maywood, New Jersey

DRILLER : B&B / Gordon Blewett

Shaw Project #608575

GEOLOGIST : Joseph McGuckin

Depth in feet	Core #	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS	
0				0.0-0.4 Dry, tan SILT with grass and root mat (fill).	Total core runs = 4 * = Core run #2 (0.0 recovery in core run #1).	
1				0.4-1.0 Dry, light gray mottled with white SILT (industrial fill).		
2	1	3.4		1.0-1.6 Dry, light gray SILT with trace fine sand, powder-like (fill). 1.6-2.3 Dry, white / very light gray SILT with 25% fine sand (fill). 2.3-3.4 Moist, alternating layers/lenses (1/2" to 1.5") white / gray / light gray SILT (pond sludge/fill).		
3						
4				4.0-7.6 Moist, alternating lenses (1/2" to 1.5") white / light gray / gray / black organic SILT (pond sludge/fill) (same as 2.3-3.4).		
5				7.6-7.9 Moist, light brown / tan clayey SILT (pond sludge/fill).		
6	2	3.9				
7						
8				**CORE RUN #2		
9				8.0-11.9 Alternating lenses (1/2" to 1.75") black / gray-blue / dark gray / tan / gray / saturated white SILT (hydraulic fill) with very soft consistency and no physical strength characteristics (pond sludge/fill).		
10	3	3.9*				
11						
12				12.0-12.5 Moist, gray / gray-blue silty CLAY, medium stiff (pond sludge/fill).	Native soils @ 12.6 feet, bgs. Sample interval: 12.6-13.6. Saturated sediment (water table) @ 13.7 feet, bgs.	
13				12.5-12.6 Transition zone - fill / natural soils with clayey medium to fine SAND with trace silt matrix.		
14	4	3.7		12.6-13.6 Moist, dark brown-gray / black fine to medium SAND with 20% silt matrix.		
15				13.6-15.7 Same as above, saturated 13.7-15.7.		
16	END OF BORING AT 16' BGS.					
17						
18						
19						
20						

SHAW Environmental  
and Infrastructure, Inc.

BORING LOG DETAILS FOR: C-7

(Page 1 of 1)

MAYWOOD - FUSRAP

DATE STARTED : June 25, 2004  
 DATE COMPLETED : June 25, 2004  
 DRILLING METHOD : Geoprobe  
 DRILLER : B&B / Gordon Blewett  
 GEOLOGIST : Joseph McGuckin

Maywood, New Jersey

Shaw Project #608575

Depth in feet	Core #	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS
0				0.0-0.2 Dry, light brown-gray fine sandy SILT with grass and root mat (topsoil) (fill).	Total core runs = 2
1				0.2-0.6 Dry, light gray / tan SILT (fill).	Core run #2 recovery (feet):
2	1	3.5		0.6-1.0 Dry, very light brown / tan SILT (fill).	7.0-11.0: 3.5
3				1.0-1.2 Moist, light tan SILT (fill).	
4				1.2-1.5 Dry, mottled brown / light tan SILT (fill).	
5				1.5-1.7 Moist, light beige / tan clayey SILT (fill).	
6	2	3.1		1.7-2.0 Dry, mottled (re-worked material) brown / dark gray / light gray SILT with 20% coarse slag sand fraction (fill).	
7				2.0-2.8 Moist, very light gray / white / tan interbedded lenses SILT with trace fine sand (fill).	
8				2.8-3.5 Moist, brown / tan / gray / white / orange-tan interbedded lenses (1/2" to 2.5") SILT (pond sludge/fill).	
9				4.0-5.0 Moist, same as above (2.8-3.5), interbedded SILT lenses (pond sludge/fill).	
10	3	3.3		5.0-5.3 Moist, tan-brown clayey SILT / silty CLAY (fill).	
11				5.3-5.7 Moist, brown silty fine SAND and 10% root mat vegetation remnants (fill).	Native soils @ 7.6 feet, bgs.
12				5.7-7.1 Dry, dark gray / dark brown / black lenses coarse SAND / fine gravel-sized CINDERS/SLAG (fill).	Sample interval: 7.6-8.6.
13				**CORE RUN #2	
14				7.0-7.5 Moist, dark orange-brown rusty coarse SAND / fine GRAVEL with 10% fines of cinder/slag (fill).	Saturated sediments (water table) @ 9.2 feet, bgs.
15				7.5-7.6 Moist, transition fill interface at 7.6, black organic SILT with 15% fine root mat (natural soils).	
16				7.6-8.6 Moist, very dark gray / black fine sandy SILT with 10% clay fraction (natural material), stiff consistency and density, high natural organic content (native soils).	
17				8.0-8.6 See above.	
18				8.6-11.3 Same as above (7.6-8.6) except wet/saturated @ 9.2 to 9.5, then coarsening downward to silty fine SAND @ 9.7, to a fine to medium SAND @ 10.1, and coarse to medium black SAND @ 11.0-11.3 (natural soils).	
19				END OF BORING AT 12' BGS.	
20					

SHAW Environmental  
and Infrastructure, Inc.

BORING LOG DETAILS FOR: C-8

(Page 1 of 1)

MAYWOOD - FUSRAP

DATE STARTED : June 25, 2004  
 DATE COMPLETED : June 25, 2004  
 DRILLING METHOD : Geoprobe  
 DRILLER : B&B / Gordon Blewett  
 GEOLOGIST : Joseph McGuckin

Maywood, New Jersey

Shaw Project #608575

Depth in feet	# Core	Sample Recovery (feet)	PID (ppm)	DESCRIPTION	REMARKS
0				0.0-0.3 Dry, gray-brown fine sandy SILT and grass root mat (fill).	Total core runs = 2  Core run #2 recovery (feet): 3.0-7.0: 3.0  Native soils @ 4.7 feet, bgs. Sample interval: 4.7-6.2.  Max PID (11.3-11.6) = 1.3 ppm.
1				0.3-0.5 Dry, brown-gray SILT and grass root mat (topsoil) (fill).	
2	1	3.6		0.5-1.1 Dry, gray-brown SILT with 50% red-brown sandstone/shale rock fragments (fill).	
3				1.1-2.2 Moist, mottled gray / white / black / dark gray / tan-orange SILT (pond sludge/fill).	
4				2.2-2.8 Dry, dark brown / tan / dark gray / dark orange-brown SILT and cinder/slag coarse SAND / fine GRAVEL (industrial fill).	
5				2.8-3.6 Dry, dark red-orange-brown / dark gray / dark brown / white mottled CINDER/SLAG (fill).	
6	2	3.1		4.0-4.6 Dry, same as above (2.8-3.6), black/tan SLAG (fill).	
7				4.6-4.7 Moist, transition zone interval - fill (slag/cinders) to natural soils, brown coarse to medium SAND with trace clay.	
8				4.7-6.2 Moist, darker orange-reddish brown fine SAND with 20% medium sand and 15% silt/clay fine fraction matrix, 30% 1/2" to 3/4" weathered subrounded sandstone gravel (Brunswick formation), soils and rock contained visible remnant rock fabric (natural material).	
9				6.2-7.1 Saturated/wet at 6.3, dark red-brown fine sandy clayey SILT with remnant rock fabric (horizontal/diagonal lines) to 6.6, coarsening downward to wet, black silty fine SAND (natural soils).	
10	3	3.6	1.3	8.0-8.8 Moist, black / dark gray silty fine SAND.	
11				8.8-9.7 Moist, dark gray / red-brown fine sandy SILT with 40% red-brown rock fragments (3/4"-2").	
12				9.7-11.3 Moist, orange-brown silty fine SAND with 40% red-brown rock fragments (Brunswick formation).	
13				11.3-11.6 Moist, red-brown SHALE/SANDSTONE rock fragments with black petroleum oil visible.	
14				END OF BORING AT 12' BGS.	
15					
16					
17					
18					
19					
20					

07-28-2004 n:\COOK\Maywood\C-8.bor

## **APPENDIX C HYDROMETER AND GRAIN SIZE**

This page intentionally left blank.

**HYDROMETER ANALYSIS  
WITH MECHANICAL GSA  
ASTM D 422**

MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206920-Shaw-003	SAMPLED	6/21/04
DEPTH	13.4-15.4	DATE TESTED	7/14/04 RS
SAMPLE NO.	12b-021745	WASH SIEVE	Yes
SOIL DESCR.	Proj #206920	DRY SIEVE	No
LOCATION	Maywood Fusrap		

MOISTURE DATA

HYGROSCOPIC	Yes
NATURAL	No
Wt. Wet Soil & Pan (g)	44.33
Wt. Dry Soil & Pan (g)	40.08
Wt. Lost Moisture (g)	4.25
Wt. of Pan Only (g)	3.61
Wt. of Dry Soil (g)	36.47
Moisture Content %	11.7
Wt. Hydrom. Sample Wet (g)	57.72
Wt. Hydrom. Sample Dry (g)	51.70

WASH SIEVE ANALYSIS

Wt. Total Sample	
Wet (g)	262.17
Weight of + #10	
Before Washing (g)	55.37
Weight of + #10	
After Washing (g)	39.22
Weight of - #10	
Wet (g)	206.80
Weight of - #10	
Dry (g)	199.68
Wt. Total Sample	
Dry (g)	238.90
Calc. Wt. "W" (g)	61.85
Calc. Mass + #10	10.15

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0.00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	0.00	0.00	0.00	0.0	100.0
#4	0.00	19.78	19.78	19.78	8.3	91.7
#10	0.00	19.44	19.44	39.22	16.4	83.6
#20	2.36	5.04	2.68	2.68	20.8	79.2
#40	2.36	5.80	3.44	6.12	26.3	73.7
#60	2.31	6.60	4.29	10.41	33.2	66.8
#100	2.34	7.97	5.63	16.04	42.4	57.6
#200	2.36	10.75	8.39	24.43	55.9	44.1

Data entered by: RS Date: 07/16/2004  
 Data checked by: SR Date: 7-14-04  
 FileName: QUH00345

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

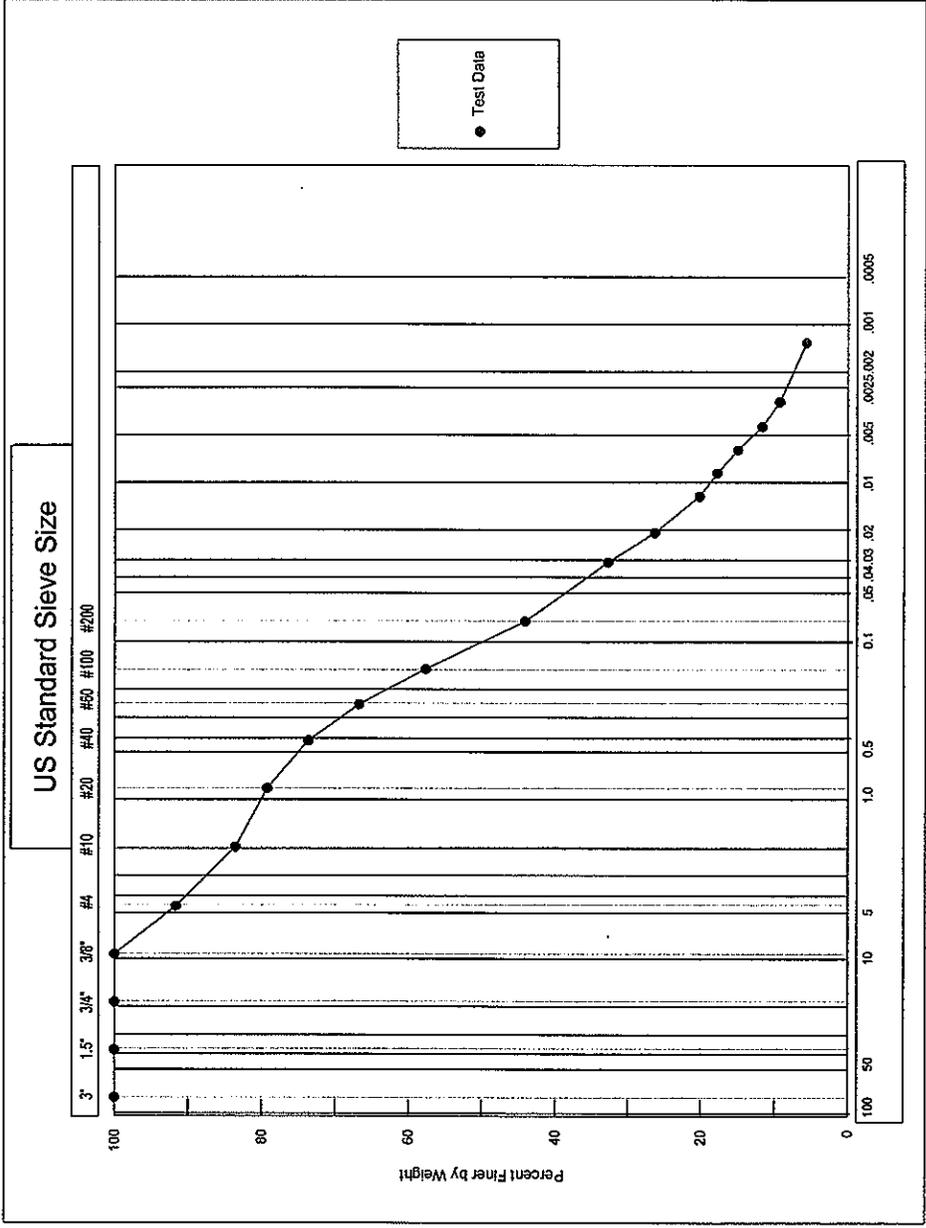
CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206920-Shaw-003	SAMPLED	6/21/04
DEPTH	13.4-15.4	DATE TESTED	7/14/04 RS
SAMPLE NO.	12b-021745	WASH SIEVE	Yes
SOIL DESCR.	Proj #206920	DRY SIEVE	No
LOCATION	Maywood Fusrap		
Hydrometer #	ASTM 152 H	Temp., Deg. C	24.7
Sp. Gr. of Soil	2.65	Temp. Coef. K	0.01291
Value of "alpha"	1.00	Wt. Dry Sample "W"	61.850
Deflocculant	Sodium Hexametaphosphate	% of Total Sample	100.0
Defloc. Corr'n	4.8		
Meniscus Corr'n	-1.0		

T	Hydrometer Reading		% Total Sample	Effective Depth L	Grain Diameter (mm)
Elapsed Time (min)	Original	Corrected "R"			
0.0	--	--	--	--	--
2.0	26.00	20.25	32.7	12.03	0.0316
5.0	22.00	16.25	26.3	12.68	0.0206
15.0	18.25	12.50	20.2	13.30	0.0122
30.0	16.75	11.00	17.8	13.54	0.0087
60.0	15.00	9.25	15.0	13.83	0.0062
120.0	13.00	7.25	11.7	14.16	0.0044
250.0	11.50	5.75	9.3	14.40	0.0031
1448.0	9.25	3.50	5.7	14.77	0.0013

Grain Diameter = K\*(SQRT(L/T))

Data entered by: RS      Date: 07/16/2004  
 Data checked by: SR      Date: 7-16-04  
 FileName: QUH00345

ADVANCED TERRA TESTING, INC.



COBBLES		GRAVEL			SAND			SILT OR CLAY			USCS
		COARSE	FINE	CFS	MEDIUM	FINE				WENTWORTH	
COBBLES TO BOULDERS		PEBBLE GRAVEL		SAND		SILT		CLAY			
		COARSE	MED	FINE	GRAN	COARSE	MED	FINE			

Client: **STL-CT**      Boring No.: **206920-Shaw-003**      Sample No.: **12b-021745**  
 Job Number: **2193-137**      Depth: **13.4-15.4**  
 Classification: **Classification Not Performed**      Advanced Terra Testing, Inc.

MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT STL-CT

JOB NO. 2193-137

BORING NO. 206920-Shaw-011  
DEPTH 6.0-7.1  
SAMPLE NO. 12b-021746  
SOIL DESCR. Proj #206920  
LOCATION Maywood Fusrap

SAMPLED 6/22/04  
DATE TESTED 7/14/04 RS  
WASH SIEVE Yes  
DRY SIEVE No

MOISTURE DATA

WASH SIEVE ANALYSIS

HYGROSCOPIC Yes  
NATURAL No  
Wt. Wet Soil & Pan (g) 44.24  
Wt. Dry Soil & Pan (g) 43.91  
Wt. Lost Moisture (g) 0.33  
Wt. of Pan Only (g) 3.68  
Wt. of Dry Soil (g) 40.23  
Moisture Content % 0.8

Wt. Total Sample Wet (g) 156.79  
Weight of + #10 Before Washing (g) 1.82  
Weight of + #10 After Washing (g) 1.21  
Weight of - #10 Wet (g) 154.97  
Weight of - #10 Dry (g) 154.31  
Wt. Total Sample Dry (g) 155.52  
Calc. Wt. "W" (g) 59.15  
Calc. Mass + #10 0.46

Wt. Hydrom. Sample Wet (g) 59.17  
Wt. Hydrom. Sample Dry (g) 58.69

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0.00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	0.00	0.00	0.00	0.0	100.0
#4	0.00	0.00	0.00	0.00	0.0	100.0
#10	0.00	1.21	1.21	1.21	0.8	99.2
#20	2.35	5.52	3.17	3.17	6.1	93.9
#40	2.35	7.78	5.43	8.60	15.3	84.7
#60	2.35	9.59	7.24	15.84	27.6	72.4
#100	2.35	11.38	9.03	24.87	42.8	57.2
#200	2.28	10.60	8.32	33.19	56.9	43.1

Data entered by: RS  
Data checked by: SR  
FileName: QUH01146

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206920-Shaw-011	SAMPLED	6/22/04
DEPTH	6.0-7.1	DATE TESTED	7/14/04 RS
SAMPLE NO.	12b-021746	WASH SIEVE	Yes
SOIL DESCR.	Proj #206920	DRY SIEVE	No
LOCATION	Maywood Fusrap		
Hydrometer #	ASTM 152 H	Temp., Deg. C	24.9
Sp. Gr. of Soil	2.65	Temp. Coef. K	0.01288
Value of "alpha"	1.00	Wt. Dry Sample "W"	59.147
Deflocculant	Sodium Hexametaphosphate	% of Total Sample	100.0
Defloc. Corr'n	4.8		
Meniscus Corr'n	-1.0		

T	Hydrometer Reading		100Ra/W	% Total Sample	Effective Depth L	Grain Diameter (mm)
Elapsed Time (min)	Original	Corrected "R"				
0.0	--	--	--	--	--	--
0.5	28.00	22.20	37.5	37.5	11.70	0.0623
1.0	25.00	19.20	32.5	32.5	12.19	0.0450
2.0	22.00	16.20	27.4	27.4	12.68	0.0324
5.0	18.00	12.20	20.6	20.6	13.34	0.0210
15.0	16.50	10.70	18.1	18.1	13.58	0.0123
30.0	14.00	8.20	13.9	13.9	13.99	0.0088
60.0	12.25	6.45	10.9	10.9	14.28	0.0063
120.0	11.00	5.20	8.8	8.8	14.49	0.0045
250.0	9.50	3.70	6.3	6.3	14.73	0.0031
1442.0	8.50	2.70	4.6	4.6	14.90	0.0013

Grain Diameter =  $K \cdot (\text{SQRT}(L/T))$

Data entered by: RS  
Data checked by: SR  
FileName: QUH01146

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.



MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT STL-CT

JOB NO. 2193-137

BORING NO. 206920-Shaw-007  
DEPTH 6.3-8.3  
SAMPLE NO. 12b-021747  
SOIL DESCR. Proj #206920  
LOCATION Maywood Fusrap

SAMPLED 6/21/04  
DATE TESTED 7/14/04 RS  
WASH SIEVE Yes  
DRY SIEVE No

MOISTURE DATA

WASH SIEVE ANALYSIS

HYGROSCOPIC Yes  
NATURAL No  
Wt. Wet Soil & Pan (g) 82.63  
Wt. Dry Soil & Pan (g) 82.15  
Wt. Lost Moisture (g) 0.48  
Wt. of Pan Only (g) 3.66  
Wt. of Dry Soil (g) 78.49  
Moisture Content % 0.6  
Wt. Hydrom. Sample Wet (g) 55.67  
Wt. Hydrom. Sample Dry (g) 55.33

Wt. Total Sample Wet (g) 234.34  
Weight of + #10 Before Washing (g) 2.10  
Weight of + #10 After Washing (g) 1.63  
Weight of - #10 Wet (g) 232.24  
Weight of - #10 Dry (g) 231.30  
Wt. Total Sample Dry (g) 232.93  
Calc. Wt. "W" (g) 55.72  
Calc. Mass + #10 0.39

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0.00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	0.00	0.00	0.00	0.0	100.0
#4	0.00	0.00	0.00	0.00	0.0	100.0
#10	0.00	1.63	1.63	1.63	0.7	99.3
#20	2.35	3.84	1.49	1.49	3.4	96.6
#40	2.30	8.32	6.02	7.51	14.2	85.8
#60	2.29	13.16	10.87	18.38	33.7	66.3
#100	2.28	12.82	10.54	28.92	52.6	47.4
#200	2.36	10.86	8.50	37.42	67.9	32.1

Data entered by: RS  
Data checked by: SR  
FileName: QUH00747

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206920-Shaw-007	SAMPLED	6/21/04
DEPTH	6.3-8.3	DATE TESTED	7/14/04 RS
SAMPLE NO.	12b-021747	WASH SIEVE	Yes
SOIL DESCR.	Proj #206920	DRY SIEVE	No
LOCATION	Maywood Fusrap		
Hydrometer #	ASTM 152 H	Temp., Deg. C	25.0
Sp. Gr. of Soil	2.65	Temp. Coef. K	0.01286
Value of "alpha"	1.00	Wt. Dry Sample "W"	55.723
Deflocculant	Sodium Hexametaphosphate	% of Total Sample	100.0
Defloc. Corr'n	4.8		
Meniscus Corr'n	-1.0		

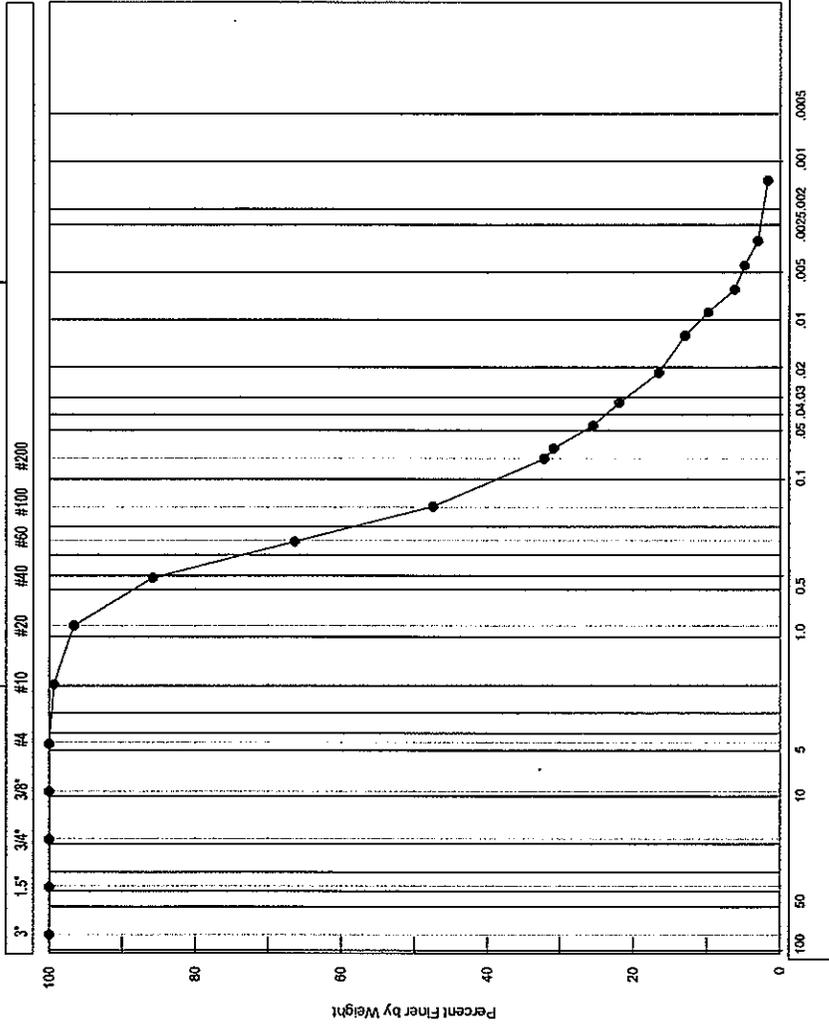
T	Hydrometer Reading		100Ra/W	% Total Sample	Effective Depth L	Grain Diameter (mm)
Elapsed Time (min)	Original	Corrected "R"				
0.0	--	--	--	--	--	--
0.5	23.00	17.20	30.9	30.9	12.52	0.0643
1.0	20.00	14.20	25.5	25.5	13.01	0.0464
2.0	18.00	12.20	21.9	21.9	13.34	0.0332
5.0	15.00	9.20	16.5	16.5	13.83	0.0214
15.0	13.00	7.20	12.9	12.9	14.16	0.0125
30.0	11.25	5.45	9.8	9.8	14.45	0.0089
60.0	9.25	3.45	6.2	6.2	14.77	0.0064
120.0	8.50	2.70	4.8	4.8	14.90	0.0045
250.0	7.50	1.70	3.1	3.1	15.06	0.0032
1440.0	6.75	0.95	1.7	1.7	15.18	0.0013

Grain Diameter =  $K \cdot (\text{SQRT}(L/T))$

Data entered by: RS Date: 07/16/2004  
 Data checked by: SR Date: 7-16-04  
 FileName: QUH00747

ADVANCED TERRA TESTING, INC.

### US Standard Sieve Size



COBBLES	GRAVEL	SAND			SILT OR CLAY			USCS
	COARSE	FINE	CRS	MEDIUM	FINE			
COBBLES TO BOULDERS	PEBBLE GRAVEL		SAND			SILT	CLAY	WENTWORTH
	COARSE	MED	FINE	GRAN	COARSE	MED	FINE	

Client: STL-CT      Boring No.: 206920-Shaw-007      Sample No.: 12b-021747  
 Job Number: 2193-137      Depth: 6.3-8.3  
 Classification: **Not Performed**      Advanced Terra Testing, Inc.

MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT STL-CT

JOB NO. 2193-137

BORING NO. 206950-Shaw-014  
DEPTH 9.4  
SAMPLE NO. 12b-021748  
SOIL DESCR. Proj #206950  
LOCATION Maywood Fusrap

SAMPLED 6/23/04  
DATE TESTED 7/14/04 RS  
WASH SIEVE Yes  
DRY SIEVE No

MOISTURE DATA

WASH SIEVE ANALYSIS

HYGROSCOPIC Yes  
NATURAL No  
  
Wt. Wet Soil & Pan (g) 32.14  
Wt. Dry Soil & Pan (g) 31.91  
Wt. Lost Moisture (g) 0.23  
Wt. of Pan Only (g) 3.71  
Wt. of Dry Soil (g) 28.20  
Moisture Content % 0.8

Wt. Total Sample Wet (g) 190.80  
Weight of + #10 Before Washing (g) 4.42  
Weight of + #10 After Washing (g) 3.22  
Weight of - #10 Wet (g) 186.38  
Weight of - #10 Dry (g) 186.06  
Wt. Total Sample Dry (g) 189.28  
  
Calc. Wt. "W" (g) 60.20  
Calc. Mass + #10 1.02

Wt. Hydrom. Sample Wet (g) 59.65  
Wt. Hydrom. Sample Dry (g) 59.17

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0.00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	1.43	1.43	1.43	0.8	99.2
#4	0.00	0.46	0.46	1.89	1.0	99.0
#10	0.00	1.33	1.33	3.22	1.7	98.3
#20	2.38	3.97	1.59	1.59	4.3	95.7
#40	2.32	5.25	2.93	4.52	9.2	90.8
#60	2.35	7.69	5.34	9.86	18.1	81.9
#100	2.36	13.22	10.86	20.72	36.1	63.9
#200	2.31	13.89	11.58	32.30	55.4	44.6

Data entered by: RS  
Data checked by: SR  
FileName: QUH01448

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206950-Shaw-014	SAMPLED	6/23/04
DEPTH	9.4	DATE TESTED	7/14/04 RS
SAMPLE NO.	12b-021748	WASH SIEVE	Yes
SOIL DESCR.	Proj #206950	DRY SIEVE	No
LOCATION	Maywood Fusrap		
Hydrometer #	ASTM 152 H	Temp., Deg. C	24.9
Sp. Gr. of Soil	2.65	Temp. Coef. K	0.01288
Value of "alpha"	1.00	Wt. Dry Sample "W"	60.195
Deflocculant	Sodium Hexametaphosphate	% of Total Sample	100.0
Defloc. Corr'n	4.8		
Meniscus Corr'n	-1.0		

T	Hydrometer Reading		100Ra/W	% Total Sample	Effective Depth L	Grain Diameter (mm)
Elapsed Time (min)	Original	Corrected "R"				
0.0	--	--	--	--	--	--
0.5	27.00	21.20	35.2	35.2	11.86	0.0627
1.0	24.00	18.20	30.2	30.2	12.35	0.0453
2.0	21.50	15.70	26.1	26.1	12.76	0.0325
5.0	17.50	11.70	19.4	19.4	13.42	0.0211
15.0	14.50	8.70	14.5	14.5	13.91	0.0124
30.0	12.75	6.95	11.5	11.5	14.20	0.0089
60.0	11.25	5.45	9.1	9.1	14.45	0.0063
120.0	10.00	4.20	7.0	7.0	14.65	0.0045
250.0	9.00	3.20	5.3	5.3	14.81	0.0031
1458.0	7.25	1.45	2.4	2.4	15.10	0.0013

Grain Diameter =  $K \cdot (\text{SQRT}(L/T))$

Data entered by: RS                      Date: 07/16/2004  
 Data checked by: SR                      Date: 7-16-04  
 FileName: QUH01448

ADVANCED TERRA TESTING, INC.



MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206950-Shaw-011	SAMPLED	6/23/04
DEPTH	10.4-11.4	DATE TESTED	7/14/04 RS
SAMPLE NO.	12b-021749	WASH SIEVE	Yes
SOIL DESCR.	Proj #206950	DRY SIEVE	No
LOCATION	Maywood Fusrap		

MOISTURE DATA

HYGROSCOPIC	Yes
NATURAL	No
Wt. Wet Soil & Pan (g)	31.33
Wt. Dry Soil & Pan (g)	31.00
Wt. Lost Moisture (g)	0.33
Wt. of Pan Only (g)	3.70
Wt. of Dry Soil (g)	27.30
Moisture Content %	1.2
Wt. Hydrom. Sample Wet (g)	57.33
Wt. Hydrom. Sample Dry (g)	56.65

WASH SIEVE ANALYSIS

Wt. Total Sample Wet (g)	209.10
Weight of + #10 Before Washing (g)	2.95
Weight of + #10 After Washing (g)	2.54
Weight of - #10 Wet (g)	206.15
Weight of - #10 Dry (g)	204.09
Wt. Total Sample Dry (g)	206.63
Calc. Wt. "W" (g)	57.35
Calc. Mass + #10	0.71

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0.00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	1.19	1.19	1.19	0.6	99.4
#4	0.00	0.42	0.42	1.61	0.8	99.2
#10	0.00	0.93	0.93	2.54	1.2	98.8
#20	2.31	3.30	0.99	0.99	3.0	97.0
#40	2.38	5.13	2.75	3.74	7.8	92.2
#60	2.38	7.38	5.00	8.74	16.5	83.5
#100	2.33	12.04	9.71	18.45	33.4	66.6
#200	2.36	14.72	12.36	30.81	54.9	45.1

Data entered by: RS  
 Data checked by: SR  
 FileName: QUH01149

Date: 07/16/2004  
 Date: 7-16-04

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206950-Shaw-011	SAMPLED	6/23/04
DEPTH	10.4-11.4	DATE TESTED	7/14/04 RS
SAMPLE NO.	12b-021749	WASH SIEVE	Yes
SOIL DESCR.	Proj #206950	DRY SIEVE	No
LOCATION	Maywood Fusrap		
Hydrometer #	ASTM 152 H	Temp., Deg. C	24.9
Sp. Gr. of Soil	2.65	Temp. Coef. K	0.01288
Value of "alpha"	1.00	Wt. Dry Sample "W"	57.353
Deflocculant	Sodium Hexametaphosphate	% of Total Sample	100.0
Defloc. Corr'n	4.8		
Meniscus Corr'n	-1.0		

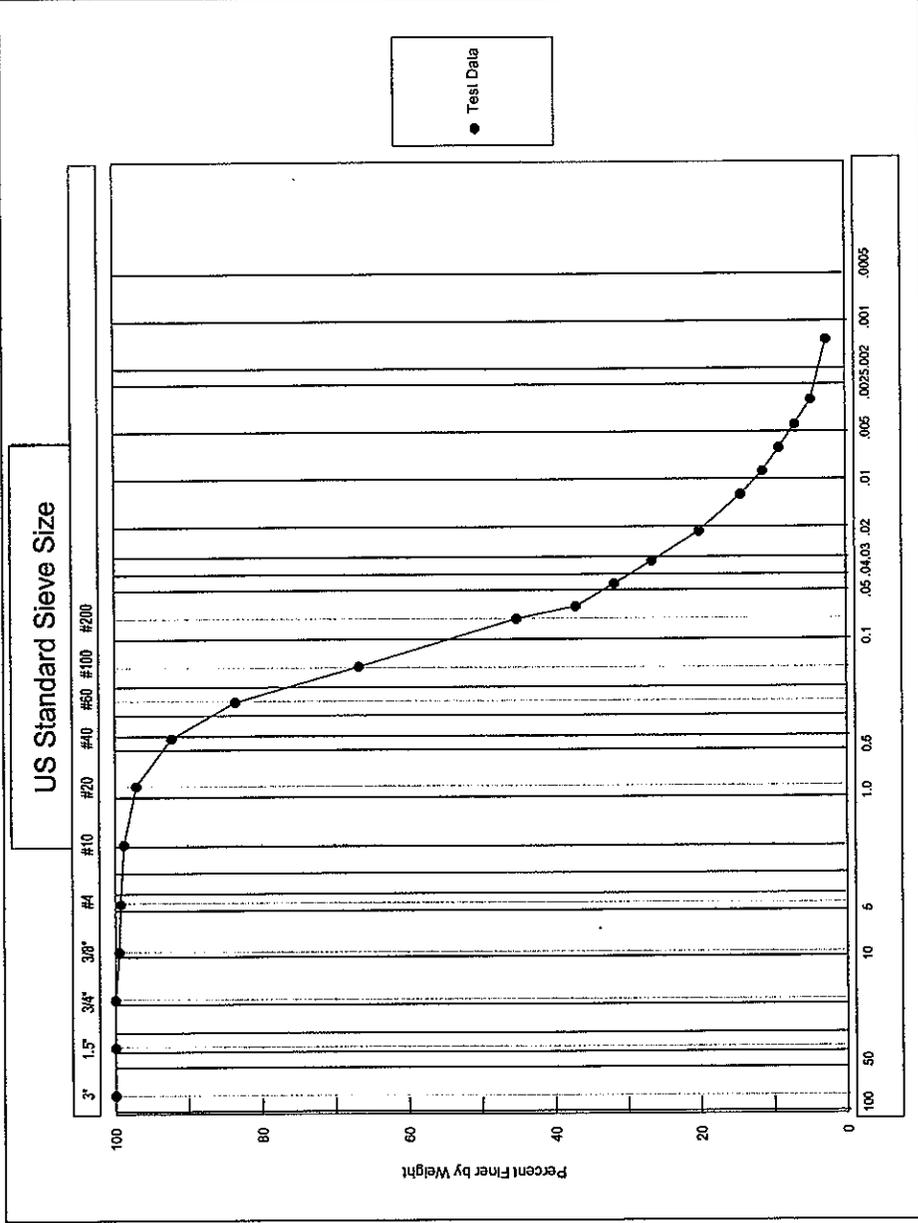
T	Hydrometer Reading		100Ra/W	% Total Sample	Effective Depth L	Grain Diameter (mm)
Elapsed Time (min)	Original	Corrected "R"				
0.0	--	--	--	--	--	--
0.5	27.00	21.20	37.0	37.0	11.86	0.0627
1.0	24.00	18.20	31.7	31.7	12.35	0.0453
2.0	21.00	15.20	26.5	26.5	12.85	0.0326
5.0	17.25	11.45	20.0	20.0	13.46	0.0211
15.0	14.00	8.20	14.3	14.3	13.99	0.0124
30.0	12.25	6.45	11.2	11.2	14.28	0.0089
60.0	11.00	5.20	9.1	9.1	14.49	0.0063
120.0	9.75	3.95	6.9	6.9	14.69	0.0045
250.0	8.50	2.70	4.7	4.7	14.90	0.0031
1452.0	7.25	1.45	2.5	2.5	15.10	0.0013

Grain Diameter = K\*(SQRT(L/T))

Data entered by: RS  
Data checked by: SR  
FileName: QUH01149

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.



COBBLES		GRAVEL		SAND			SILT OR CLAY			USCS
		COARSE	FINE	CRS	MEDIUM	FINE				
COBBLES TO BOULDERS		PEBBLE GRAVEL		SAND			SILT		CLAY	WENTWORTH
		COARSE	MED	FINE	GRAN	COARSE	MED	FINE		

Client: STL-CT      Boring No.: 206950-Shaw-011      Sample No.: 12b-021749  
 Job Number: 2193-137      Depth: 10.4-11.4  
 Classification: **Classification Not Performed**      Advanced Terra Testing, Inc.

MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206978-Shaw-014	SAMPLED	6/25/04
DEPTH	5.9-7.9	DATE TESTED	7/14/04 RS
SAMPLE NO.	12b-021750	WASH SIEVE	Yes
SOIL DESCR.	Proj #206978	DRY SIEVE	No
LOCATION	Maywood Fusrap		

MOISTURE DATA

HYGROSCOPIC	Yes
NATURAL	No
Wt. Wet Soil & Pan (g)	33.36
Wt. Dry Soil & Pan (g)	32.94
Wt. Lost Moisture (g)	0.42
Wt. of Pan Only (g)	3.65
Wt. of Dry Soil (g)	29.29
Moisture Content %	1.4
Wt. Hydrom. Sample Wet (g)	54.66
Wt. Hydrom. Sample Dry (g)	53.88

WASH SIEVE ANALYSIS

Wt. Total Sample	
Wet (g)	162.62
Weight of + #10	
Before Washing (g)	0.86
Weight of + #10	
After Washing (g)	0.75
Weight of - #10	
Wet (g)	161.76
Weight of - #10	
Dry (g)	159.58
Wt. Total Sample	
Dry (g)	160.33
Calc. Wt. "W" (g)	54.14
Calc. Mass + #10	0.25

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0.00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	0.00	0.00	0.00	0.0	100.0
#4	0.00	0.22	0.22	0.22	0.1	99.9
#10	0.00	0.53	0.53	0.75	0.5	99.5
#20	2.36	3.14	0.78	0.78	1.9	98.1
#40	2.39	4.00	1.61	2.39	4.9	95.1
#60	2.36	4.66	2.30	4.69	9.1	90.9
#100	2.30	5.73	3.43	8.12	15.5	84.5
#200	2.33	6.31	3.98	12.10	22.8	77.2

Data entered by: RS Date: 07/16/2004  
 Data checked by: SR Date: 7-16-04  
 FileName: QUH01450

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206978-Shaw-014	SAMPLED	6/25/04
DEPTH	5.9-7.9	DATE TESTED	7/14/04 RS
SAMPLE NO.	12b-021750	WASH SIEVE	Yes
SOIL DESCR.	Proj #206978	DRY SIEVE	No
LOCATION	Maywood Fusrap		
Hydrometer #	ASTM 152 H	Temp., Deg. C	24.9
Sp. Gr. of Soil	2.65	Temp. Coef. K	0.01288
Value of "alpha"	1.00	Wt. Dry Sample "W"	54.138
Deflocculant	Sodium Hexametaphosphate	% of Total Sample	100.0
Defloc. Corr'n	4.8		
Meniscus Corr'n	-1.0		

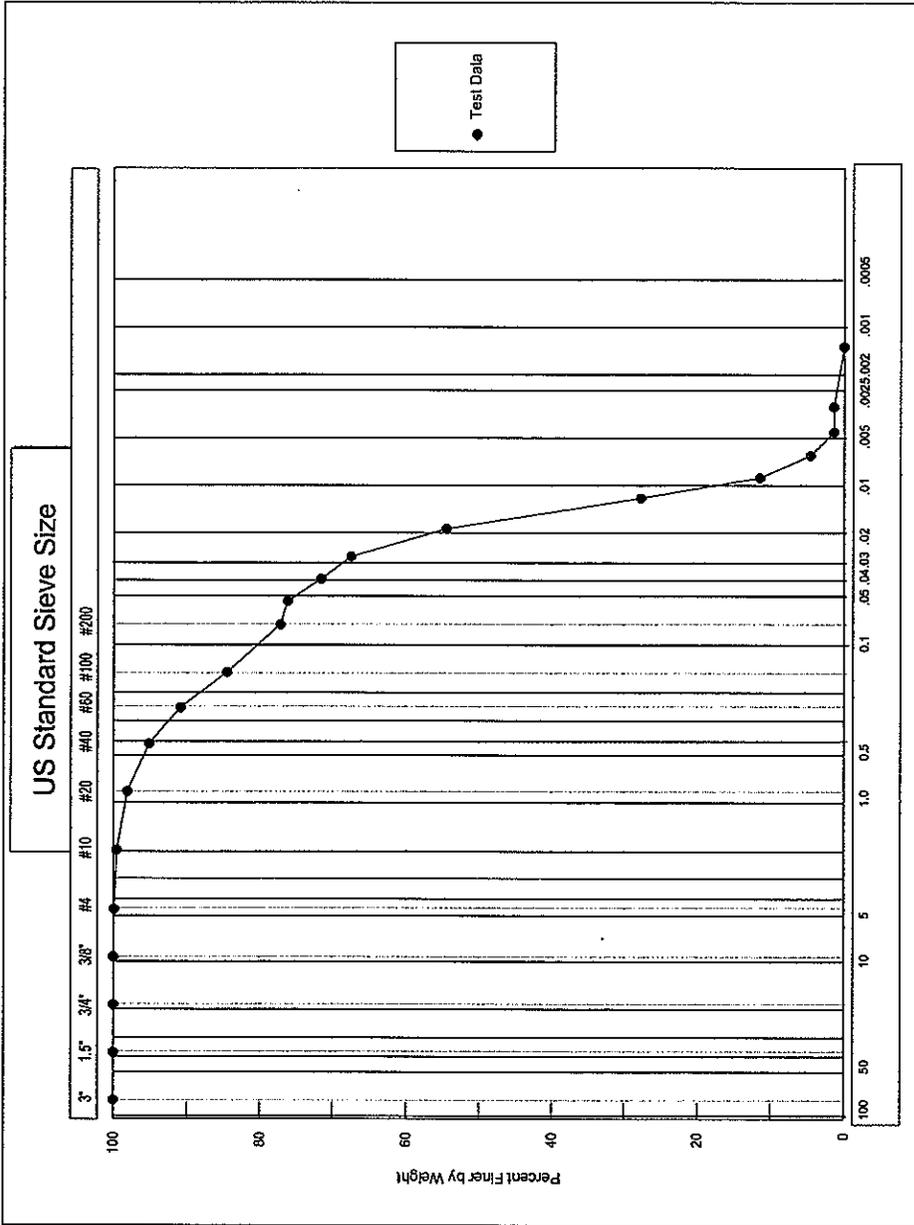
T	Hydrometer Reading		100Ra/W	% Total Sample	Effective Depth L	Grain Diameter (mm)
Elapsed Time (min)	Original	Corrected "R"				
0.0	--	--	--	--	--	--
0.5	47.00	41.25	76.2	76.2	8.58	0.0533
1.0	44.50	38.75	71.6	71.6	8.99	0.0386
2.0	42.25	36.50	67.4	67.4	9.36	0.0279
5.0	35.25	29.50	54.5	54.5	10.51	0.0187
15.0	20.75	15.00	27.7	27.7	12.89	0.0119
30.0	12.00	6.25	11.5	11.5	14.32	0.0089
60.0	8.25	2.50	4.6	4.6	14.94	0.0064
120.0	6.50	0.75	1.4	1.4	15.22	0.0046
250.0	6.50	0.75	1.4	1.4	15.22	0.0032
1440.0	5.75	0.00	0.0	0.0	15.35	0.0013

Grain Diameter =  $K \cdot (\text{SQRT}(L/T))$

Data entered by: RS  
Data checked by: SR  
FileName: QUH01450

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.



COBBLES	GRAVEL	SAND			SILT OR CLAY			USCS
	COARSE	FINE	CRS	MEDIUM	FINE			
COBBLES TO BOULDERS	PEBBLE GRAVEL			SAND			SILT	CLAY
	COARSE	MED	FINE	GRAN	COARSE	MIED	FINE	WENTWORTH

Client: STL-CT      Boring No.: 206978-Shaw-014      Sample No.: 12b-021750  
 Job Number: 2193-137      Depth: 5.9-7.9  
 Classification: **Classification Not Performed**      Advanced Terra Testing, Inc.

MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206920-Shaw-006	SAMPLED	6/21/04
DEPTH	9.0-11.0	DATE TESTED	7/14/04 RS
SAMPLE NO.	12b-021799	WASH SIEVE	Yes
SOIL DESCR.	Proj #206920	DRY SIEVE	No
LOCATION	Maywood Fusrap		

MOISTURE DATA

HYGROSCOPIC	Yes
NATURAL	No
Wt. Wet Soil & Pan (g)	21.23
Wt. Dry Soil & Pan (g)	20.37
Wt. Lost Moisture (g)	0.86
Wt. of Pan Only (g)	3.74
Wt. of Dry Soil (g)	16.63
Moisture Content %	5.2
Wt. Hydrom. Sample Wet (g)	62.55
Wt. Hydrom. Sample Dry (g)	59.47

WASH SIEVE ANALYSIS

Wt. Total Sample Wet (g)	81.09
Weight of + #10 Before Washing (g)	0.82
Weight of + #10 After Washing (g)	0.64
Weight of - #10 Wet (g)	80.27
Weight of - #10 Dry (g)	76.49
Wt. Total Sample Dry (g)	77.13
Calc. Wt. "W" (g)	59.97
Calc. Mass + #10	0.50

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0.00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	0.00	0.00	0.00	0.0	100.0
#4	0.00	0.13	0.13	0.13	0.2	99.8
#10	0.00	0.51	0.51	0.64	0.8	99.2
#20	2.30	3.92	1.62	1.62	3.5	96.5
#40	2.36	6.56	4.20	5.82	10.5	89.5
#60	2.34	8.88	6.54	12.36	21.4	78.6
#100	2.31	8.91	6.60	18.96	32.4	67.6
#200	2.37	7.48	5.11	24.07	41.0	59.0

Data entered by: RS Date: 07/16/2004  
 Data checked by: SR Date: 7-16-04  
 FileName: QUH00699

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206920-Shaw-006	SAMPLED	6/21/04
DEPTH	9.0-11.0	DATE TESTED	7/14/04 RS
SAMPLE NO.	12b-021799	WASH SIEVE	Yes
SOIL DESCR.	Proj #206920	DRY SIEVE	No
LOCATION	Maywood Fusrap		
Hydrometer #	ASTM 152 H	Temp., Deg. C	25.0
Sp. Gr. of Soil	2.65	Temp. Coef. K	0.01286
Value of "alpha"	1.00	Wt. Dry Sample "W"	59.972
Deflocculant	Sodium Hexametaphosphate	% of Total Sample	100.0
Defloc. Corr'n	4.8		
Meniscus Corr'n	-1.0		

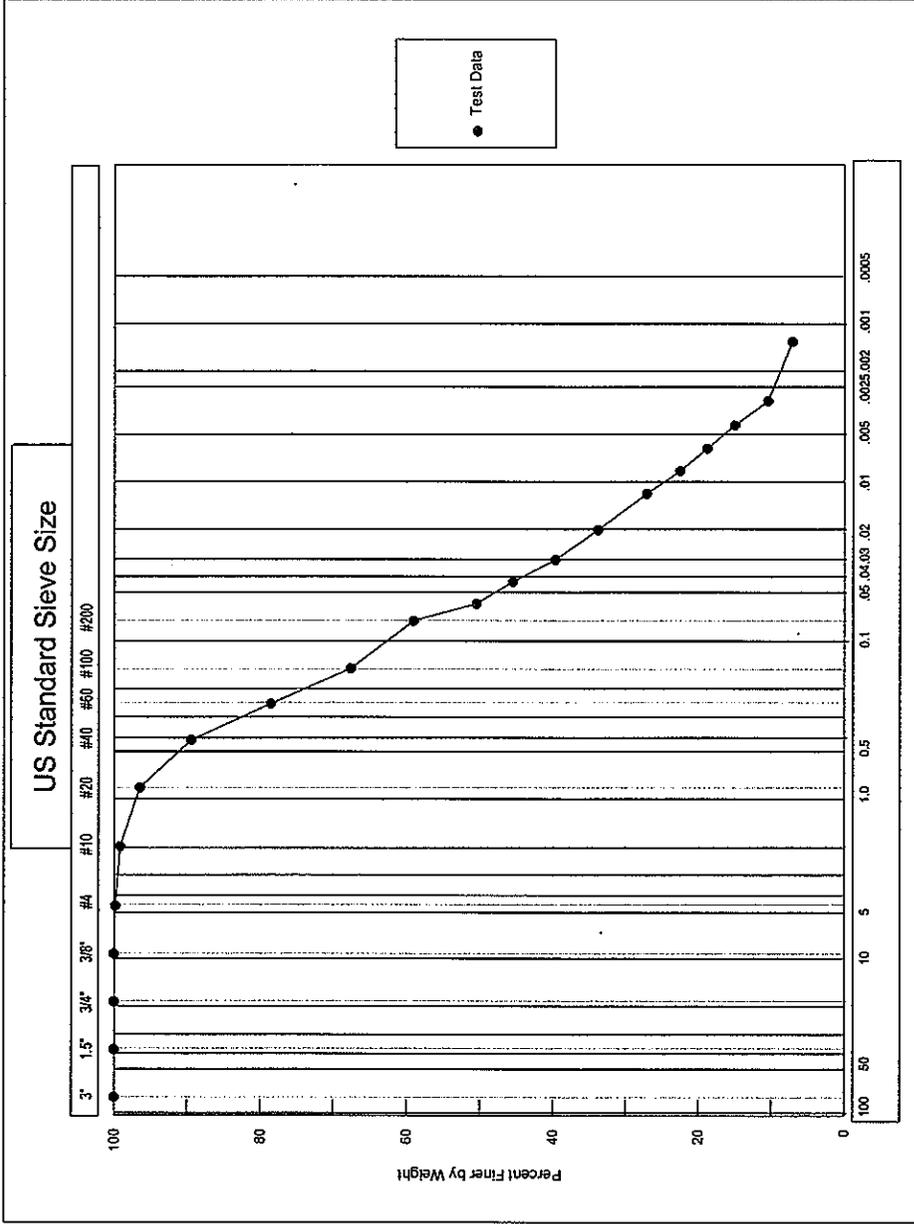
T	Hydrometer Reading		100Ra/W	% Total Sample	Effective Depth L	Grain Diameter (mm)
Elapsed Time (min)	Original	Corrected "R"				
0.0	--	--	--	--	--	--
0.5	36.00	30.25	50.4	50.4	10.39	0.0586
1.0	33.00	27.25	45.4	45.4	10.88	0.0424
2.0	29.50	23.75	39.6	39.6	11.45	0.0308
5.0	26.00	20.25	33.8	33.8	12.03	0.0199
15.0	22.00	16.25	27.1	27.1	12.68	0.0118
30.0	19.25	13.50	22.5	22.5	13.13	0.0085
60.0	17.00	11.25	18.8	18.8	13.50	0.0061
120.0	14.75	9.00	15.0	15.0	13.87	0.0044
250.0	12.00	6.25	10.4	10.4	14.32	0.0031
1440.0	10.00	4.25	7.1	7.1	14.65	0.0013

Grain Diameter = K\*(SQRT(L/T))

Data entered by: RS  
Data checked by: SR  
FileName: QUH00699

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.



USCS		SILT OR CLAY					
		GRAVEL		SAND		SILT	
WENTWORTH		COARSE		MEDIUM		FINE	
		PEBBLE GRAVEL		SAND		CLAY	
WENTWORTH		COARSE		COARSE		FINE	
		MED		MED		FINE	

Client: STL-CT      Boring No.: 206920-Shaw-006      Sample No.: 12b-021799  
 Job Number: 2193-137      Depth: 9.0-11.0  
 Classification: **Classification Not Performed**      Advanced Terra Testing, Inc.

MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206928-Shaw-007	SAMPLED	6/25/04
DEPTH	11.2-12.4	DATE TESTED	7/13/04 DMP/AG
SAMPLE NO.	12b-021814	WASH SIEVE	Yes
SOIL DESCR.	Proj #206950	DRY SIEVE	No
LOCATION	Maywood Fusrap		

MOISTURE DATA

HYGROSCOPIC	Yes
NATURAL	No
Wt. Wet Soil & Pan (g)	61.33
Wt. Dry Soil & Pan (g)	60.99
Wt. Lost Moisture (g)	0.34
Wt. of Pan Only (g)	3.67
Wt. of Dry Soil (g)	57.32
Moisture Content %	0.6
Wt. Hydrom. Sample Wet (g)	59.06
Wt. Hydrom. Sample Dry (g)	58.71

WASH SIEVE ANALYSIS

Wt. Total Sample	
Wet (g)	244.94
Weight of + #10	
Before Washing (g)	7.76
Weight of + #10	
After Washing (g)	4.14
Weight of - #10	
Wet (g)	237.18
Weight of - #10	
Dry (g)	239.38
Wt. Total Sample	
Dry (g)	243.52
Calc. Wt. "W" (g)	59.73
Calc. Mass + #10	1.02

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0.00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	0.00	0.00	0.00	0.0	100.0
#4	0.00	0.86	0.86	0.86	0.4	99.6
#10	0.00	3.28	3.28	4.14	1.7	98.3
#20	2.34	5.12	2.78	2.78	6.4	93.6
#40	2.38	9.35	6.97	9.75	18.0	82.0
#60	2.38	11.61	9.23	18.98	33.5	66.5
#100	2.34	11.41	9.07	28.05	48.7	51.3
#200	2.36	10.94	8.58	36.63	63.0	37.0

Data entered by: RS                      Date: 07/16/2004  
 Data checked by: SR                      Date: 7-16-04  
 FileName: QUH08714

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206928-Shaw-007	SAMPLED	6/25/04
DEPTH	11.2-12.4	DATE TESTED	7/13/04 DMP/AG
SAMPLE NO.	12b-021814	WASH SIEVE	Yes
SOIL DESCR.	Proj #206950	DRY SIEVE	No
LOCATION	Maywood Fusrap		

Hydrometer #	ASTM 152 H	Temp., Deg. C	26.0
Sp. Gr. of Soil	2.65	Temp. Coef. K	0.01272
Value of "alpha"	1.00	Wt. Dry Sample "W"	59.726
Deflocculant	Sodium Hexametaphosphate	% of Total Sample	100.0
Defloc. Corr'n	4.8		
Meniscus Corr'n	-1.0		

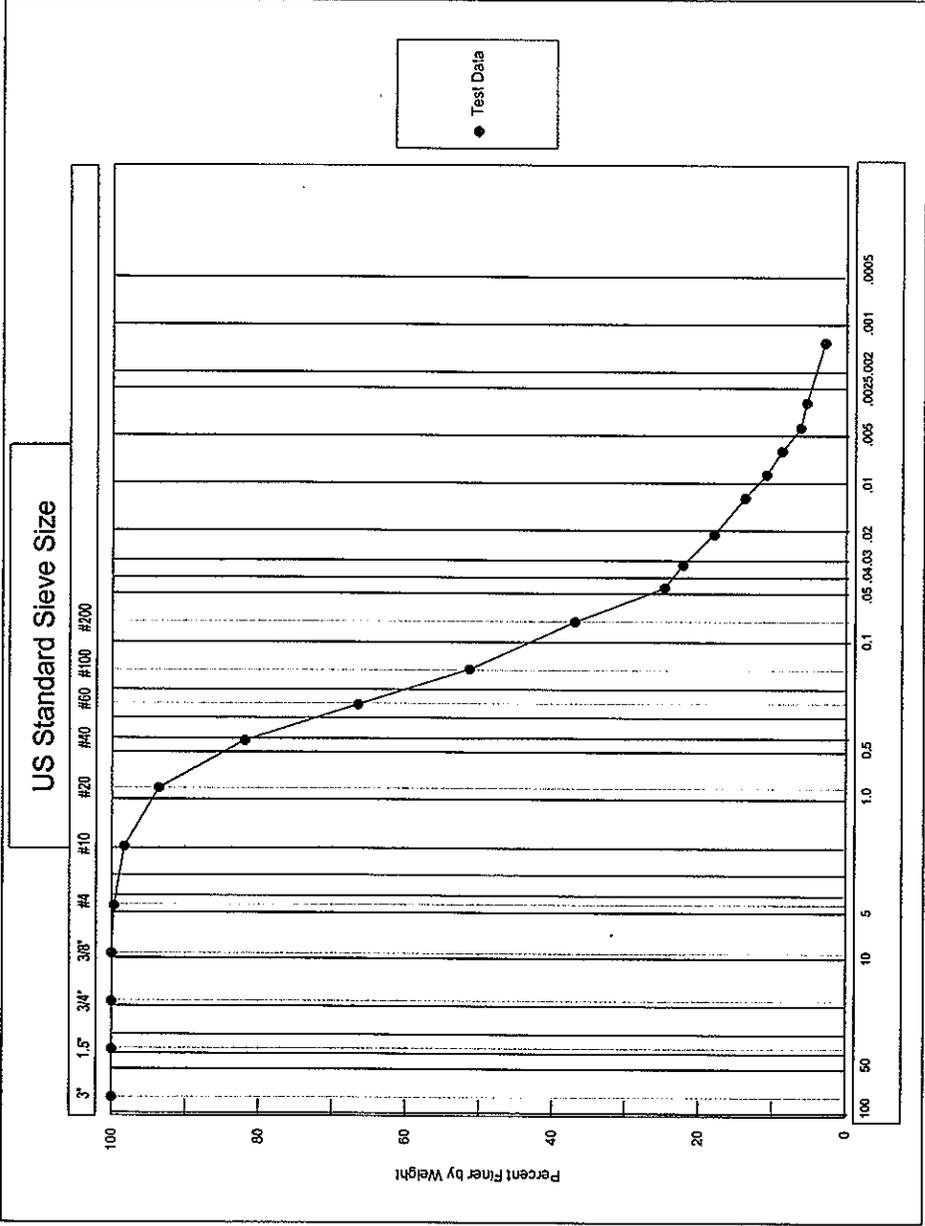
T						
Elapsed Time (min)	Hydrometer Reading Original	Hydrometer Reading Corrected "R"	100Ra/W	% Total Sample	Effective Depth L	Grain Diameter (mm)
0.0	--	--	--	--	--	--
1.0	20.50	14.75	24.7	24.7	12.93	0.0457
2.0	19.00	13.25	22.2	22.2	13.17	0.0326
5.0	16.50	10.75	18.0	18.0	13.58	0.0210
15.0	14.00	8.25	13.8	13.8	13.99	0.0123
30.0	12.25	6.50	10.9	10.9	14.28	0.0088
60.0	11.00	5.25	8.8	8.8	14.49	0.0063
120.0	9.50	3.75	6.3	6.3	14.73	0.0045
250.0	9.00	3.25	5.4	5.4	14.81	0.0031
1440.0	7.50	1.75	2.9	2.9	15.06	0.0013

Grain Diameter = K\*(SQRT(L/T))

Data entered by: RS  
Data checked by: SR  
FileName: QUH08714

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.



USCS		WEIGHTWORTH	
COBBLES	GRAVEL	SAND	SILT OR CLAY
	COARSE	FINE	CRS
			MEDIUM
			FINE
COBBLES	PEBBLE GRAVEL	SAND	CLAY
TO BOULDERS	COARSE	MED	SILT
		COARSE	
		MED	
		FINE	

Client: STL-CT      Boring No.: 206928-Shaw-007      Sample No.: 12b-021814  
 Job Number: 2193-137      Depth: 11.2-12.4  
 Classification: **Not Performed**      Advanced Terra Testing, Inc.

MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT STL-CT

JOB NO. 2193-137

BORING NO. 206950-Shaw-007  
DEPTH 12.4-13.4  
SAMPLE NO. 12b-021751  
SOIL DESCR. Proj #206950  
LOCATION Maywood Fusrap

SAMPLED 6/23/04  
DATE TESTED 7/14/04 RS  
WASH SIEVE Yes  
DRY SIEVE No

MOISTURE DATA

WASH SIEVE ANALYSIS

HYGROSCOPIC Yes  
NATURAL No  
Wt. Wet Soil & Pan (g) 34.88  
Wt. Dry Soil & Pan (g) 34.71  
Wt. Lost Moisture (g) 0.17  
Wt. of Pan Only (g) 3.73  
Wt. of Dry Soil (g) 30.98  
Moisture Content % 0.5

Wt. Total Sample Wet (g) 249.59  
Weight of + #10 Before Washing (g) 4.02  
Weight of + #10 After Washing (g) 3.18  
Weight of - #10 Wet (g) 245.57  
Weight of - #10 Dry (g) 245.07  
Wt. Total Sample Dry (g) 248.25  
Calc. Wt. "W" (g) 59.84  
Calc. Mass + #10 0.77

Wt. Hydrom. Sample Wet (g) 59.40  
Wt. Hydrom. Sample Dry (g) 59.08

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0.00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	0.00	0.00	0.00	0.0	100.0
#4	0.00	1.54	1.54	1.54	0.6	99.4
#10	0.00	1.64	1.64	3.18	1.3	98.7
#20	3.70	4.68	0.98	0.98	2.9	97.1
#40	3.61	7.27	3.66	4.64	9.0	91.0
#60	3.63	12.91	9.28	13.92	24.5	75.5
#100	3.55	15.90	12.35	26.27	45.2	54.8
#200	3.67	14.03	10.36	36.63	62.5	37.5

Data entered by: RS  
Data checked by: SR  
FileName: QUH00751

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206950-Shaw-007	SAMPLED	6/23/04
DEPTH	12.4-13.4	DATE TESTED	7/14/04 RS
SAMPLE NO.	12b-021751	WASH SIEVE	Yes
SOIL DESCR.	Proj #206950	DRY SIEVE	No
LOCATION	Maywood Fusrap		
Hydrometer #	ASTM 152 H	Temp., Deg. C	25.0
Sp. Gr. of Soil	2.65	Temp. Coef. K	0.01286
Value of "alpha"	1.00	Wt. Dry Sample "W"	59.842
Deflocculant	Sodium Hexametaphosphate	% of Total Sample	100.0
Defloc. Corr'n	5.0		
Meniscus Corr'n	-1.0		

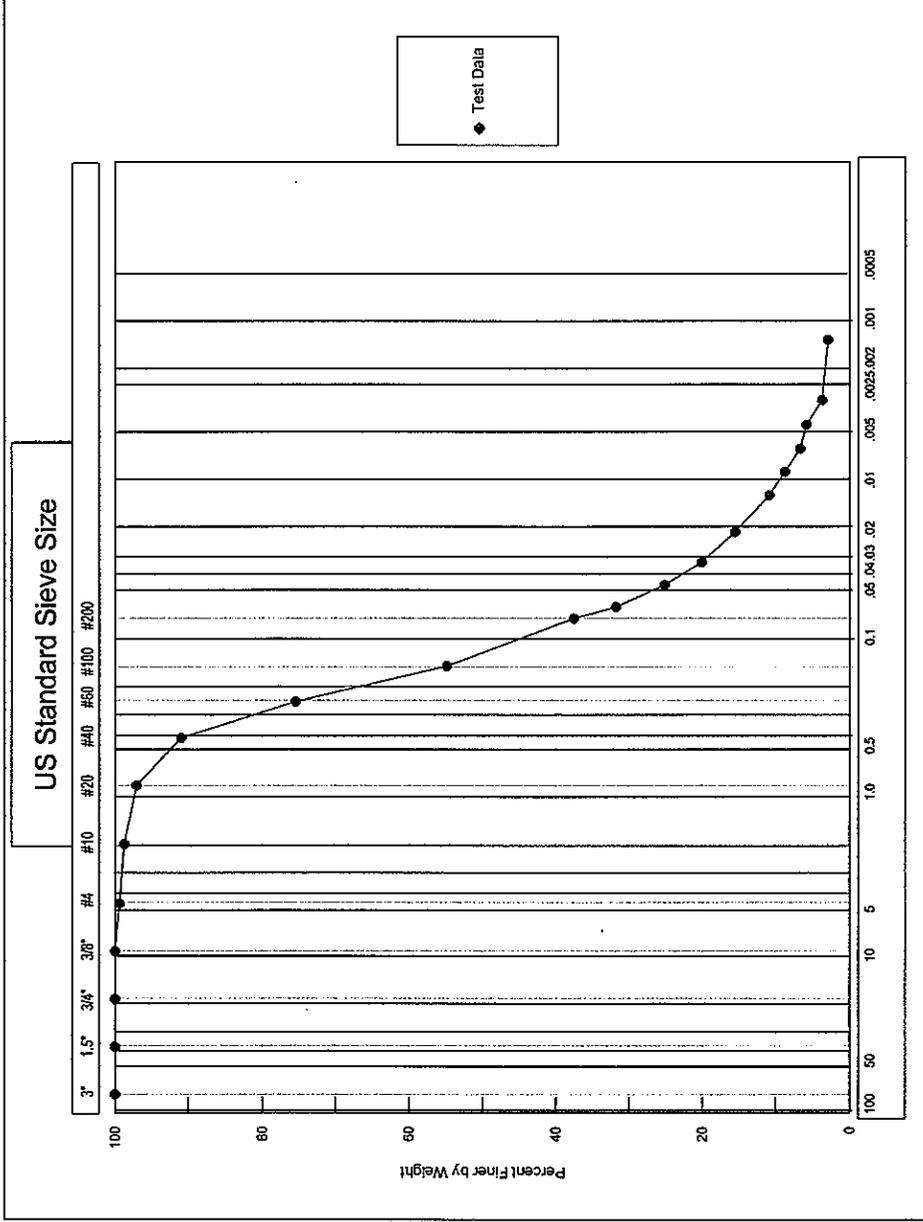
T	Hydrometer Reading		100Ra/W	% Total Sample	Effective Depth L	Grain Diameter (mm)
Elapsed Time (min)	Original	Corrected "R"				
0.0	--	--	--	--	--	--
0.5	25.00	19.00	31.8	31.8	12.19	0.0635
1.0	21.00	15.00	25.1	25.1	12.85	0.0461
2.0	18.00	12.00	20.1	20.1	13.34	0.0332
5.0	15.25	9.25	15.5	15.5	13.79	0.0214
15.0	12.50	6.50	10.9	10.9	14.24	0.0125
30.0	11.25	5.25	8.8	8.8	14.45	0.0089
60.0	10.00	4.00	6.7	6.7	14.65	0.0064
120.0	9.50	3.50	5.8	5.8	14.73	0.0045
250.0	8.25	2.25	3.8	3.8	14.94	0.0031
1440.0	7.75	1.75	2.9	2.9	15.02	0.0013

Grain Diameter =  $K \cdot (\text{SQRT}(L/T))$

Data entered by: RS  
Data checked by: SR  
FileName: QUH00751

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.



COBBLES		GRAVEL		SAND			SILT OR CLAY		USCS	
		COARSE	FINE	CRS	MEDIUM	FINE				
COBBLES TO BOULDERS		PEBBLE GRAVEL			SAND			SILT	CLAY	WENTWORTH
		COARSE	MED	FINE	GRAN	COARSE	MED	FINE		

Client: STL-CT      Boring No.: 206950-Shaw-007      Sample No.: 12b-021751  
 Job Number: 2193-137      Depth: 12.4-13.4  
 Classification: **Classification Not Performed**      Advanced Terra Testing, Inc.

MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT STL-CT

JOB NO. 2193-137

BORING NO. 206950-Shaw-001  
DEPTH 7.8-9.0  
SAMPLE NO. 12b-021753  
SOIL DESCR. Proj #206950  
LOCATION Maywood Fusrap

SAMPLED 6/23/04  
DATE TESTED 7/14/04 RS  
WASH SIEVE Yes  
DRY SIEVE No

MOISTURE DATA

WASH SIEVE ANALYSIS

HYGROSCOPIC Yes  
NATURAL No  
Wt. Wet Soil & Pan (g) 33.24  
Wt. Dry Soil & Pan (g) 32.32  
Wt. Lost Moisture (g) 0.92  
Wt. of Pan Only (g) 3.59  
Wt. of Dry Soil (g) 28.73  
Moisture Content % 3.2

Wt. Total Sample Wet (g) 92.13  
Weight of + #10 Before Washing (g) 0.22  
Weight of + #10 After Washing (g) 0.19  
Weight of - #10 Wet (g) 91.91  
Weight of - #10 Dry (g) 89.09  
Wt. Total Sample Dry (g) 89.28  
Calc. Wt. "W" (g) 60.06  
Calc. Mass + #10 0.13

Wt. Hydrom. Sample Wet (g) 61.85  
Wt. Hydrom. Sample Dry (g) 59.93

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0.00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	0.00	0.00	0.00	0.0	100.0
#4	0.00	0.00	0.00	0.00	0.0	100.0
#10	0.00	0.19	0.19	0.19	0.2	99.8
#20	2.37	2.97	0.60	0.60	1.2	98.8
#40	2.37	3.41	1.04	1.64	2.9	97.1
#60	2.36	3.97	1.61	3.25	5.6	94.4
#100	2.35	6.21	3.86	7.11	12.1	87.9
#200	2.32	8.72	6.40	13.51	22.7	77.3

Data entered by: RS  
Data checked by: SR  
FileName: QUH00153

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206950-Shaw-001	SAMPLED	6/23/04
DEPTH	7.8-9.0	DATE TESTED	7/14/04 RS
SAMPLE NO.	12b-021753	WASH SIEVE	Yes
SOIL DESCR.	Proj #206950	DRY SIEVE	No
LOCATION	Maywood Fusrap		

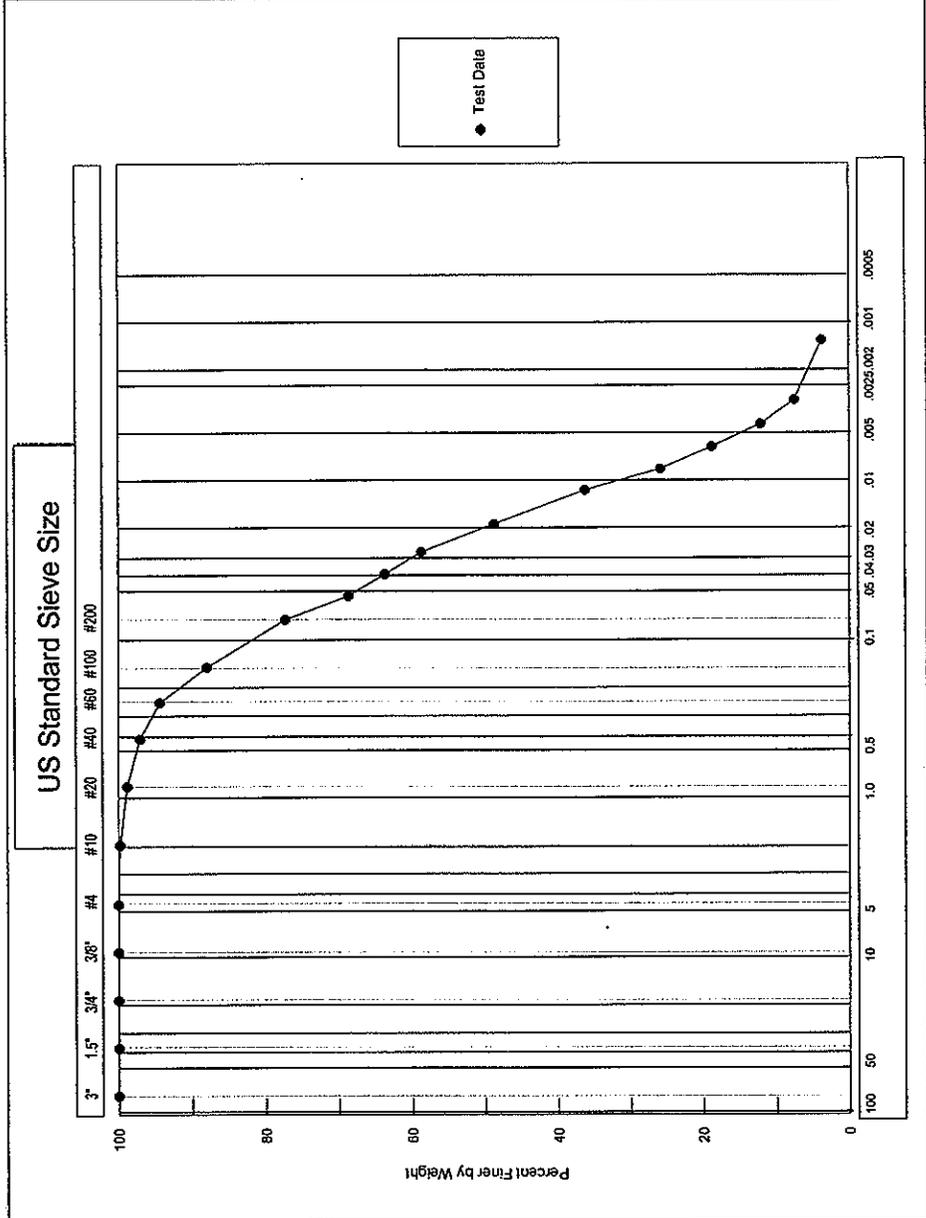
Hydrometer #	ASTM 152 H	Temp., Deg. C	25.0
Sp. Gr. of Soil	2.65	Temp. Coef. K	0.01286
Value of "alpha"	1.00	Wt. Dry Sample "W"	60.060
Deflocculant	Sodium Hexametaphosphate	% of Total Sample	100.0
Defloc. Corr'n	4.8		
Meniscus Corr'n	-1.0		

T Elapsed Time (min)	Hydrometer Reading		100Ra/W	% Total Sample	Effective Depth L	Grain Diameter (mm)
	Original	Corrected "R"				
0.0	--	--	--	--	--	--
0.5	47.00	41.25	68.7	68.7	8.58	0.0533
1.0	44.00	38.25	63.7	63.7	9.07	0.0387
2.0	41.00	35.25	58.7	58.7	9.57	0.0281
5.0	35.00	29.25	48.7	48.7	10.55	0.0187
15.0	27.50	21.75	36.2	36.2	11.78	0.0114
30.0	21.25	15.50	25.8	25.8	12.81	0.0084
60.0	17.00	11.25	18.7	18.7	13.50	0.0061
120.0	13.00	7.25	12.1	12.1	14.16	0.0044
250.0	10.25	4.50	7.5	7.5	14.61	0.0031
1464.0	8.00	2.25	3.7	3.7	14.98	0.0013

Grain Diameter = K\*(SQRT(L/T))

Data entered by: RS      Date: 07/16/2004  
 Data checked by: SR      Date: 7-16-04  
 FileName: QUH00153

ADVANCED TERRA TESTING, INC.



USCS		SILT OR CLAY							
		SAND							
WENTWORTH		GRAVEL		SAND		SILT		CLAY	
		COARSE	FINE	CRS	MEDIUM	FINE	COARSE	MED	FINE
WENTWORTH		PEBBLE GRAVEL		SAND		SILT		CLAY	
		COARSE	MED	FINE	GRAN	COARSE	MED	FINE	FINE

Client: STL-CT      Boring No.: 206950-Shaw-001      Sample No.: 12b-021753  
 Job Number: 2193-137      Depth: 7.8-9.0  
 Classification: **Not Performed**      Advanced Terra Testing, Inc.

MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT    STL-CT	JOB NO.    2193-137
BORING NO.    206920-Shaw-014	SAMPLED        6/22/04
DEPTH         10.0-11.3	DATE TESTED    7/14/04 RS
SAMPLE NO.    12b-021754	WASH SIEVE     Yes
SOIL DESCR.    Proj #206920	DRY SIEVE       No
LOCATION         Maywood Fusrap	

MOISTURE DATA

HYGROSCOPIC	Yes	
NATURAL	No	
Wt. Wet Soil & Pan (g)	32.43	
Wt. Dry Soil & Pan (g)	32.21	
Wt. Lost Moisture (g)	0.22	
Wt. of Pan Only (g)	3.71	
Wt. of Dry Soil (g)	28.50	
Moisture Content %	0.8	
Wt. Hydrom. Sample Wet (g)	55.93	
Wt. Hydrom. Sample Dry (g)	55.50	

WASH SIEVE ANALYSIS

Wt. Total Sample	
Wet (g)	125.82
Weight of + #10	
Before Washing (g)	2.21
After Washing (g)	2.21
Weight of - #10	
Wet (g)	123.61
Dry (g)	122.66
Wt. Total Sample	
Dry (g)	124.87
Calc. Wt. "W" (g)	56.50
Calc. Mass + #10	1.00

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0.00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	0.00	0.00	0.00	0.0	100.0
#4	0.00	0.20	0.20	0.20	0.2	99.8
#10	0.00	2.01	2.01	2.21	1.8	98.2
#20	2.29	4.93	2.64	2.64	6.4	93.6
#40	2.36	7.20	4.84	7.48	15.0	85.0
#60	2.36	9.29	6.93	14.41	27.3	72.7
#100	2.35	10.15	7.80	22.21	41.1	58.9
#200	2.37	10.74	8.37	30.58	55.9	44.1

Data entered by:    RS  
Data checked by: SR  
FileName:    QUH01454

Date:            07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206920-Shaw-014	SAMPLED	6/22/04
DEPTH	10.0-11.3	DATE TESTED	7/14/04 RS
SAMPLE NO.	12b-021754	WASH SIEVE	Yes
SOIL DESCR.	Proj #206920	DRY SIEVE	No
LOCATION	Maywood Fusrap		
Hydrometer #	ASTM 152 H	Temp., Deg. C	24.9
Sp. Gr. of Soil	2.65	Temp. Coef. K	0.01288
Value of "alpha"	1.00	Wt. Dry Sample "W"	56.505
Deflocculant	Sodium Hexametaphosphate	% of Total Sample	100.0
Defloc. Corr'n	5.0		
Meniscus Corr'n	-1.0		

T Elapsed Time (min)	Hydrometer Original	Reading Corrected "R"	100Ra/W	% Total Sample	Effective Depth L	Grain Diameter (mm)
0.0	--	--	--	--	--	--
0.5	27.00	21.00	37.2	37.2	11.86	0.0627
1.0	24.00	18.00	31.9	31.9	12.35	0.0453
2.0	22.00	16.00	28.3	28.3	12.68	0.0324
5.0	18.75	12.75	22.6	22.6	13.22	0.0209
15.0	15.75	9.75	17.3	17.3	13.71	0.0123
30.0	13.50	7.50	13.3	13.3	14.08	0.0088
60.0	12.00	6.00	10.6	10.6	14.32	0.0063
120.0	10.25	4.25	7.5	7.5	14.61	0.0045
250.0	9.25	3.25	5.8	5.8	14.77	0.0031
1440.0	8.00	2.00	3.5	3.5	14.98	0.0013

Grain Diameter =  $K \cdot (\text{SQRT}(L/T))$

Data entered by: RS  
Data checked by: SR  
FileName: QUH01454

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.



MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206978-Shaw-011	SAMPLED	6/25/04
DEPTH	12.4-14.4	DATE TESTED	7/13/04 DPM/AG
SAMPLE NO.	12b-021817	WASH SIEVE	Yes
SOIL DESCR.	Proj #206950	DRY SIEVE	No
LOCATION	Maywood Fusrap		

MOISTURE DATA

HYGROSCOPIC	Yes
NATURAL	No
Wt. Wet Soil & Pan (g)	33.37
Wt. Dry Soil & Pan (g)	25.71
Wt. Lost Moisture (g)	7.66
Wt. of Pan Only (g)	3.64
Wt. of Dry Soil (g)	22.07
Moisture Content %	34.7
Wt. Hydrom. Sample Wet (g)	54.52
Wt. Hydrom. Sample Dry (g)	40.48

WASH SIEVE ANALYSIS

Wt. Total Sample Wet (g)	54.52
Weight of + #10 Before Washing (g)	0.00
Weight of + #10 After Washing (g)	0.00
Weight of - #10 Wet (g)	54.52
Weight of - #10 Dry (g)	40.48
Wt. Total Sample Dry (g)	40.48
Calc. Wt. "W" (g)	40.48
Calc. Mass + #10	0.00

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0.00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	0.00	0.00	0.00	0.0	100.0
#4	0.00	0.00	0.00	0.00	0.0	100.0
#10	0.00	0.00	0.00	0.00	0.0	100.0
#20	2.35	2.40	0.05	0.05	0.1	99.9
#40	2.37	2.49	0.12	0.17	0.4	99.6
#60	2.28	2.62	0.34	0.51	1.3	98.7
#100	2.34	3.50	1.16	1.67	4.1	95.9
#200	2.36	6.63	4.27	5.94	14.7	85.3

Data entered by: RS  
Data checked by: SR  
FileName: QUH01117

Date: 07/16/2004  
Date: 07-16-04

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206978-Shaw-011	SAMPLED	6/25/04
DEPTH	12.4-14.4	DATE TESTED	7/13/04 DPM/AG
SAMPLE NO.	12b-021817	WASH SIEVE	Yes
SOIL DESCR.	Proj #206950	DRY SIEVE	No
LOCATION	Maywood Fusrap		

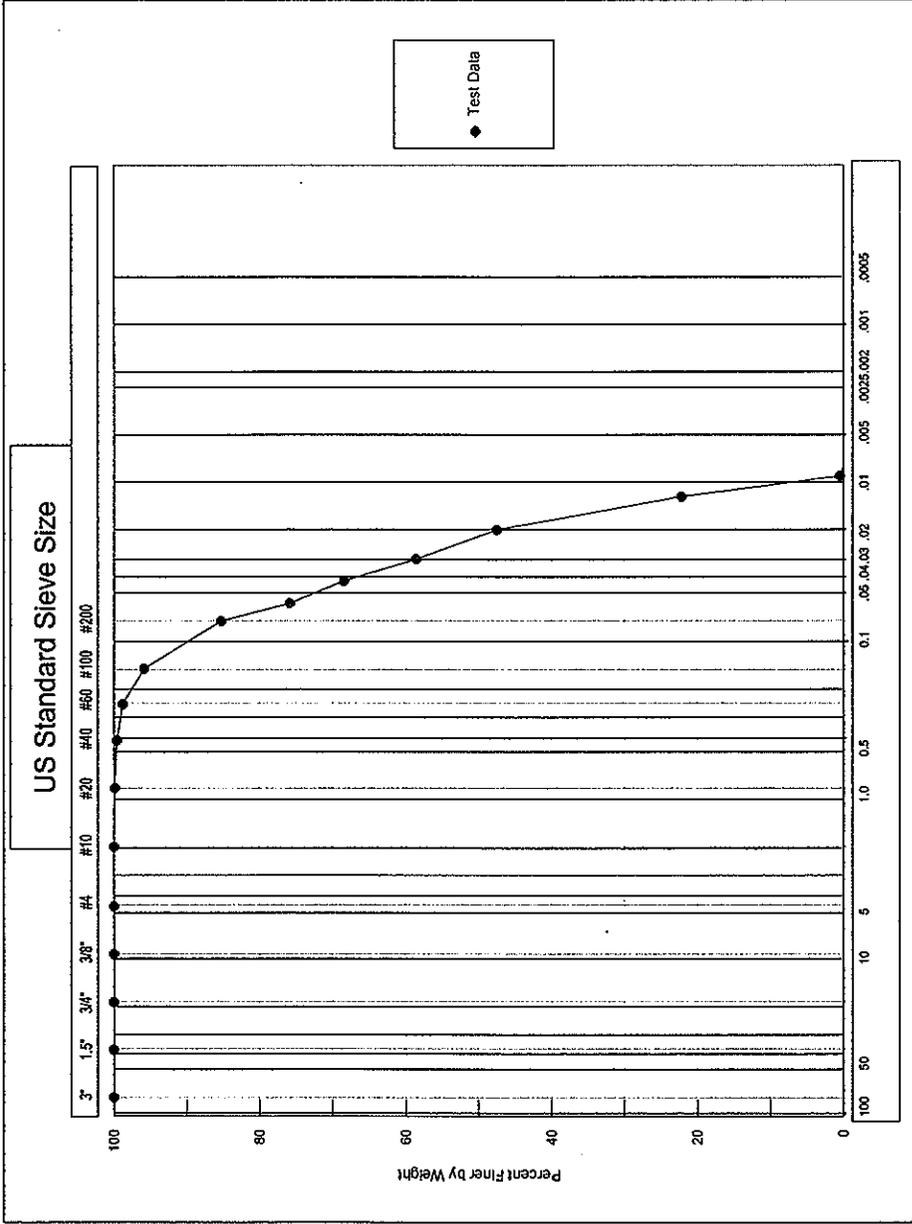
Hydrometer #	ASTM 152 H	Temp., Deg. C	26.0
Sp. Gr. of Soil	2.65	Temp. Coef. K	0.01272
Value of "alpha"	1.00	Wt. Dry Sample "W"	40.475
Deflocculant	Sodium Hexametaphosphate	% of Total Sample	100.0
Defloc. Corr'n	4.8		
Meniscus Corr'n	-1.0		

T Elapsed Time (min)	Hydrometer Reading		100Ra/W	% Total Sample	Effective Depth L	Grain Diameter (mm)
	Original	Corrected "R"				
0.0	--	--	--	--	--	--
0.5	36.50	30.70	75.8	75.8	10.30	0.0577
1.0	33.50	27.70	68.4	68.4	10.80	0.0418
2.0	29.50	23.70	58.6	58.6	11.45	0.0304
5.0	25.00	19.20	47.4	47.4	12.19	0.0199
15.0	14.75	8.95	22.1	22.1	13.87	0.0122
30.0	6.00	0.20	0.5	0.5	15.31	0.0091
60.0	5.50	-0.30	-0.7	-0.7	15.39	0.0064

Grain Diameter =  $K \cdot (\text{SQRT}(L/T))$

Data entered by: RS      Date: 07/16/2004  
 Data checked by: \_\_\_\_\_      Date: \_\_\_\_\_  
 FileName: QUH01117

ADVANCED TERRA TESTING, INC.



USCS		SILT OR CLAY	
COBBLES	GRAVEL	SAND	SILT OR CLAY
	COARSE	MEDIUM	FINE
	SAND		
COBBLES	PEBBLE GRAVEL	SAND	CLAY
TO BOULDERS	COARSE	MED	FINE
	COARSE	COARSE	SILT
			CLAY
			WEINTWORTH

Client: STL-CT      Boring No.: 206978-Shaw-011      Sample No.: 12b-021817  
 Job Number: 2193-137      Depth: 12.4-14.4  
 Classification: **Not Performed**      Advanced Terra Testing, Inc.

MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206920-Shaw-017	SAMPLED	6/22/04
DEPTH	15.7-17.7	DATE TESTED	7/14/04 RS
SAMPLE NO.	12b-021755	WASH SIEVE	Yes
SOIL DESCR.	Proj #206920	DRY SIEVE	No
LOCATION	Maywood Fusrap		

MOISTURE DATA

HYGROSCOPIC	Yes
NATURAL	No
Wt. Wet Soil & Pan (g)	57.37
Wt. Dry Soil & Pan (g)	57.10
Wt. Lost Moisture (g)	0.27
Wt. of Pan Only (g)	3.62
Wt. of Dry Soil (g)	53.48
Moisture Content %	0.5
Wt. Hydrom. Sample Wet (g)	54.30
Wt. Hydrom. Sample Dry (g)	54.02

WASH SIEVE ANALYSIS

Wt. Total Sample Wet (g)	171.72
Weight of + #10 Before Washing (g)	12.03
Weight of + #10 After Washing (g)	9.62
Weight of - #10 Wet (g)	159.69
Weight of - #10 Dry (g)	161.29
Wt. Total Sample Dry (g)	170.91
Calc. Wt. "W" (g)	57.25
Calc. Mass + #10	3.22

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0.00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	0.00	0.00	0.00	0.0	100.0
#4	0.00	4.11	4.11	4.11	2.4	97.6
#10	0.00	5.51	5.51	9.62	5.6	94.4
#20	2.33	5.34	3.01	3.01	10.9	89.1
#40	2.32	6.73	4.41	7.42	18.6	81.4
#60	2.36	8.13	5.77	13.19	28.7	71.3
#100	2.37	9.81	7.44	20.63	41.7	58.3
#200	2.36	10.21	7.85	28.48	55.4	44.6

Data entered by: RS  
Data checked by: SR  
FileName: QUH01755

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

CLIENT STL-CT

JOB NO. 2193-137

BORING NO. 206920-Shaw-017  
DEPTH 15.7-17.7  
SAMPLE NO. 12b-021755  
SOIL DESCR. Proj #206920  
LOCATION Maywood Fusrap

SAMPLED 6/22/04  
DATE TESTED 7/14/04 RS  
WASH SIEVE Yes  
DRY SIEVE No

Hydrometer # ASTM 152 H  
Sp. Gr. of Soil 2.65  
Value of "alpha" 1.00  
Deflocculant Sodium Hexametaphosphate  
Defloc. Corr'n 4.8  
Meniscus Corr'n -1.0

Temp., Deg. C 24.9  
Temp. Coef. K 0.01288  
Wt. Dry Sample "W" 57.246  
% of Total Sample 100.0

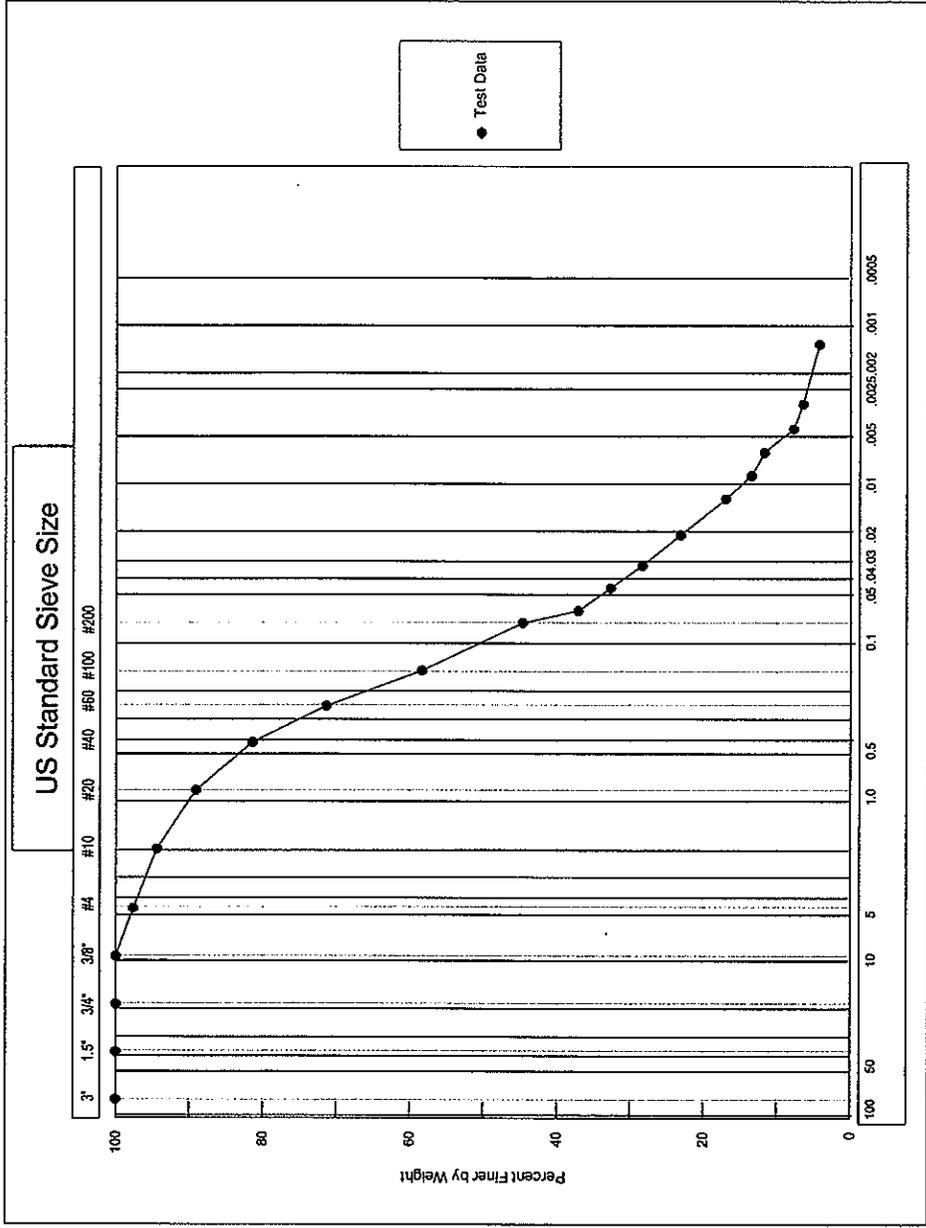
T Elapsed Time (min)	Hydrometer Reading Original	Corrected "R"	100Ra/W	% Total Sample	Effective Depth L	Grain Diameter (mm)
0.0	--	--	--	--	--	--
0.5	27.00	21.20	37.0	37.0	11.86	0.0627
1.0	24.50	18.70	32.7	32.7	12.27	0.0451
2.0	22.00	16.20	28.3	28.3	12.68	0.0324
5.0	19.00	13.20	23.1	23.1	13.17	0.0209
15.0	15.50	9.70	16.9	16.9	13.75	0.0123
30.0	13.50	7.70	13.5	13.5	14.08	0.0088
60.0	12.50	6.70	11.7	11.7	14.24	0.0063
120.0	10.25	4.45	7.8	7.8	14.61	0.0045
250.0	9.50	3.70	6.5	6.5	14.73	0.0031
1436.0	8.25	2.45	4.3	4.3	14.94	0.0013

Grain Diameter =  $K \cdot (\text{SQRT}(L/T))$

Data entered by: RS  
Data checked by: SR  
FileName: QUH01755

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.



COBBLES TO BOULDERS		GRAVEL		SAND			SILT OR CLAY		USCS
		COARSE	FINE	CRS	MEDIUM	FINE			WENTWORTH
COBBLES TO BOULDERS		PEBBLE GRAVEL		SAND			SILT OR CLAY		USCS
COARSE		MED	FINE	GRAN	COARSE	MED	FINE	SILT	CLAY

Client: STL-CT      Boring No.: 206920-Shaw-017      Sample No.: 12b-021755  
 Job Number: 2193-137      Depth: 15.7-17.7  
 Classification: **Not Performed**      Advanced Terra Testing, Inc.

MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT STL-CT

JOB NO. 2193-137

BORING NO. 206920-Shaw-022  
DEPTH 7.8-8.8  
SAMPLE NO. 12b-021756  
SOIL DESCR. Proj #206920  
LOCATION Maywood Fusrap

SAMPLED 6/22/04  
DATE TESTED 7/14/04 RS  
WASH SIEVE Yes  
DRY SIEVE No

MOISTURE DATA

WASH SIEVE ANALYSIS

HYGROSCOPIC Yes  
NATURAL No  
Wt. Wet Soil & Pan (g) 33.52  
Wt. Dry Soil & Pan (g) 33.01  
Wt. Lost Moisture (g) 0.51  
Wt. of Pan Only (g) 3.64  
Wt. of Dry Soil (g) 29.37  
Moisture Content % 1.7

Wt. Total Sample Wet (g) 114.34  
Weight of + #10 Before Washing (g) 2.90  
Weight of + #10 After Washing (g) 2.57  
Weight of - #10 Wet (g) 111.44  
Weight of - #10 Dry (g) 109.86  
Wt. Total Sample Dry (g) 112.43

Wt. Hydrom. Sample Wet (g) 55.72  
Wt. Hydrom. Sample Dry (g) 54.77

Calc. Wt. "W" (g) 56.05  
Calc. Mass + #10 1.28

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0.00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	0.00	0.00	0.00	0.0	100.0
#4	0.00	1.53	1.53	1.53	1.4	98.6
#10	0.00	1.04	1.04	2.57	2.3	97.7
#20	2.37	3.80	1.43	1.43	4.8	95.2
#40	2.31	4.68	2.37	3.80	9.1	90.9
#60	2.36	6.25	3.89	7.69	16.0	84.0
#100	2.37	7.48	5.11	12.80	25.1	74.9
#200	2.37	6.39	4.02	16.82	32.3	67.7

Data entered by: RS  
Data checked by: SR  
FileName: QUH02256

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206920-Shaw-022	SAMPLED	6/22/04
DEPTH	7.8-8.8	DATE TESTED	7/14/04 RS
SAMPLE NO.	12b-021756	WASH SIEVE	Yes
SOIL DESCR.	Proj #206920	DRY SIEVE	No
LOCATION	Maywood Fusrap		
Hydrometer #	ASTM 152 H	Temp., Deg. C	24.9
Sp. Gr. of Soil	2.65	Temp. Coef. K	0.01288
Value of "alpha"	1.00	Wt. Dry Sample "W"	56.053
Deflocculant	Sodium Hexametaphosphate	% of Total Sample	100.0
Defloc. Corr'n	5.0		
Meniscus Corr'n	-1.0		

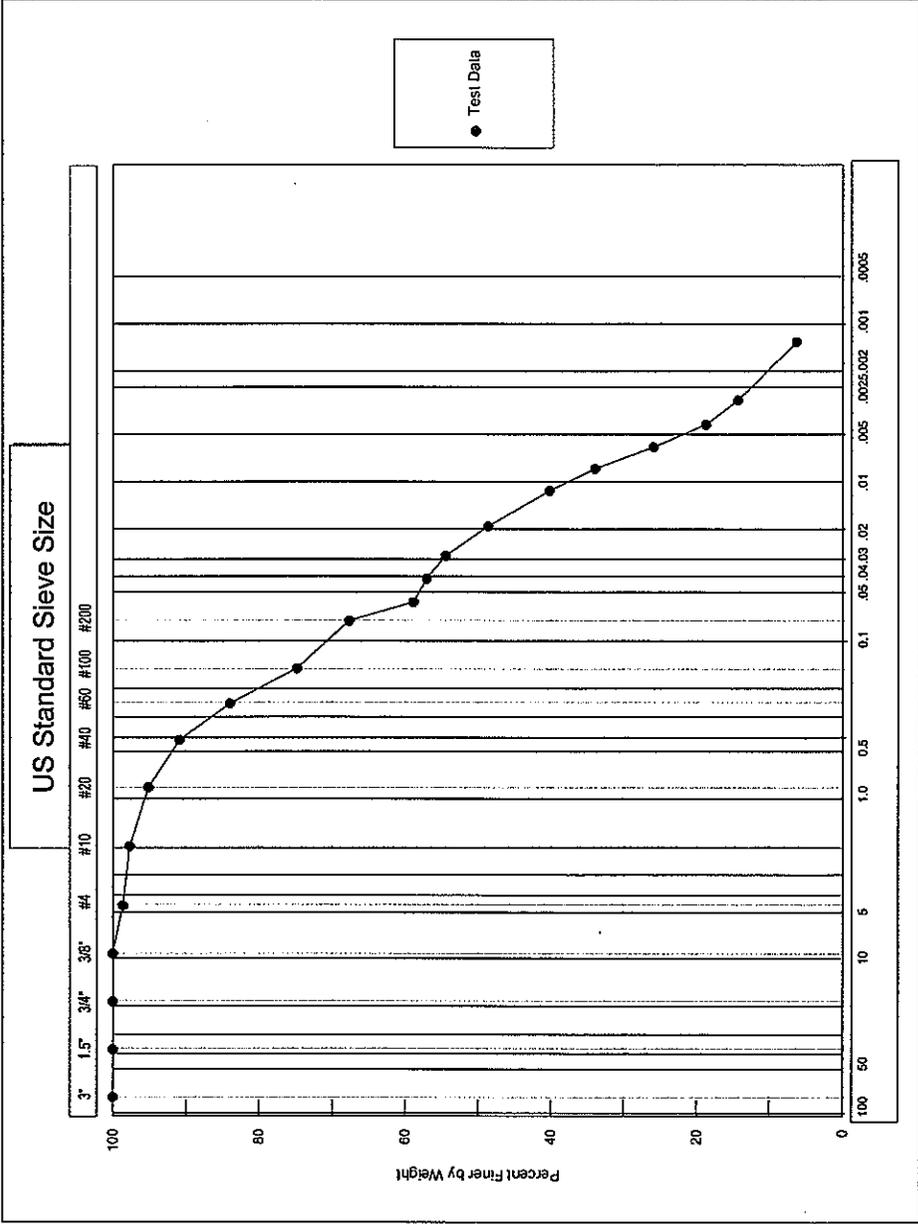
T Elapsed Time (min)	Hydrometer Reading		100Ra/W	% Total Sample	Effective Depth L	Grain Diameter (mm)
	Original	Corrected "R"				
0.0	--	--	--	--	--	--
0.5	39.00	33.00	58.9	58.9	9.89	0.0573
1.0	38.00	32.00	57.1	57.1	10.06	0.0408
2.0	36.50	30.50	54.4	54.4	10.30	0.0292
5.0	33.25	27.25	48.6	48.6	10.84	0.0190
15.0	28.50	22.50	40.1	40.1	11.62	0.0113
30.0	25.00	19.00	33.9	33.9	12.19	0.0082
60.0	20.50	14.50	25.9	25.9	12.93	0.0060
120.0	16.50	10.50	18.7	18.7	13.58	0.0043
250.0	14.00	8.00	14.3	14.3	13.99	0.0030
1440.0	9.50	3.50	6.2	6.2	14.73	0.0013

Grain Diameter = K\*(SQRT(L/T))

Data entered by: RS  
Data checked by: SR  
FileName: QUH02256

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.



MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT STL-CT

JOB NO. 2193-137

BORING NO. 206950-Shaw-004  
DEPTH 8.1-9.1  
SAMPLE NO. 12b-021752  
SOIL DESCR. Proj #2069650  
LOCATION Maywood Fusrap

SAMPLED 6/23/04  
DATE TESTED 7/14/04 RS  
WASH SIEVE Yes  
DRY SIEVE No

MOISTURE DATA

WASH SIEVE ANALYSIS

HYGROSCOPIC Yes

NATURAL No

Wt. Wet Soil & Pan (g) 16.80  
Wt. Dry Soil & Pan (g) 15.27  
Wt. Lost Moisture (g) 1.53  
Wt. of Pan Only (g) 3.68  
Wt. of Dry Soil (g) 11.59  
Moisture Content % 13.2

Wt. Total Sample Wet (g) 68.78  
Weight of + #10 Before Washing (g) 0.29  
Weight of + #10 After Washing (g) 0.26  
Weight of - #10 Wet (g) 68.49  
Weight of - #10 Dry (g) 60.53  
Wt. Total Sample Dry (g) 60.79  
Calc. Wt. "W" (g) 48.89  
Calc. Mass + #10 0.21

Wt. Hydrom. Sample Wet (g) 55.10  
Wt. Hydrom. Sample Dry (g) 48.68

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0.00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	0.00	0.00	0.00	0.0	100.0
#4	0.00	0.00	0.00	0.00	0.0	100.0
#10	0.00	0.26	0.26	0.26	0.4	99.6
#20	2.36	2.96	0.60	0.60	1.7	98.3
#40	2.37	2.96	0.59	1.19	2.9	97.1
#60	2.39	2.85	0.46	1.65	3.8	96.2
#100	2.31	3.35	1.04	2.69	5.9	94.1
#200	2.33	4.90	2.57	5.26	11.2	88.8

Data entered by: RS  
Data checked by: SR  
FileName: QUH00452

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206950-Shaw-004	SAMPLED	6/23/04
DEPTH	8.1-9.1	DATE TESTED	7/14/04 RS
SAMPLE NO.	12b-021752	WASH SIEVE	Yes
SOIL DESCR.	Proj #2069650	DRY SIEVE	No
LOCATION	Maywood Fusrap		
Hydrometer #	ASTM 152 H	Temp., Deg. C	25.1
Sp. Gr. of Soil	2.65	Temp. Coef. K	0.01285
Value of "alpha"	1.00	Wt. Dry Sample "W"	48.887
Deflocculant	Sodium Hexametaphosphate	% of Total Sample	100.0
Defloc. Corr'n	4.8		
Meniscus Corr'n	-1.0		

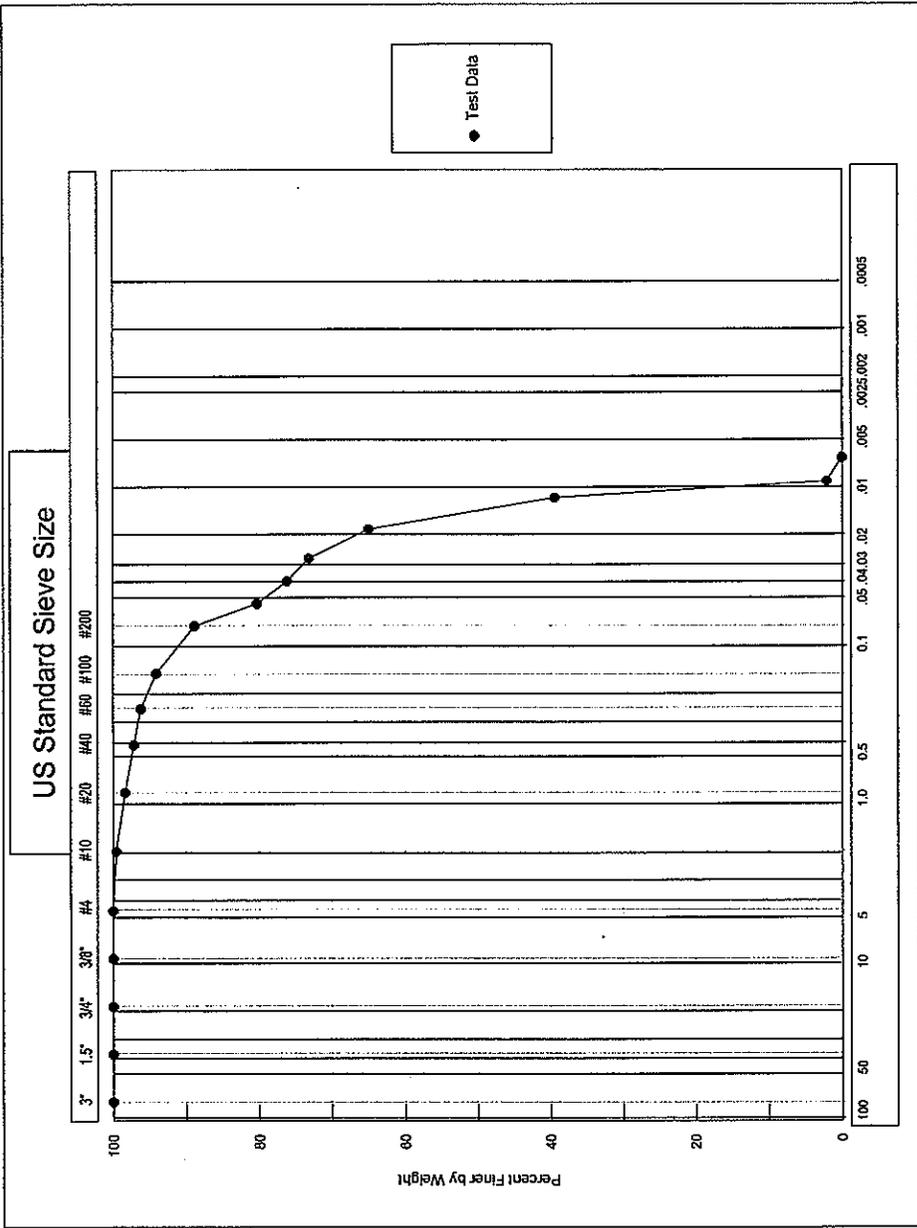
T	Hydrometer Reading		100Ra/W	% Total Sample	Effective Depth L	Grain Diameter (mm)
Elapsed Time (min)	Original	Corrected "R"				
0.0	--	--	--	--	--	--
0.5	45.00	39.25	80.3	80.3	8.91	0.0542
1.0	43.00	37.25	76.2	76.2	9.24	0.0390
2.0	41.50	35.75	73.1	73.1	9.48	0.0280
5.0	37.50	31.75	64.9	64.9	10.14	0.0183
15.0	25.00	19.25	39.4	39.4	12.19	0.0116
30.0	6.75	1.00	2.0	2.0	15.18	0.0091
60.0	5.75	0.00	0.0	0.0	15.35	0.0065

Grain Diameter = K\*(SQRT(L/T))

Data entered by: RS  
Data checked by: SA  
FileName: QUH00452

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.



MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT    STL-CT	JOB NO.    2193-137
BORING NO.    206974-Shaw-004	SAMPLED        6/24/04
DEPTH         10.2-11.2	DATE TESTED    7/15/04 RS
SAMPLE NO.    12b-021757	WASH SIEVE     Yes
SOIL DESCR.    Project #206974	DRY SIEVE       No
LOCATION        Maywood Fusrap	

MOISTURE DATA

WASH SIEVE ANALYSIS

HYGROSCOPIC    Yes		Wt. Total Sample	
		Wet (g)	192.90
NATURAL         No		Weight of + #10	
		Before Washing (g)	2.85
		Weight of + #10	
Wt. Wet Soil & Pan (g)	35.50	After Washing (g)	2.29
Wt. Dry Soil & Pan (g)	35.30	Weight of - #10	
Wt. Lost Moisture (g)	0.20	Wet (g)	190.05
Wt. of Pan Only (g)	3.76	Weight of - #10	
Wt. of Dry Soil (g)	31.54	Dry (g)	189.41
Moisture Content %	0.6	Wt. Total Sample	
		Dry (g)	191.70
Wt. Hydrom. Sample Wet (g)	60.71	Calc. Wt. "W" (g)	61.05
Wt. Hydrom. Sample Dry (g)	60.33	Calc. Mass + #10	0.73

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0.00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	0.00	0.00	0.00	0.0	100.0
#4	0.00	0.41	0.41	0.41	0.2	99.8
#10	0.00	1.88	1.88	2.29	1.2	98.8
#20	3.69	6.48	2.79	2.79	5.8	94.2
#40	3.65	11.08	7.43	10.22	17.9	82.1
#60	3.64	11.88	8.24	18.46	31.4	68.6
#100	3.69	12.13	8.44	26.90	45.3	54.7
#200	3.67	9.84	6.17	33.07	55.4	44.6

Data entered by:    RS  
Data checked by: AMG  
FileName:    QUH00457

Date:    07/19/2004  
Date: 7/19/04

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206974-Shaw-004	SAMPLED	6/24/04
DEPTH	10.2-11.2	DATE TESTED	7/15/04 RS
SAMPLE NO.	12b-021757	WASH SIEVE	Yes
SOIL DESCR.	Project #206974	DRY SIEVE	No
LOCATION	Maywood Fusrap		
Hydrometer #	ASTM 152 H	Temp., Deg. C	24.4
Sp. Gr. of Soil	2.65	Temp. Coef. K	0.01295
Value of "alpha"	1.00	Wt. Dry Sample "W"	61.055
Deflocculant	Sodium Hexametaphosphate	% of Total Sample	100.0
Defloc. Corr'n	5.3		
Meniscus Corr'n	-1.0		

T Elapsed Time (min)	Hydrometer Reading		100Ra/W	% Total Sample	Effective Depth L	Grain Diameter (mm)
	Original	Corrected "R"				
0.0	--	--	--	--	--	--
0.5	32.00	25.75	42.2	42.2	11.04	0.0609
1.0	29.50	23.25	38.1	38.1	11.45	0.0438
2.0	26.00	19.75	32.3	32.3	12.03	0.0318
5.0	22.25	16.00	26.2	26.2	12.64	0.0206
15.0	18.50	12.25	20.1	20.1	13.26	0.0122
30.0	17.00	10.75	17.6	17.6	13.50	0.0087
60.0	14.50	8.25	13.5	13.5	13.91	0.0062
120.0	13.00	6.75	11.1	11.1	14.16	0.0044
250.0	12.50	6.25	10.2	10.2	14.24	0.0031
1448.0	10.50	4.25	7.0	7.0	14.57	0.0013

Grain Diameter = K\*(SQRT(L/T))

Data entered by: RS  
Data checked by: AMG  
FileName: QUH00457

Date: 07/19/2004  
Date: 7/19/04

ADVANCED TERRA TESTING, INC.



MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT STL-CT

JOB NO. 2193-137

BORING NO. 206974-Shaw-007  
DEPTH 8.6-10.6  
SAMPLE NO. 12b-021758  
SOIL DESCR. Proj #206974  
LOCATION Maywood Fusrap

SAMPLED 6/24/04  
DATE TESTED 7/15/04 RS  
WASH SIEVE Yes  
DRY SIEVE No

MOISTURE DATA

WASH SIEVE ANALYSIS

HYGROSCOPIC Yes  
NATURAL No  
Wt. Wet Soil & Pan (g) 45.71  
Wt. Dry Soil & Pan (g) 45.56  
Wt. Lost Moisture (g) 0.15  
Wt. of Pan Only (g) 3.62  
Wt. of Dry Soil (g) 41.94  
Moisture Content % 0.4  
Wt. Hydrom. Sample Wet (g) 60.25  
Wt. Hydrom. Sample Dry (g) 60.03

Wt. Total Sample Wet (g) 162.50  
Weight of + #10 Before Washing (g) 4.39  
Weight of + #10 After Washing (g) 2.72  
Weight of - #10 Wet (g) 158.11  
Weight of - #10 Dry (g) 159.21  
Wt. Total Sample Dry (g) 161.93  
Calc. Wt. "W" (g) 61.06  
Calc. Mass + #10 1.03

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0:00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	0.00	0.00	0.00	0.0	100.0
#4	0.00	1.79	1.79	1.79	1.1	98.9
#10	0.00	0.93	0.93	2.72	1.7	98.3
#20	2.37	3.78	1.41	1.41	4.0	96.0
#40	2.41	7.01	4.60	6.01	11.5	88.5
#60	2.31	13.27	10.96	16.97	29.5	70.5
#100	2.37	28.77	26.40	43.37	72.7	27.3
#200	2.37	13.02	10.65	54.02	90.2	9.8

Data entered by: RS  
Data checked by: SR  
FileName: QUH00758

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206974-Shaw-007	SAMPLED	6/24/04
DEPTH	8.6-10.6	DATE TESTED	7/15/04 RS
SAMPLE NO.	12b-021758	WASH SIEVE	Yes
SOIL DESCR.	Proj #206974	DRY SIEVE	No
LOCATION	Maywood Fusrap		
Hydrometer #	ASTM 152 H	Temp., Deg. C	24.4
Sp. Gr. of Soil	2.65	Temp. Coef. K	0.01295
Value of "alpha"	1.00	Wt. Dry Sample "W"	61.057
Deflocculant	Sodium Hexametaphosphate	% of Total Sample	100.0
Defloc. Corr'n	5.3		
Meniscus Corr'n	-1.0		

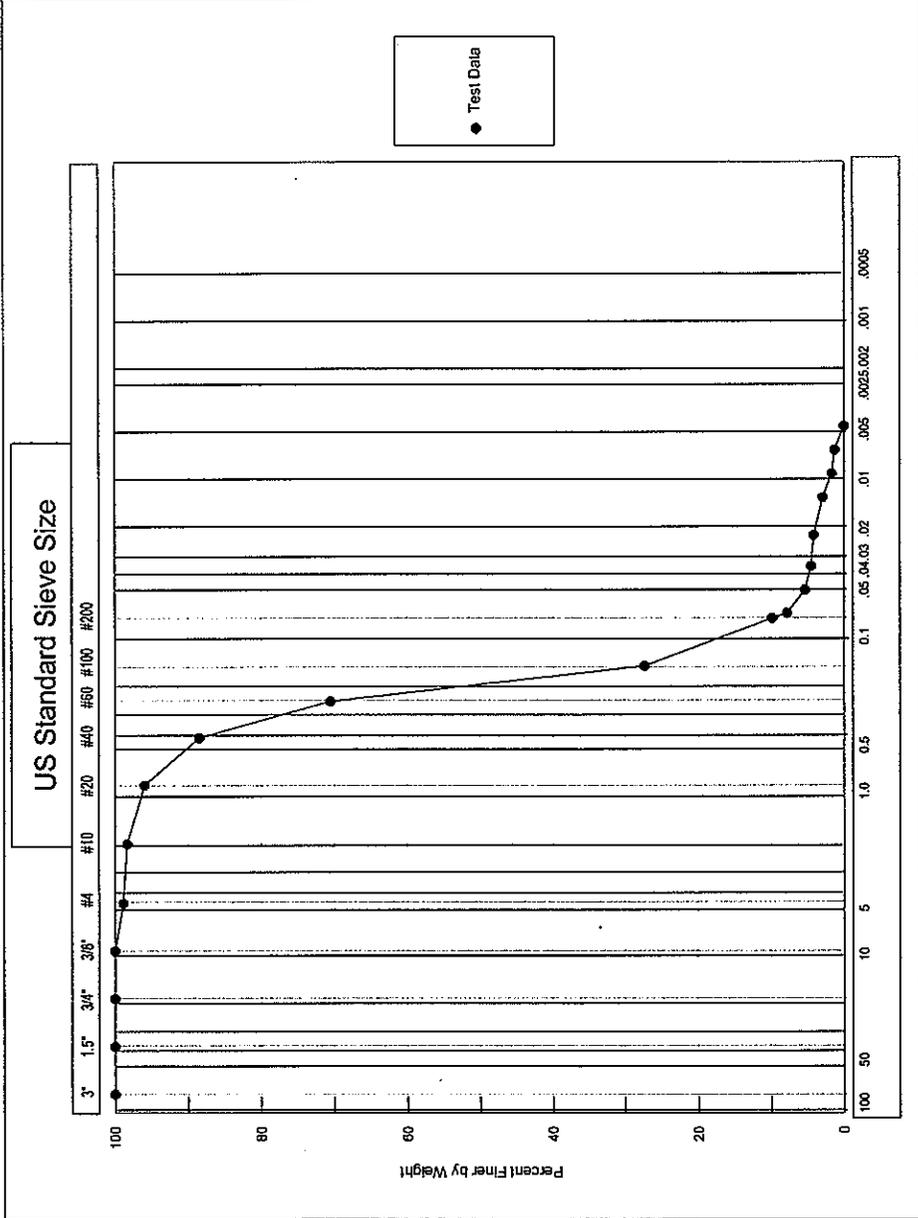
T Elapsed Time (min)	Hydrometer Original Reading	Reading Corrected "R"	100Ra/W	% Total Sample	Effective Depth L	Grain Diameter (mm)
0.0	--	--	--	--	--	--
0.5	11.00	4.75	7.8	7.8	14.49	0.0697
1.0	9.50	3.25	5.3	5.3	14.73	0.0497
2.0	9.00	2.75	4.5	4.5	14.81	0.0352
5.0	8.75	2.50	4.1	4.1	14.86	0.0223
15.0	8.00	1.75	2.9	2.9	14.98	0.0129
30.0	7.25	1.00	1.6	1.6	15.10	0.0092
60.0	7.00	0.75	1.2	1.2	15.14	0.0065
120.0	6.25	0.00	0.0	0.0	15.27	0.0046

Grain Diameter =  $K \cdot (\text{SQRT}(L/T))$

Data entered by: RS  
Data checked by: SR  
FileName: QUH00758

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.



COBBLES		GRAVEL		SAND			SILT OR CLAY			USCS
		COARSE		FINE		MEDIUM	FINE			
COBBLES TO BOULDERS		PEBBLE GRAVEL		SAND			SILT			WENTWORTH
		COARSE		MED	FINE	GRAN	COARSE	MED	FINE	CLAY

Client: STL-CT      Boring No.: 206974-Shaw-007      Sample No.: 12b-021758  
 Job Number: 2193-137      Depth: 8.6-10.6  
 Classification: **Classification Not Performed**      Advanced Terra Testing, Inc.

MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT STL-CT

JOB NO. 2193-137

BORING NO. 206974-Shaw-014  
DEPTH 9.6-10.6  
SAMPLE NO. 12b-021759  
SOIL DESCR. Project #206974  
LOCATION Maywood Fusrap

SAMPLED 6/24/04  
DATE TESTED 7/15/04 RS  
WASH SIEVE Yes  
DRY SIEVE No

MOISTURE DATA

WASH SIEVE ANALYSIS

HYGROSCOPIC Yes  
NATURAL No  
  
Wt. Wet Soil & Pan (g) 26.68  
Wt. Dry Soil & Pan (g) 26.50  
Wt. Lost Moisture (g) 0.18  
Wt. of Pan Only (g) 3.74  
Wt. of Dry Soil (g) 22.76  
Moisture Content % 0.8  
  
Wt. Hydrom. Sample Wet (g) 60.21  
Wt. Hydrom. Sample Dry (g) 59.74

Wt. Total Sample Wet (g) 193.24  
Weight of + #10 Before Washing (g) 1.99  
Weight of + #10 After Washing (g) 1.62  
Weight of - #10 Wet (g) 191.25  
Weight of - #10 Dry (g) 190.12  
Wt. Total Sample Dry (g) 191.74  
  
Calc. Wt. "W" (g) 60.25  
Calc. Mass + #10 0.51

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0:00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	0.00	0.00	0.00	0.0	100.0
#4	0.00	0.00	0.00	0.00	0.0	100.0
#10	0.00	1.62	1.62	1.62	0.8	99.2
#20	3.63	5.70	2.07	2.07	4.3	95.7
#40	3.57	8.87	5.30	7.37	13.1	86.9
#60	3.73	11.15	7.42	14.79	25.4	74.6
#100	3.67	12.58	8.91	23.70	40.2	59.8
#200	3.71	13.79	10.08	33.78	56.9	43.1

Data entered by: RS  
Data checked by: AMG  
FileName: QUH01459

Date: 07/19/2004  
Date: 7/19/04

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206974-Shaw-014	SAMPLED	6/24/04
DEPTH	9.6-10.6	DATE TESTED	7/15/04 RS
SAMPLE NO.	12b-021759	WASH SIEVE	Yes
SOIL DESCR.	Project #206974	DRY SIEVE	No
LOCATION	Maywood Fusrap		
Hydrometer #	ASTM 152 H	Temp., Deg. C	24.5
Sp. Gr. of Soil	2.65	Temp. Coef. K	0.01294
Value of "alpha"	1.00	Wt. Dry Sample "W"	60.247
Deflocculant	Sodium Hexametaphosphate	% of Total Sample	100.0
Defloc. Corr'n	5.3		
Meniscus Corr'n	-1.0		

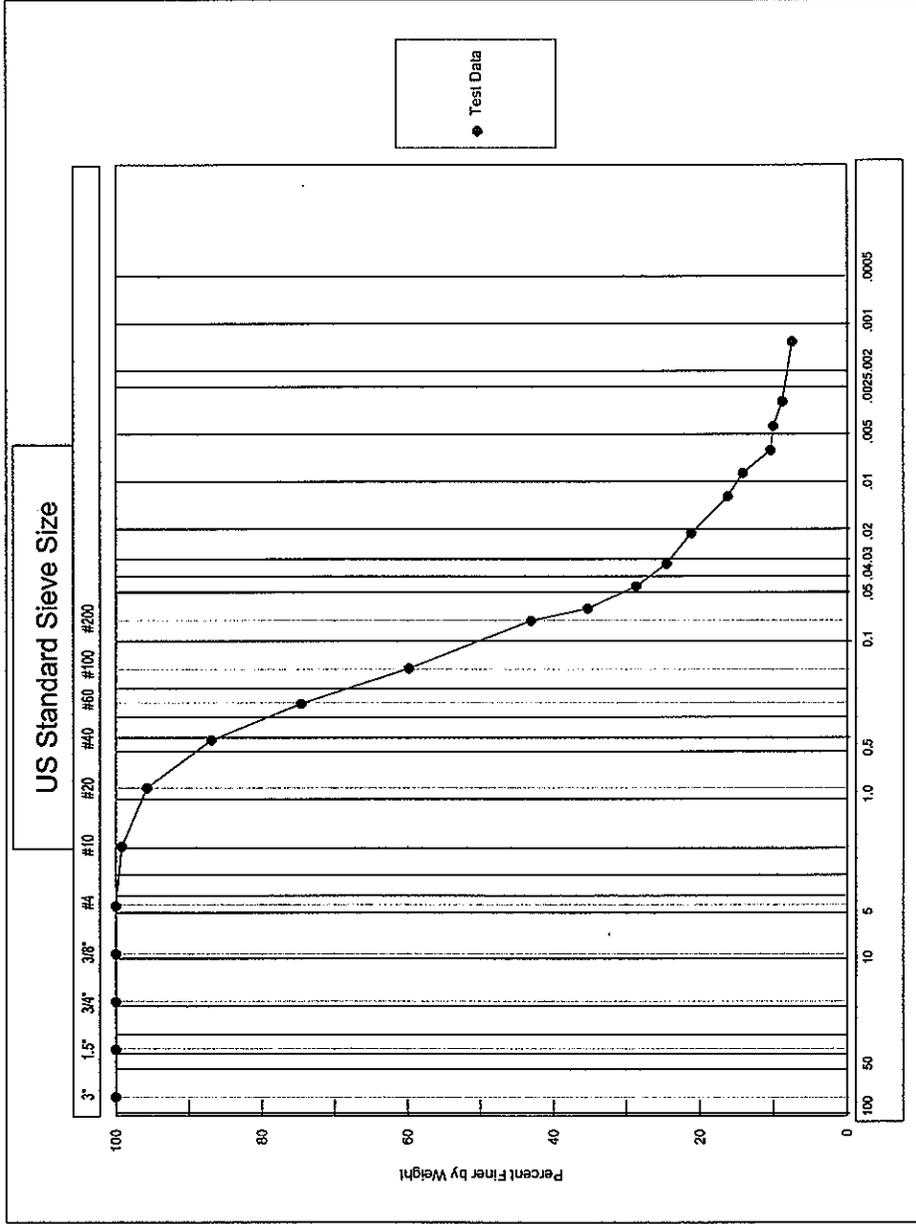
T Elapsed Time (min)	Hydrometer Reading		100Ra/W	% Total Sample	Effective Depth L	Grain Diameter (mm)
	Original	Corrected "R"				
0.0	--	--	--	--	--	--
0.5	27.50	21.25	35.3	35.3	11.78	0.0628
1.0	23.50	17.25	28.6	28.6	12.44	0.0456
2.0	21.00	14.75	24.5	24.5	12.85	0.0328
5.0	19.00	12.75	21.2	21.2	13.17	0.0210
15.0	16.00	9.75	16.2	16.2	13.67	0.0123
30.0	14.75	8.50	14.1	14.1	13.87	0.0088
60.0	12.50	6.25	10.4	10.4	14.24	0.0063
120.0	12.25	6.00	10.0	10.0	14.28	0.0045
250.0	11.50	5.25	8.7	8.7	14.40	0.0031
1441.0	10.75	4.50	7.5	7.5	14.53	0.0013

Grain Diameter = K\*(SQRT(L/T))

Data entered by: RS  
Data checked by: AMG  
FileName: QUH01459

Date: 07/19/2004  
Date: 7/19/04

ADVANCED TERRA TESTING, INC.



USCS		SILT OR CLAY					
		SAND					
		GRAVEL	FINE	CRS	MEDIUM	FINE	
WENTWORTH		SILT					
		SAND					
		PEBBLE GRAVEL	MED	FINE	GRAN	COARSE	FINE
		COARSE	COARSE	MED	FINE		

Client: STL-CT      Boring No.: 206974-Shaw-014      Sample No.: 12b-021759  
 Job Number: 2193-137      Depth: 9.6-10.6  
 Classification: **Not Performed**      Advanced Terra Testing, Inc.

MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT STL-CT

JOB NO. 2193-137

BORING NO. 206974-Shaw-011  
DEPTH 8.6-9.6  
SAMPLE NO. 12b-021761  
SOIL DESCR. Project #206974  
LOCATION Maywood Fusrap

SAMPLED 6/24/04  
DATE TESTED 7/15/04 RS  
WASH SIEVE Yes  
DRY SIEVE No

MOISTURE DATA

WASH SIEVE ANALYSIS

HYGROSCOPIC Yes  
NATURAL No  
  
Wt. Wet Soil & Pan (g) 50.37  
Wt. Dry Soil & Pan (g) 50.02  
Wt. Lost Moisture (g) 0.35  
Wt. of Pan Only (g) 3.61  
Wt. of Dry Soil (g) 46.41  
Moisture Content % 0.8  
  
Wt. Hydrom. Sample Wet (g) 61.44  
Wt. Hydrom. Sample Dry (g) 60.98

Wt. Total Sample  
Wet (g) 204.45  
Weight of + #10  
Before Washing (g) 7.11  
Weight of + #10  
After Washing (g) 6.03  
Weight of - #10  
Wet (g) 197.34  
Weight of - #10  
Dry (g) 196.93  
Wt. Total Sample  
Dry (g) 202.96  
  
Calc. Wt. "W" (g) 62.85  
Calc. Mass + #10 1.87

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0.00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	0.00	0.00	0.00	0.0	100.0
#4	0.00	1.45	1.45	1.45	0.7	99.3
#10	0.00	4.58	4.58	6.03	3.0	97.0
#20	3.74	7.90	4.16	4.16	9.6	90.4
#40	3.68	12.01	8.33	12.49	22.8	77.2
#60	3.61	14.10	10.49	22.98	39.5	60.5
#100	3.57	13.34	9.77	32.75	55.1	44.9
#200	3.62	11.65	8.03	40.78	67.9	32.1

Data entered by: RS Date: 07/19/2004  
Data checked by: \_\_\_\_\_ Date: \_\_\_\_\_  
FileName: QUH01761

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206974-Shaw-011	SAMPLED	6/24/04
DEPTH	8.6-9.6	DATE TESTED	7/15/04 RS
SAMPLE NO.	12b-021761	WASH SIEVE	Yes
SOIL DESCR.	Project #206974	DRY SIEVE	No
LOCATION	Maywood Fusrap		

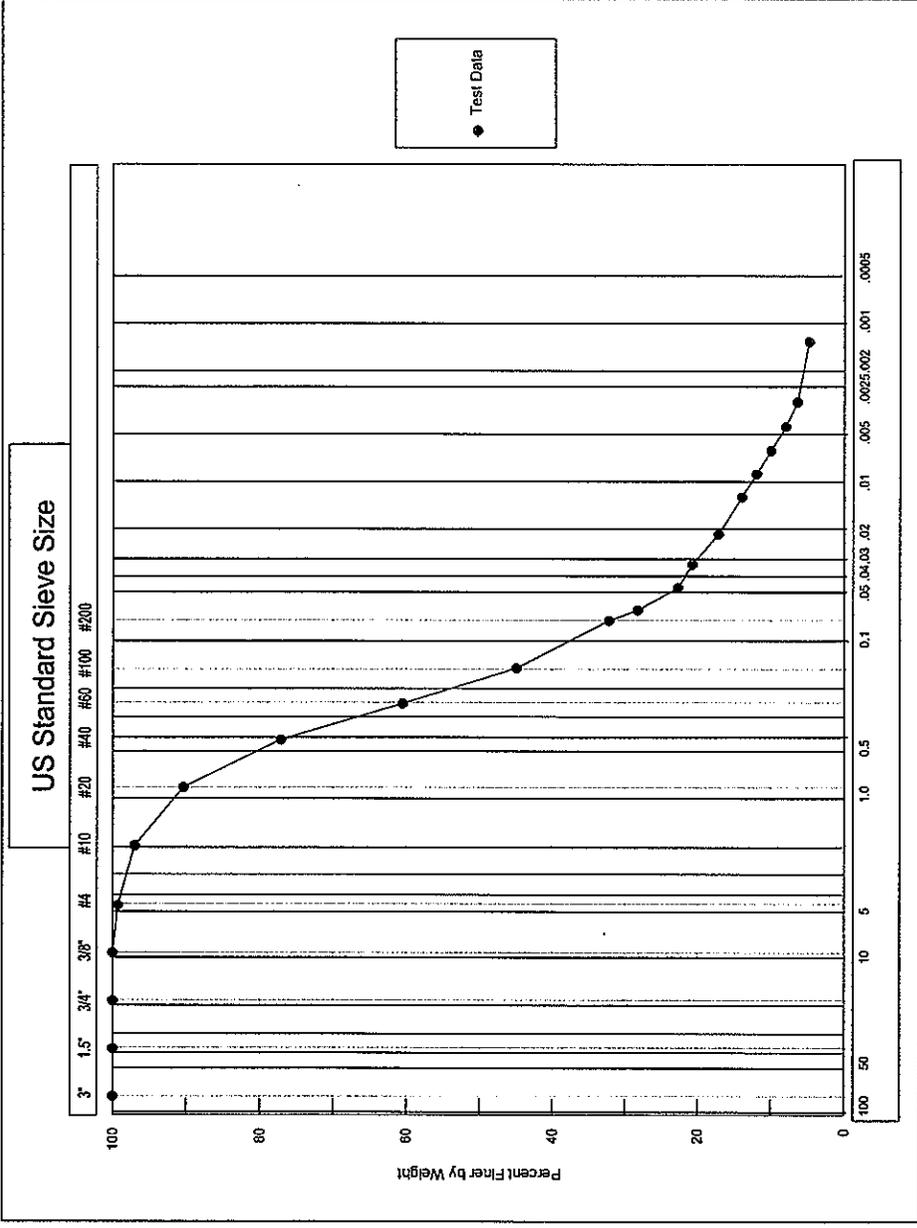
Hydrometer #	ASTM 152 H	Temp., Deg. C	24.3
Sp. Gr. of Soil	2.65	Temp. Coef. K	0.01297
Value of "alpha"	1.00	Wt. Dry Sample "W"	62.851
Deflocculant	Sodium Hexametaphosphate	% of Total Sample	100.0
Defloc. Corr'n	5.3		
Meniscus Corr'n	-1.0		

T	Hydrometer Reading		100Ra/W	% Total Sample	Effective Depth L	Grain Diameter (mm)
Elapsed Time (min)	Original	Corrected "R"				
0.0	--	--	--	--	--	--
0.5	24.00	17.75	28.2	28.2	12.35	0.0644
1.0	20.50	14.25	22.7	22.7	12.93	0.0466
2.0	19.25	13.00	20.7	20.7	13.13	0.0332
5.0	17.00	10.75	17.1	17.1	13.50	0.0213
15.0	15.00	8.75	13.9	13.9	13.83	0.0124
30.0	13.75	7.50	11.9	11.9	14.04	0.0089
60.0	12.50	6.25	9.9	9.9	14.24	0.0063
120.0	11.25	5.00	8.0	8.0	14.45	0.0045
250.0	10.25	4.00	6.4	6.4	14.61	0.0031
1461.0	9.25	3.00	4.8	4.8	14.77	0.0013

Grain Diameter =  $K \cdot (\text{SQRT}(L/T))$

Data entered by: RS Date: 07/19/2004  
 Data checked by: AMG Date: 7/19/04  
 FileName: QUH01761

ADVANCED TERRA TESTING, INC.



USCS		WENTWORTH	
SILT OR CLAY		CLAY	
SAND		SAND	
GRAVEL	FINE	CRS	FINE
COARSE	MEDIUM	COARSE	FINE
PEBBLE GRAVEL		SAND	
COARSE	MED	COARSE	FINE
TO BOULDERS		SILT	
SILT		CLAY	

Client: STL-CT      Boring No.: 206974-Shaw-011      Sample No.: 12b-021761  
 Job Number: 2193-137      Depth: 8.6-9.6  
 Classification: **Classification Not Performed**      Advanced Terra Testing, Inc.

MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206974-Shaw-001	SAMPLED	6/24/04
DEPTH	12.6-13.6	DATE TESTED	7/15/04 RS
SAMPLE NO.	12b-021762	WASH SIEVE	Yes
SOIL DESCR.	Project #206974	DRY SIEVE	No
LOCATION	Maywood Fusrap		

MOISTURE DATA

HYGROSCOPIC	Yes
NATURAL	No
Wt. Wet Soil & Pan (g)	38.97
Wt. Dry Soil & Pan (g)	38.68
Wt. Lost Moisture (g)	0.29
Wt. of Pan Only (g)	3.72
Wt. of Dry Soil (g)	34.96
Moisture Content %	0.8
Wt. Hydrom. Sample Wet (g)	61.67
Wt. Hydrom. Sample Dry (g)	61.16

WASH SIEVE ANALYSIS

Wt. Total Sample	Wet (g)	146.98
Weight of + #10	Before Washing (g)	7.23
Weight of + #10	After Washing (g)	6.22
Weight of - #10	Wet (g)	139.75
Weight of - #10	Dry (g)	139.60
Wt. Total Sample	Dry (g)	145.82
Calc. Wt. "W" (g)		63.89
Calc. Mass + #10		2.73

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0.00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	0.00	0.00	0.00	0.0	100.0
#4	0.00	3.24	3.24	3.24	2.2	97.8
#10	0.00	2.98	2.98	6.22	4.3	95.7
#20	3.57	9.44	5.87	5.87	13.5	86.5
#40	3.58	17.76	14.18	20.05	35.6	64.4
#60	3.69	15.64	11.95	32.00	54.4	45.6
#100	3.70	16.20	12.50	44.50	73.9	26.1
#200	3.61	9.24	5.63	50.13	82.7	17.3

Data entered by: RS Date: 07/19/2004  
 Data checked by: AMG Date: 7/19/04  
 FileName: QUH00162

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

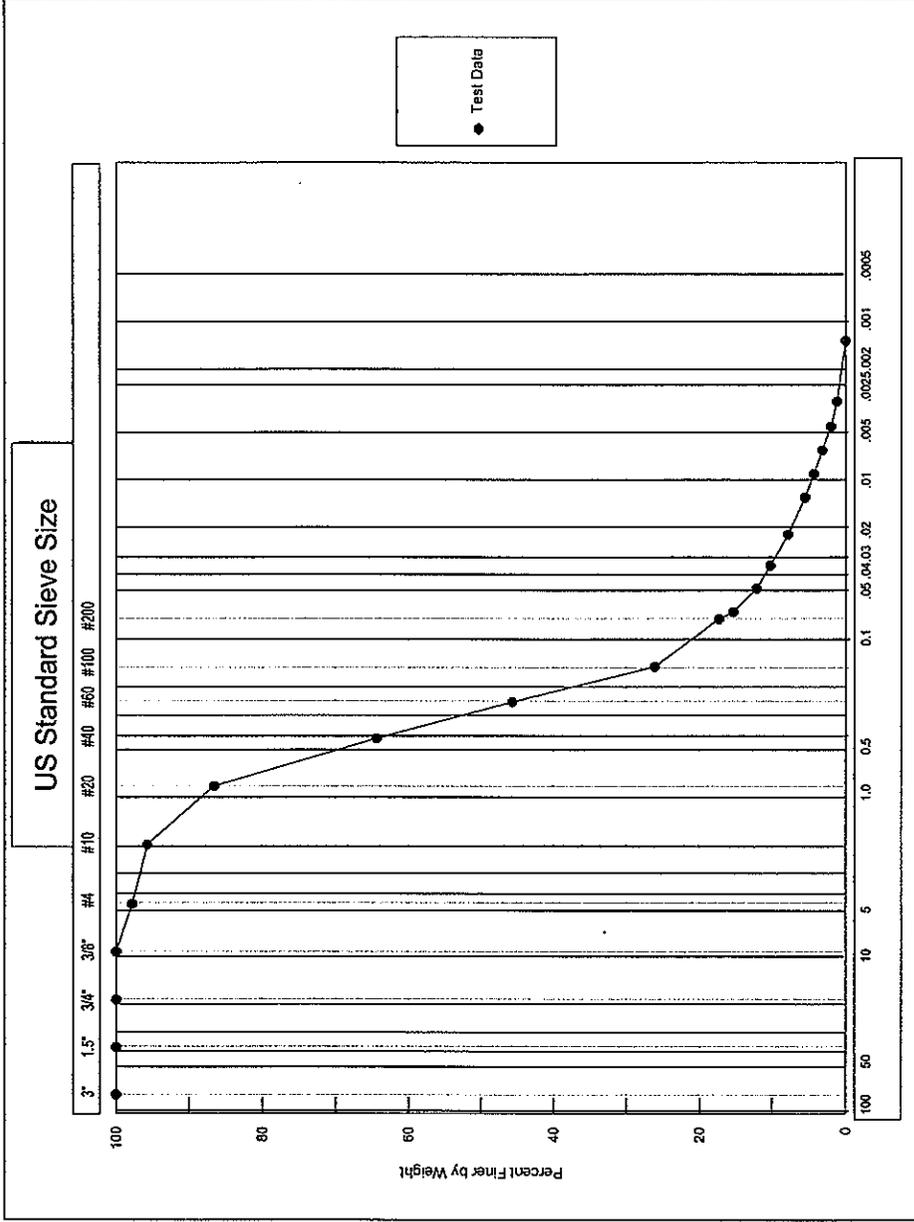
CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206974-Shaw-001	SAMPLED	6/24/04
DEPTH	12.6-13.6	DATE TESTED	7/15/04 RS
SAMPLE NO.	12b-021762	WASH SIEVE	Yes
SOIL DESCR.	Project #206974	DRY SIEVE	No
LOCATION	Maywood Fusrap		
Hydrometer #	ASTM 152 H	Temp., Deg. C	24.4
Sp. Gr. of Soil	2.65	Temp. Coef. K	0.01295
Value of "alpha"	1.00	Wt. Dry Sample "W"	63.889
Deflocculant	Sodium Hexametaphosphate	% of Total Sample	100.0
Defloc. Corr'n	5.3		
Meniscus Corr'n	-1.0		

T	Hydrometer Reading		100Ra/W	% Total Sample	Effective Depth L	Grain Diameter (mm)
Elapsed Time (min)	Original	Corrected "R"				
0.0	--	--	--	--	--	--
0.5	16.00	9.75	15.3	15.3	13.67	0.0677
1.0	14.00	7.75	12.1	12.1	13.99	0.0484
2.0	12.75	6.50	10.2	10.2	14.20	0.0345
5.0	11.25	5.00	7.8	7.8	14.45	0.0220
15.0	9.75	3.50	5.5	5.5	14.69	0.0128
30.0	9.00	2.75	4.3	4.3	14.81	0.0091
60.0	8.25	2.00	3.1	3.1	14.94	0.0065
120.0	7.50	1.25	2.0	2.0	15.06	0.0046
250.0	7.00	0.75	1.2	1.2	15.14	0.0032
1457.0	6.25	0.00	0.0	0.0	15.27	0.0013

Grain Diameter = K\*(SQRT(L/T))

Data entered by: RS Date: 07/19/2004  
 Data checked by: AMC Date: 7/19/04  
 FileName: QUH00162

ADVANCED TERRA TESTING, INC.



COBBLES		GRAVEL		SAND			SILT OR CLAY			USCS
		COARSE	FINE	CRS	MEDIUM	FINE				
COBBLES TO BOULDERS		PEBBLE GRAVEL			SAND			SILT	CLAY	WENTWORTH
		COARSE	MED	FINE	GRAN	COARSE	MED	FINE		

Client: STL-CT      Boring No.: 206974-Shaw-001      Sample No.: 12b-021762  
 Job Number: 2193-137      Depth: 12.6-13.6  
 Classification: **Not Performed**      Advanced Terra Testing, Inc.

MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206978-Shaw-001	SAMPLED	6/25/04
DEPTH	7.6-8.6	DATE TESTED	7/13/04 DPM/AG
SAMPLE NO.	12b-021760	WASH SIEVE	Yes
SOIL DESCR.	Proj #2069650	DRY SIEVE	No
LOCATION	Maywood Fusrap		

MOISTURE DATA

HYGROSCOPIC	Yes
NATURAL	No
Wt. Wet Soil & Pan (g)	69.06
Wt. Dry Soil & Pan (g)	66.87
Wt. Lost Moisture (g)	2.19
Wt. of Pan Only (g)	3.70
Wt. of Dry Soil (g)	63.17
Moisture Content %	3.5
Wt. Hydrom. Sample Wet (g)	61.13
Wt. Hydrom. Sample Dry (g)	59.08

WASH SIEVE ANALYSIS

Wt. Total Sample Wet (g)	264.64
Weight of + #10 Before Washing (g)	6.43
Weight of + #10 After Washing (g)	3.61
Weight of - #10 Wet (g)	258.21
Weight of - #10 Dry (g)	252.28
Wt. Total Sample Dry (g)	255.89
Calc. Wt. "W" (g)	59.93
Calc. Mass + #10	0.85

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0.00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	0.00	0.00	0.00	0.0	100.0
#4	0.00	0.15	0.15	0.15	0.1	99.9
#10	0.00	3.46	3.46	3.61	1.4	98.6
#20	2.36	4.79	2.43	2.43	5.5	94.5
#40	2.32	7.06	4.74	7.17	13.4	86.6
#60	2.37	9.17	6.80	13.97	24.7	75.3
#100	2.38	10.26	7.88	21.85	37.9	62.1
#200	2.35	9.55	7.20	29.05	49.9	50.1

Data entered by: RS  
Data checked by: SR  
FileName: QUH00160

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206978-Shaw-001	SAMPLED	6/25/04
DEPTH	7.6-8.6	DATE TESTED	7/13/04 DPM/AG
SAMPLE NO.	12b-021760	WASH SIEVE	Yes
SOIL DESCR.	Proj #2069650	DRY SIEVE	No
LOCATION	Maywood Fusrap		
Hydrometer #	ASTM 152 H	Temp., Deg. C	26.3
Sp. Gr. of Soil	2.65	Temp. Coef. K	0.01268
Value of "alpha"	1.00	Wt. Dry Sample "W"	59.929
Deflocculant	Sodium Hexametaphosphate	% of Total Sample	100.0
Defloc. Corr'n	4.8		
Meniscus Corr'n	-1.0		

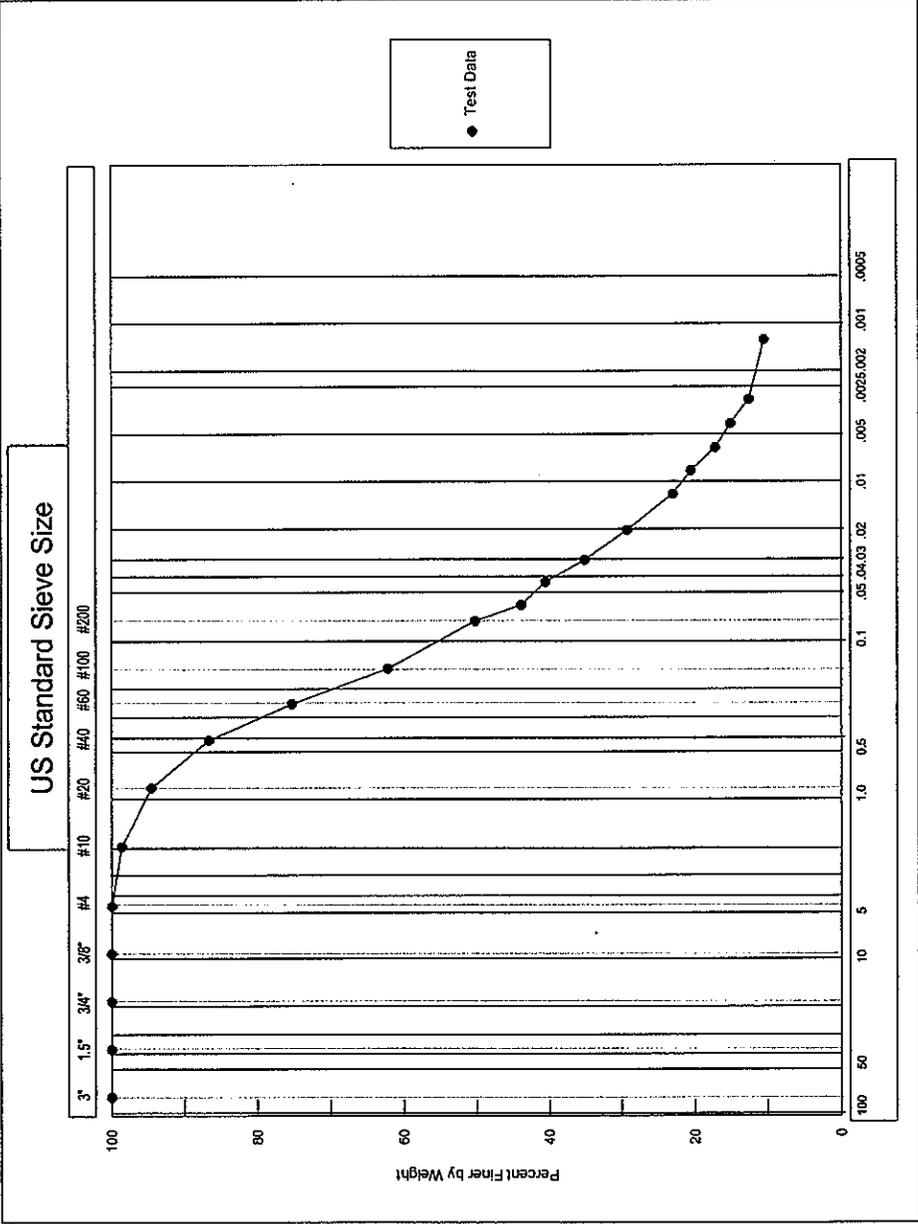
T	Hydrometer Reading		%	Effective	Grain
Elapsed Time (min)	Original	Corrected "R"	Total Sample	Depth L	Diameter (mm)
0.0	--	--	--	--	--
0.5	32.00	26.25	43.8	11.04	0.0596
1.0	30.00	24.25	40.5	11.37	0.0428
2.0	26.75	21.00	35.0	11.90	0.0309
5.0	23.25	17.50	29.2	12.48	0.0200
15.0	19.50	13.75	22.9	13.09	0.0118
30.0	18.00	12.25	20.4	13.34	0.0085
60.0	16.00	10.25	17.1	13.67	0.0061
120.0	14.75	9.00	15.0	13.87	0.0043
250.0	13.25	7.50	12.5	14.12	0.0030
1440.0	12.00	6.25	10.4	14.32	0.0013

Grain Diameter =  $K \cdot (\text{SQRT}(L/T))$

Data entered by: RS  
Data checked by: SR  
FileName: QUH00160

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.



COBBLES TO BOULDERS		GRAVEL		SAND			SILT OR CLAY		USCS
		COARSE	FINE	CRS	MEDIUM	FINE	SILT	CLAY	WENTWORTH
COBBLES TO BOULDERS		PEBBLE GRAVEL		SAND			SILT		CLAY
COARSE		MED	FINE	GRAN	COARSE	MED	FINE		

Client: STL-CT      Boring No.: 206978-Shaw-001      Sample No.: 12b-021760  
 Job Number: 2193-137      Depth: 7.6-8.6  
 Classification: **Classification Not Performed**      Advanced Terra Testing, Inc.

MECHANICAL ANALYSIS - SIEVE TEST DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206978-Shaw-009	SAMPLED	6/25/04
DEPTH	4.7-6.2	DATE TESTED	7/13/04 DPM/AG
SAMPLE NO.	12b-021811	WASH SIEVE	Yes
SOIL DESCR.	Proj #2069650	DRY SIEVE	No
LOCATION	Maywood Fusrap		

MOISTURE DATA

HYGROSCOPIC	Yes	
NATURAL	No	
Wt. Wet Soil & Pan (g)	70.67	
Wt. Dry Soil & Pan (g)	69.96	
Wt. Lost Moisture (g)	0.71	
Wt. of Pan Only (g)	3.67	
Wt. of Dry Soil (g)	66.29	
Moisture Content %	1.1	
Wt. Hydrom. Sample Wet (g)	57.48	
Wt. Hydrom. Sample Dry (g)	56.87	

WASH SIEVE ANALYSIS

Wt. Total Sample	
Wet (g)	268.74
Weight of + #10	
Before Washing (g)	14.33
After Washing (g)	10.59
Weight of - #10	
Wet (g)	254.41
Dry (g)	255.41
Wt. Total Sample	
Dry (g)	266.00
Calc. Wt. "W" (g)	59.23
Calc. Mass + #10	2.36

Sieve Number (Size)	Pan Weight (g)	Indiv. Wt. + Pan (g)	Indiv. Wt. Retain.	Cum. Wt. Retain.	Cum. % Retain.	% Finer By Wt.
3"	0.00	0.00	0.00	0.00	0.0	100.0
1 1/2"	0.00	0.00	0.00	0.00	0.0	100.0
3/4"	0.00	0.00	0.00	0.00	0.0	100.0
3/8"	0.00	0.00	0.00	0.00	0.0	100.0
#4	0.00	2.00	2.00	2.00	0.8	99.2
#10	0.00	8.59	8.59	10.59	4.0	96.0
#20	2.31	5.52	3.21	3.21	9.4	90.6
#40	2.37	8.22	5.85	9.06	19.3	80.7
#60	2.31	10.27	7.96	17.02	32.7	67.3
#100	2.37	13.67	11.30	28.32	51.8	48.2
#200	2.37	11.13	8.76	37.08	66.6	33.4

Data entered by: RS                      Date: 07/16/2004  
 Data checked by: SR                      Date: 7-16-04  
 FileName: QUH00911

ADVANCED TERRA TESTING, INC.

HYDROMETER ANALYSIS - SEDIMENTATION DATA  
ASTM D 422

CLIENT	STL-CT	JOB NO.	2193-137
BORING NO.	206978-Shaw-009	SAMPLED	6/25/04
DEPTH	4.7-6.2	DATE TESTED	7/13/04 DPM/AG
SAMPLE NO.	12b-021811	WASH SIEVE	Yes
SOIL DESCR.	Proj #2069650	DRY SIEVE	No
LOCATION	Maywood Fusrap		
Hydrometer #	ASTM 152 H	Temp., Deg. C	26.1
Sp. Gr. of Soil	2.65	Temp. Coef. K	0.01271
Value of "alpha"	1.00	Wt. Dry Sample "W"	59.228
Deflocculant	Sodium Hexametaphosphate	% of Total Sample	100.0
Defloc. Corr'n	4.8		
Meniscus Corr'n	-1.0		

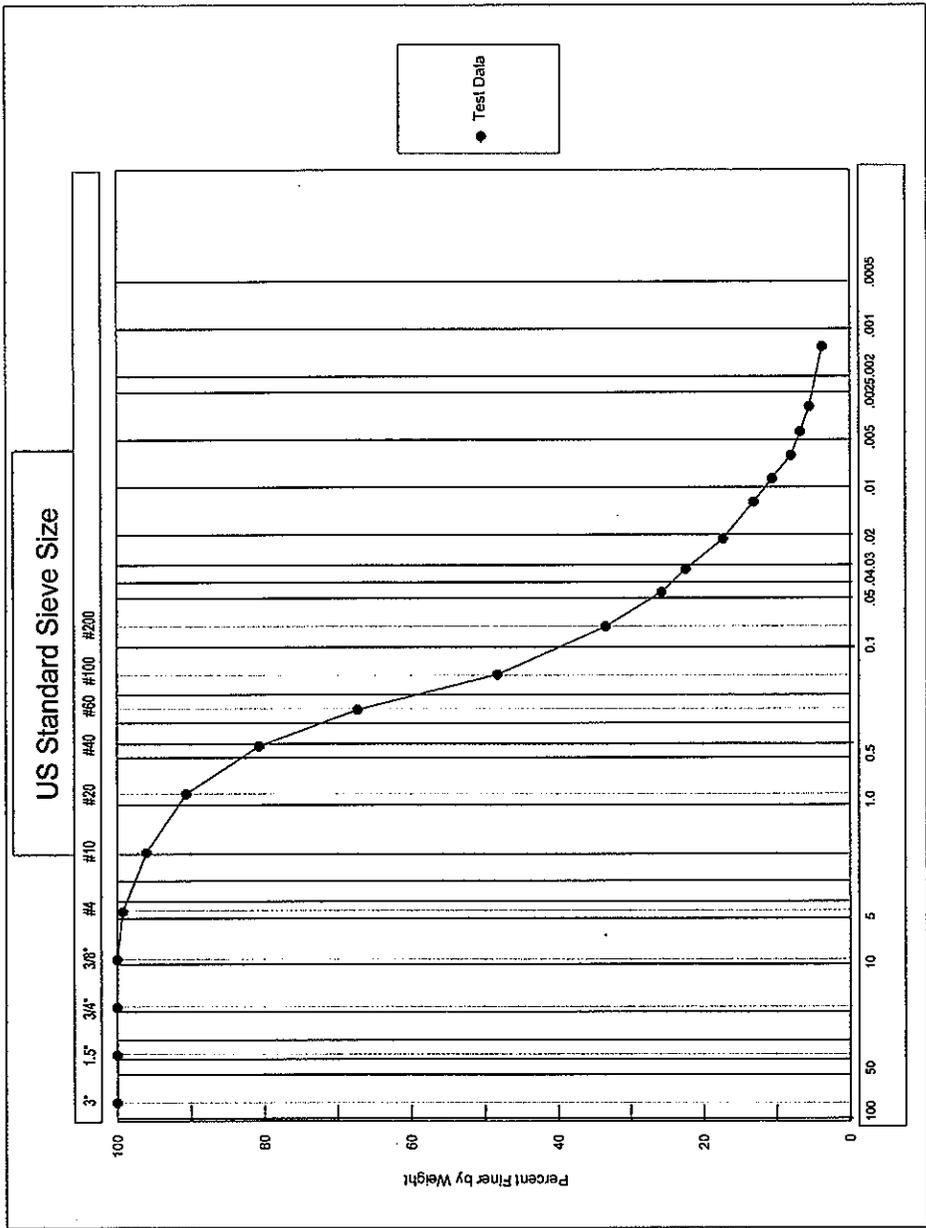
T Elapsed Time (min)	Hydrometer Reading Original	Corrected "R"	100Ra/W	% Total Sample	Effective Depth L	Grain Diameter (mm)
0.0	--	--	--	--	--	--
1.0	21.00	15.25	25.7	25.7	12.85	0.0455
2.0	19.00	13.25	22.4	22.4	13.17	0.0326
5.0	16.00	10.25	17.3	17.3	13.67	0.0210
15.0	13.50	7.75	13.1	13.1	14.08	0.0123
30.0	12.00	6.25	10.6	10.6	14.32	0.0088
60.0	10.50	4.75	8.0	8.0	14.57	0.0063
120.0	9.75	4.00	6.8	6.8	14.69	0.0044
250.0	9.00	3.25	5.5	5.5	14.81	0.0031
1440.0	8.00	2.25	3.8	3.8	14.98	0.0013

Grain Diameter = K\*(SQRT(L/T))

Data entered by: RS  
Data checked by: SR  
FileName: QUH00911

Date: 07/16/2004  
Date: 7-16-04

ADVANCED TERRA TESTING, INC.



USCS		WEIGHTWORTH	
COBBLES	GRAVEL	SAND	SILT OR CLAY
COARSE	FINE	CRS	FINE
COBBLES TO BOULDERS	PEBBLE GRAVEL	SAND	SILT CLAY
COARSE	MED FINE GRAN	COARSE MED FINE	SILT CLAY

Client: STL-CT      Boring No.: 206978-Shaw-009      Sample No.: 12b-021811  
 Job Number: 2193-137      Depth: 4.7-6.2  
 Classification: **Not Performed**      Advanced Terra Testing, Inc.



## **APPENDIX D SUMMARY OF ANALYTICAL RESULTS**

This page intentionally left blank.

## APPENDIX D TABLE OF CONTENTS

- 1) **Table D-1** Physical Parameter Results
  - Percent Moisture
  - Total Organic Carbon
  - pH
  
- 2) **Table D-2** SPLP Results
  - Antimony
  - Arsenic
  - Barium
  - Beryllium
  - Boron
  - Cadmium
  - Chromium (Total)
  - Copper
  - Lead
  - Lithium
  - Mercury
  - Nickel
  - Selenium
  - Thallium
  
- 3) **NJDEP Hazsite Deliverable** available on attached CD-ROM

This page intentionally left blank.

Table D-1  
 Physical Parameter Results

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date
A-1	12b-021745	Percent Moisture	10.3	0.1		Percent	13.4-15.4	6/21/2004
A-1	12b-021745	Total Organic Carbon	8250	111		mg/kg	13.4-15.4	6/21/2004
A-1	12b-021745	pH	7.98	0.2		pH Units	13.4-15.4	6/21/2004
A-2	12b-021746	Percent Moisture	21.3	0.1		Percent	6.3-7.1	6/22/2004
A-2	12b-021746	Total Organic Carbon	17900	127		mg/kg	6.3-7.1	6/22/2004
A-2	12b-021746	pH	7.49	0.2		pH Units	6.3-7.1	6/22/2004
A-3	12b-021747	Percent Moisture	13.6	0.1		Percent	6.3-8.3	6/21/2004
A-3	12b-021747	Total Organic Carbon	3730	116		mg/kg	6.3-8.3	6/21/2004
A-3	12b-021747	pH	6.97	0.2		pH Units	6.3-8.3	6/21/2004
A-4	12b-021748	Percent Moisture	18.3	0.1		Percent	9.4-10.4	6/23/2004
A-4	12b-021748	Total Organic Carbon	10500	122		mg/kg	9.4-10.4	6/23/2004
A-4	12b-021748	pH	7.38	0.2		pH Units	9.4-10.4	6/23/2004
A-5	12b-021749	Percent Moisture	22.1	0.1		Percent	10.4-11.4	6/23/2004
A-5	12b-021749	Total Organic Carbon	20800	128		mg/kg	10.4-11.4	6/23/2004
A-5	12b-021749	pH	7.29	0.2		pH Units	10.4-11.4	6/23/2004
A-6	12b-021750	Percent Moisture	33.3	0.1		Percent	5.9-7.9	6/25/2004
A-6	12b-021750	Total Organic Carbon	44100	150		mg/kg	5.9-7.9	6/25/2004
A-6	12b-021750	pH	6.9	0.2		pH Units	5.9-7.9	6/25/2004
A-7	12b-021799	Percent Moisture	47.4	0.1		Percent	9-11	6/21/2004
A-7	12b-021799	Total Organic Carbon	93800	190		mg/kg	9-11	6/21/2004
A-7	12b-021799	pH	8.7	0.2		pH Units	9-11	6/21/2004
A-8	12b-021814	Percent Moisture	14.2	0.1		Percent	11.2-12.4	6/25/2004
A-8	12b-021814	Total Organic Carbon	4850	117		mg/kg	11.2-12.4	6/25/2004
A-8	12b-021814	pH	7.34	0.2		pH Units	11.2-12.4	6/25/2004

Table D-1  
 Physical Parameter Results

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date:
B-1	12b-021751	Percent Moisture	11.9	0.1		Percent	12.4-13.4	6/23/2004
B-1	12b-021751	Total Organic Carbon	514	114		mg/kg	12.4-13.4	6/23/2004
B-1	12b-021751	pH	8.37	0.2		pH Units	12.4-13.4	6/23/2004
B-3	12b-021753	Percent Moisture	35.7	0.1		Percent	7.8-9	6/23/2004
B-3	12b-021753	Total Organic Carbon	30900	156		mg/kg	7.8-9	6/23/2004
B-3	12b-021753	pH	7.4	0.2		pH Units	7.8-9	6/23/2004
B-4	12b-021754	Percent Moisture	27.7	0.1		Percent	10-11.3	6/22/2004
B-4	12b-021754	Total Organic Carbon	29500	138		mg/kg	10-11.3	6/22/2004
B-4	12b-021754	pH	6.7	0.2		pH Units	10-11.3	6/22/2004
B-5	12b-021817	Percent Moisture	49.3	0.1		Percent	12.4-14.4	6/25/2004
B-5	12b-021817	Total Organic Carbon	6350	197		mg/kg	12.4-14.4	6/25/2004
B-5	12b-021817	pH	6.83	0.2		pH Units	12.4-14.4	6/25/2004
B-5	12b-021755	Percent Moisture	9.6	0.1		Percent	15.7-17.7	6/22/2004
B-5	12b-021755	Total Organic Carbon	589	111		mg/kg	15.7-17.7	6/22/2004
B-5	12b-021755	pH	7.48	0.2		pH Units	15.7-17.7	6/22/2004
B-6	12b-021756	Percent Moisture	37.3	0.1		Percent	7.8-8.8	6/22/2004
B-6	12b-021756	Total Organic Carbon	59800	159		mg/kg	7.8-8.8	6/22/2004
B-6	12b-021756	pH	7.61	0.2		pH Units	7.8-8.8	6/22/2004
B-7	12b-021752	Percent Moisture	58.3	0.1		Percent	8.1-9.1	6/23/2004
B-7	12b-021752	Total Organic Carbon	41100	240		mg/kg	8.1-9.1	6/23/2004
B-7	12b-021752	pH	7.26	0.2		pH Units	8.1-9.1	6/23/2004
C-1	12b-021757	Percent Moisture	13.6	0.1		Percent	10.2-11.2	6/24/2004
C-1	12b-021757	Total Organic Carbon	1940	116		mg/kg	10.2-11.2	6/24/2004
C-1	12b-021757	pH	8.29	0.2		pH Units	10.2-11.2	6/24/2004

Boring	S&W Lab Sample ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date:
C-2	12b-021758	Percent Moisture	13.4	0.1		Percent	8.6-10.6	6/24/2004
C-2	12b-021758	Total Organic Carbon	4540	115		mg/kg	8.6-10.6	6/24/2004
C-2	12b-021758	pH	7.55	0.2		pH Units	8.6-10.6	6/24/2004
C-3	12b-021759	Percent Moisture	15.3	0.1		Percent	9.6-10.6	6/24/2004
C-3	12b-021759	Total Organic Carbon	1470	118		mg/kg	9.6-10.6	6/24/2004
C-3	12b-021759	pH	8.11	0.2		pH Units	9.6-10.6	6/24/2004
C-5	12b-021761	Percent Moisture	13.5	0.1		Percent	8.6-9.6	6/24/2004
C-5	12b-021761	Total Organic Carbon	6540	116		mg/kg	8.6-9.6	6/24/2004
C-5	12b-021761	pH	8.18	0.2		pH Units	8.6-9.6	6/24/2004
C-6	12b-021762	Percent Moisture	13.9	0.1		Percent	12.6-13.6	6/24/2004
C-6	12b-021762	Total Organic Carbon	531	116		mg/kg	12.6-13.6	6/24/2004
C-6	12b-021762	pH	8.77	0.2		pH Units	12.6-13.6	6/24/2004
C-7	12b-021760	Percent Moisture	18.5	0.1		Percent	7.6-8.6	6/25/2004
C-7	12b-021760	Total Organic Carbon	15700	123		mg/kg	7.6-8.6	6/25/2004
C-7	12b-021760	pH	8.08	0.2		pH Units	7.6-8.6	6/25/2004
C-8	12b-021811	Percent Moisture	14.6	0.1		Percent	4.7-6.2	6/25/2004
C-8	12b-021811	Total Organic Carbon	12800	117		mg/kg	4.7-6.2	6/25/2004
C-8	12b-021811	pH	8.07	0.2		pH Units	4.7-6.2	6/25/2004

**Notes:**

mg/kg = Milligrams per Kilogram  
 ft bgs = Feet below ground surface

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
A-1	12b-021745	0	Antimony, Total	1.1	1.1	R	mg/kg	13.4-15.4	6/21/2004	ND
A-1	12b-021745	0	Antimony, SPLP Leachate	2	2	U	ug/L	13.4-15.4	6/21/2004	
A-1	12b-021763	1	Antimony, SPLP Leachate	2	2	U	ug/L	13.4-15.4	6/21/2004	
A-1	12b-021764	1	Antimony, SPLP Leachate	2	2	U	ug/L	13.4-15.4	6/21/2004	
A-2	12b-021746	0	Antimony, Total	1.4	1.4	R	mg/kg	6.3-7.1	6/22/2004	ND
A-2	12b-021746	0	Antimony, SPLP Leachate	2	2	U	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021766	1	Antimony, SPLP Leachate	2	2	U	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021765	1	Antimony, SPLP Leachate	2	2	U	ug/L	6.3-7.1	6/22/2004	
A-3	12b-021747	0	Antimony, Total	0.96	0.96	R	mg/kg	6.3-8.3	6/21/2004	ND
A-3	12b-021747	0	Antimony, SPLP Leachate	2	2	U	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021767	1	Antimony, SPLP Leachate	2	2	U	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021768	1	Antimony, SPLP Leachate	2	2	U	ug/L	6.3-8.3	6/21/2004	
A-4	12b-021748	0	Antimony, Total	1.4	1.4	UJ	mg/kg	9.4-10.4	6/23/2004	ND
A-4	12b-021748	0	Antimony, SPLP Leachate	2	2	U	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021769	1	Antimony, SPLP Leachate	4	4	U	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021770	1	Antimony, SPLP Leachate	4	4	U	ug/L	9.4-10.4	6/23/2004	
A-5	12b-021749	0	Antimony, Total	1.4	1.4	UJ	mg/kg	10.4-11.4	6/23/2004	ND
A-5	12b-021749	0	Antimony, SPLP Leachate	2	2	U	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021772	1	Antimony, SPLP Leachate	4	4	U	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021771	1	Antimony, SPLP Leachate	4	4	U	ug/L	10.4-11.4	6/23/2004	
A-6	12b-021750	0	Antimony, Total	1.4	1.4	UJ	mg/kg	5.9-7.9	6/25/2004	1.70
A-6	12b-021750	0	Antimony, SPLP Leachate	1.7	2	J	ug/L	5.9-7.9	6/25/2004	
A-6	12b-021773	1	Antimony, SPLP Leachate	4	4	U	ug/L	5.9-7.9	6/25/2004	
A-6	12b-021774	1	Antimony, SPLP Leachate	4	4	U	ug/L	5.9-7.9	6/25/2004	
A-7	12b-021799	0	Antimony, Total	2.1	2.1	R	mg/kg	9-11	6/21/2004	13.33
A-7	12b-021799	0	Antimony, SPLP Leachate	10.2	2		ug/L	9-11	6/21/2004	
A-7	12b-021800	1	Antimony, SPLP Leachate	15.4	2		ug/L	9-11	6/21/2004	
A-7	12b-021801	1	Antimony, SPLP Leachate	14.4	2		ug/L	9-11	6/21/2004	
A-8	12b-021814	0	Antimony, Total	1.3	1.3	UJ	mg/kg	11.2-12.4	6/25/2004	ND
A-8	12b-021814	0	Antimony, SPLP Leachate	2	2	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021816	1	Antimony, SPLP Leachate	4	4	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021815	1	Antimony, SPLP Leachate	4	4	U	ug/L	11.2-12.4	6/25/2004	

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
B-1	12b-021751	0	Antimony, Total	1.3	1.3	UJ	mg/kg	12.4-13.4	6/23/2004	ND
B-1	12b-021751	0	Antimony, SPLP Leachate	2	2	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021776	1	Antimony, SPLP Leachate	4	4	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021775	1	Antimony, SPLP Leachate	4	4	U	ug/L	12.4-13.4	6/23/2004	
B-3	12b-021753	0	Antimony, Total	1.5	1.5	UJ	mg/kg	7.8-9	6/23/2004	7.77
B-3	12b-021753	0	Antimony, SPLP Leachate	7.6	2	UJ	ug/L	7.8-9	6/23/2004	
B-3	12b-021780	1	Antimony, SPLP Leachate	6.5	4	U	ug/L	7.8-9	6/23/2004	
B-3	12b-021779	1	Antimony, SPLP Leachate	9.2	4	U	ug/L	7.8-9	6/23/2004	
B-4	12b-021754	0	Antimony, Total	1.4	1.4	R	mg/kg	10-11.3	6/22/2004	1.40
B-4	12b-021754	0	Antimony, SPLP Leachate	1.4	2	J	ug/L	10-11.3	6/22/2004	
B-4	12b-021781	1	Antimony, SPLP Leachate	2	2	U	ug/L	10-11.3	6/22/2004	
B-4	12b-021782	1	Antimony, SPLP Leachate	2	2	U	ug/L	10-11.3	6/22/2004	
B-5	12b-021817	0	Antimony, Total	1.8	1.8	UJ	mg/kg	12.4-14.4	6/25/2004	1.60
B-5	12b-021817	0	Antimony, SPLP Leachate	1.6	2	J	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021819	1	Antimony, SPLP Leachate	4	4	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021818	1	Antimony, SPLP Leachate	4	4	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021755	0	Antimony, Total	0.86	0.86	R	mg/kg	15.7-17.7	6/22/2004	ND
B-5	12b-021755	0	Antimony, SPLP Leachate	2	2	U	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021784	1	Antimony, SPLP Leachate	2	2	U	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021783	1	Antimony, SPLP Leachate	2	2	U	ug/L	15.7-17.7	6/22/2004	
B-6	12b-021756	0	Antimony, Total	1.6	1.6	R	mg/kg	7.8-8.8	6/22/2004	3.37
B-6	12b-021756	0	Antimony, SPLP Leachate	3.5	2	U	ug/L	7.8-8.8	6/22/2004	
B-6	12b-021765	1	Antimony, SPLP Leachate	3.5	2	U	ug/L	7.8-8.8	6/22/2004	
B-6	12b-021786	1	Antimony, SPLP Leachate	3.1	2	U	ug/L	7.8-8.8	6/22/2004	
B-7	12b-021752	0	Antimony, Total	2.1	2.1	UJ	mg/kg	8.1-9.1	6/23/2004	2.10
B-7	12b-021752	0	Antimony, SPLP Leachate	2.1	2	UJ	ug/L	8.1-9.1	6/23/2004	
B-7	12b-021777	1	Antimony, SPLP Leachate	4	4	U	ug/L	8.1-9.1	6/23/2004	
B-7	12b-021778	1	Antimony, SPLP Leachate	4	4	U	ug/L	8.1-9.1	6/23/2004	
C-1	12b-021757	0	Antimony, Total	1.2	1.2	UJ	mg/kg	10.2-11.2	6/24/2004	ND
C-1	12b-021757	0	Antimony, SPLP Leachate	2	2	U	ug/L	10.2-11.2	6/24/2004	
C-1	12b-021788	1	Antimony, SPLP Leachate	4	4	U	ug/L	10.2-11.2	6/24/2004	
C-1	12b-021787	1	Antimony, SPLP Leachate	4	4	U	ug/L	10.2-11.2	6/24/2004	

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
C-2	12b-021758	0	Antimony, Total	1.5	1.5	UJ	mg/kg	8.6-10.6	6/24/2004	ND
C-2	12b-021756	0	Antimony, SPLP Leachate	2	2	U	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021789	1	Antimony, SPLP Leachate	4	4	U	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021790	1	Antimony, SPLP Leachate	4	4	U	ug/L	8.6-10.6	6/24/2004	
C-3	12b-021759	0	Antimony, Total	1.2	1.2	UJ	mg/kg	9.6-10.6	6/24/2004	ND
C-3	12b-021759	0	Antimony, SPLP Leachate	2	2	U	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021792	1	Antimony, SPLP Leachate	4	4	U	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021791	1	Antimony, SPLP Leachate	4	4	U	ug/L	9.6-10.6	6/24/2004	
C-5	12b-021761	0	Antimony, Total	1.4	1.4	UJ	mg/kg	8.6-9.6	6/24/2004	ND
C-5	12b-021761	0	Antimony, SPLP Leachate	2	2	U	ug/L	8.6-9.6	6/24/2004	
C-5	12b-021796	1	Antimony, SPLP Leachate	4	4	U	ug/L	8.6-9.6	6/24/2004	
C-5	12b-021795	1	Antimony, SPLP Leachate	4	4	U	ug/L	8.6-9.6	6/24/2004	
C-6	12b-021762	0	Antimony, Total	1.1	1.1	UJ	mg/kg	12.6-13.6	6/24/2004	ND
C-6	12b-021762	0	Antimony, SPLP Leachate	2	2	U	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021797	1	Antimony, SPLP Leachate	4	4	U	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021798	1	Antimony, SPLP Leachate	4	4	U	ug/L	12.6-13.6	6/24/2004	
C-7	12b-021760	0	Antimony, Total	1.4	1.4	UJ	mg/kg	7.6-8.6	6/25/2004	ND
C-7	12b-021760	0	Antimony, SPLP Leachate	2	2	U	ug/L	7.6-8.6	6/25/2004	
C-7	12b-021793	1	Antimony, SPLP Leachate	4	4	U	ug/L	7.6-8.6	6/25/2004	
C-7	12b-021794	1	Antimony, SPLP Leachate	4	4	U	ug/L	7.6-8.6	6/25/2004	
C-8	12b-021811	0	Antimony, Total	1.3	1.3	UJ	mg/kg	4.7-6.2	6/25/2004	ND
C-8	12b-021811	0	Antimony, SPLP Leachate	2	2	U	ug/L	4.7-6.2	6/25/2004	
C-8	12b-021812	1	Antimony, SPLP Leachate	4	4	U	ug/L	4.7-6.2	6/25/2004	
C-8	12b-021813	1	Antimony, SPLP Leachate	4	4	U	ug/L	4.7-6.2	6/25/2004	

Notes

ug/L = Micrograms per Liter  
 mg/kg = Milligrams Per Kilogram  
 Sample Type ID = 0 denotes sample was analyzed for total and SPLP metals, soil pH, TOC, moisture content and grain size analysis  
 Sample Type ID = 1 denotes sample was analyzed for SPLP metals solely  
 U and ND = Non Detect  
 UJ = Estimated Non-Detect  
 J = Estimated Concentration  
 R = Rejected Data

Table D-2  
 Arsenic SPLP Results

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
A-1	12b-021745	0	Arsenic, Total	2.2	1.1		mg/kg	13.4-15.4	6/21/2004	1.11
A-1	12b-021745	0	Arsenic, SPLP Leachate	1.4	2		ug/L	13.4-15.4	6/21/2004	
A-1	12b-021763	1	Arsenic, SPLP Leachate	0.62	2	J	ug/L	13.4-15.4	6/21/2004	
A-1	12b-021764	1	Arsenic, SPLP Leachate	1.3	2		ug/L	13.4-15.4	6/21/2004	
A-2	12b-021746	0	Arsenic, Total	41.7	1.5		mg/kg	6.3-7.1	6/22/2004	12.03
A-2	12b-021746	0	Arsenic, SPLP Leachate	9.1	2		ug/L	6.3-7.1	6/22/2004	
A-2	12b-021766	1	Arsenic, SPLP Leachate	12.7	2		ug/L	6.3-7.1	6/22/2004	
A-2	12b-021765	1	Arsenic, SPLP Leachate	14.3	2		ug/L	6.3-7.1	6/22/2004	
A-3	12b-021747	0	Arsenic, Total	44.9	1		mg/kg	6.3-8.3	6/21/2004	70.17
A-3	12b-021747	0	Arsenic, SPLP Leachate	79.4	2		ug/L	6.3-8.3	6/21/2004	
A-3	12b-021767	1	Arsenic, SPLP Leachate	31.5	2		ug/L	6.3-8.3	6/21/2004	
A-3	12b-021768	1	Arsenic, SPLP Leachate	99.6	2		ug/L	6.3-8.3	6/21/2004	
A-4	12b-021748	0	Arsenic, Total	1.5	1.5	U	mg/kg	9.4-10.4	6/23/2004	1.40
A-4	12b-021748	0	Arsenic, SPLP Leachate	1.4	2		ug/L	9.4-10.4	6/23/2004	
A-4	12b-021769	1	Arsenic, SPLP Leachate	2	2	U	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021770	1	Arsenic, SPLP Leachate	2	2	U	ug/L	9.4-10.4	6/23/2004	
A-5	12b-021749	0	Arsenic, Total	13.6	1.5		mg/kg	10.4-11.4	6/23/2004	4.60
A-5	12b-021749	0	Arsenic, SPLP Leachate	3.2	2		ug/L	10.4-11.4	6/23/2004	
A-5	12b-021772	1	Arsenic, SPLP Leachate	5	2		ug/L	10.4-11.4	6/23/2004	
A-5	12b-021771	1	Arsenic, SPLP Leachate	5.6	2		ug/L	10.4-11.4	6/23/2004	
A-6	12b-021750	0	Arsenic, Total	122	1.5		mg/kg	5.9-7.9	6/25/2004	44.20
A-6	12b-021750	0	Arsenic, SPLP Leachate	37	2		ug/L	5.9-7.9	6/25/2004	
A-6	12b-021773	1	Arsenic, SPLP Leachate	48.8	2		ug/L	5.9-7.9	6/25/2004	
A-6	12b-021774	1	Arsenic, SPLP Leachate	46.8	2		ug/L	5.9-7.9	6/25/2004	
A-7	12b-021799	0	Arsenic, Total	292	2.3		mg/kg	9-11	6/21/2004	1003.33
A-7	12b-021799	0	Arsenic, SPLP Leachate	450	2		ug/L	9-11	6/21/2004	
A-7	12b-021800	1	Arsenic, SPLP Leachate	1250	2		ug/L	9-11	6/21/2004	
A-7	12b-021801	1	Arsenic, SPLP Leachate	1310	2		ug/L	9-11	6/21/2004	
A-8	12b-021814	0	Arsenic, Total	3.9	1.4		mg/kg	11.2-12.4	6/25/2004	1.10
A-8	12b-021814	0	Arsenic, SPLP Leachate	1.1	2	J	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021816	1	Arsenic, SPLP Leachate	2	2	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021815	1	Arsenic, SPLP Leachate	2	2	U	ug/L	11.2-12.4	6/25/2004	
B-1	12b-021751	0	Arsenic, Total	1.4	1.4	U	mg/kg	12.4-13.4	6/23/2004	ND
B-1	12b-021751	0	Arsenic, SPLP Leachate	2	2	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021776	1	Arsenic, SPLP Leachate	2	2	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021775	1	Arsenic, SPLP Leachate	2	2	U	ug/L	12.4-13.4	6/23/2004	
B-3	12b-021753	0	Arsenic, Total	53.7	1.6		mg/kg	7.8-9	6/23/2004	41.40
B-3	12b-021753	0	Arsenic, SPLP Leachate	39.7	2		ug/L	7.8-9	6/23/2004	
B-3	12b-021780	1	Arsenic, SPLP Leachate	42	2		ug/L	7.8-9	6/23/2004	
B-3	12b-021779	1	Arsenic, SPLP Leachate	42.5	2		ug/L	7.8-9	6/23/2004	

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
B-4	12b-021754	0	Arsenic, Total	4.2	1.5		mg/kg	10-11.3	6/22/2004	3.33
B-4	12b-021754	0	Arsenic, SPLP Leachate	3.5	2		ug/L	10-11.3	6/22/2004	
B-4	12b-021781	1	Arsenic, SPLP Leachate	2.5	2		ug/L	10-11.3	6/22/2004	
B-4	12b-021782	1	Arsenic, SPLP Leachate	4	2		ug/L	10-11.3	6/22/2004	
B-5	12b-021817	0	Arsenic, Total	9.8	2		mg/kg	12.4-14.4	6/25/2004	2.35
B-5	12b-021817	0	Arsenic, SPLP Leachate	2	2	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021819	1	Arsenic, SPLP Leachate	2.2	2		ug/L	12.4-14.4	6/25/2004	
B-5	12b-021818	1	Arsenic, SPLP Leachate	2.5	2		ug/L	12.4-14.4	6/25/2004	
B-5	12b-021755	0	Arsenic, Total	1.4	0.92	U	mg/kg	15.7-17.7	6/22/2004	0.83
B-5	12b-021755	0	Arsenic, SPLP Leachate	0.96	2	J	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021784	1	Arsenic, SPLP Leachate	0.65	2	J	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021783	1	Arsenic, SPLP Leachate	0.87	2	J	ug/L	15.7-17.7	6/22/2004	
B-6	12b-021756	0	Arsenic, Total	25	1.7		mg/kg	7.8-8.8	6/22/2004	4.13
B-6	12b-021756	0	Arsenic, SPLP Leachate	3	2		ug/L	7.8-8.8	6/22/2004	
B-6	12b-021785	1	Arsenic, SPLP Leachate	4.8	2		ug/L	7.8-8.8	6/22/2004	
B-6	12b-021786	1	Arsenic, SPLP Leachate	4.6	2		ug/L	7.8-8.8	6/22/2004	
B-7	12b-021752	0	Arsenic, Total	8.2	2.3		mg/kg	8.1-9.1	6/23/2004	0.79
B-7	12b-021752	0	Arsenic, SPLP Leachate	0.79	2		ug/L	8.1-9.1	6/23/2004	
B-7	12b-021777	1	Arsenic, SPLP Leachate	2	2	U	ug/L	8.1-9.1	6/23/2004	
B-7	12b-021778	1	Arsenic, SPLP Leachate	2	2	U	ug/L	8.1-9.1	6/23/2004	
C-1	12b-021757	0	Arsenic, Total	2.6	1.2		mg/kg	10.2-11.2	6/24/2004	3.13
C-1	12b-021757	0	Arsenic, SPLP Leachate	2.7	2		ug/L	10.2-11.2	6/24/2004	
C-1	12b-021788	1	Arsenic, SPLP Leachate	3.3	2		ug/L	10.2-11.2	6/24/2004	
C-1	12b-021787	1	Arsenic, SPLP Leachate	3.4	2		ug/L	10.2-11.2	6/24/2004	
C-2	12b-021758	0	Arsenic, Total	2.4	1.6		mg/kg	8.6-10.6	6/24/2004	0.63
C-2	12b-021758	0	Arsenic, SPLP Leachate	0.63	2	J	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021789	1	Arsenic, SPLP Leachate	2	2	U	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021790	1	Arsenic, SPLP Leachate	2	2	U	ug/L	8.6-10.6	6/24/2004	
C-3	12b-021759	0	Arsenic, Total	2.9	1.3		mg/kg	9.6-10.6	6/24/2004	0.88
C-3	12b-021759	0	Arsenic, SPLP Leachate	0.88	2	J	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021792	1	Arsenic, SPLP Leachate	2	2	U	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021791	1	Arsenic, SPLP Leachate	2	2	U	ug/L	9.6-10.6	6/24/2004	
C-5	12b-021761	0	Arsenic, Total	6.2	1.5		mg/kg	8.6-9.6	6/24/2004	0.59
C-5	12b-021761	0	Arsenic, SPLP Leachate	0.59	2	J	ug/L	8.6-9.6	6/24/2004	
C-5	12b-021796	1	Arsenic, SPLP Leachate	2	2	U	ug/L	8.6-9.6	6/24/2004	
C-5	12b-021795	1	Arsenic, SPLP Leachate	2	2	U	ug/L	8.6-9.6	6/24/2004	
C-6	12b-021762	0	Arsenic, Total	2.7	1.2		mg/kg	12.6-13.6	6/24/2004	1.20
C-6	12b-021762	0	Arsenic, SPLP Leachate	1.2	2	J	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021797	1	Arsenic, SPLP Leachate	2	2	U	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021798	1	Arsenic, SPLP Leachate	2	2	U	ug/L	12.6-13.6	6/24/2004	

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
C-7	12b-021760	0	Arsenic, Total	1.5	1.5	U	mg/kg	7.6-8.6	6/25/2004	1.20
C-7	12b-021760	0	Arsenic, SPLP Leachate	2	2	U	ug/L	7.6-8.6	6/25/2004	
C-7	12b-021793	1	Arsenic, SPLP Leachate	2	2	U	ug/L	7.6-8.6	6/25/2004	
C-7	12b-021794	1	Arsenic, SPLP Leachate	1.2	2	J	ug/L	7.6-8.6	6/25/2004	
C-8	12b-021811	0	Arsenic, Total	3.9	1.3		mg/kg	4.7-6.2	6/25/2004	3.13
C-8	12b-021811	0	Arsenic, SPLP Leachate	3.3	2		ug/L	4.7-6.2	6/25/2004	
C-8	12b-021812	1	Arsenic, SPLP Leachate	3.3	2		ug/L	4.7-6.2	6/25/2004	
C-8	12b-021813	1	Arsenic, SPLP Leachate	2.8	2		ug/L	4.7-6.2	6/25/2004	

Notes

ug/L = Micrograms per Liter  
 mg/kg = Milligrams Per Kilogram  
 Sample Type ID = 0 denotes sample was analyzed for total and SPLP metals, soil pH, TOC, moisture content and grain size analysis  
 Sample Type ID = 1 denotes sample was analyzed for SPLP metals solely  
 U and ND = Non Detect  
 UJ = Estimated Non-Detect  
 J = Estimated Concentration

Table D-2  
 Barium SPLP Results

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft. bgs)	Collection Date	Average Leachate Concentration (ug/L)
A-1	12b-021745	0	Barium, Total	45.2	0.17	J	mg/kg	13.4-15.4	6/21/2004	70.75
A-1	12b-021745	0	Barium, SPLP Leachate	85.4	200	U	ug/L	13.4-15.4	6/21/2004	
A-1	12b-021763	1	Barium, SPLP Leachate	34.4	200	U	ug/L	13.4-15.4	6/21/2004	
A-1	12b-021764	1	Barium, SPLP Leachate	56.1	200	U	ug/L	13.4-15.4	6/21/2004	
A-2	12b-021746	0	Barium, Total	42.8	0.23	J	mg/kg	6.3-7.1	6/22/2004	47.90
A-2	12b-021746	0	Barium, SPLP Leachate	47.9	200	U	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021766	1	Barium, SPLP Leachate	33.6	200	U	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021765	1	Barium, SPLP Leachate	31.4	200	U	ug/L	6.3-7.1	6/22/2004	
A-3	12b-021747	0	Barium, Total	33.1	0.15	J	mg/kg	6.3-8.3	6/21/2004	ND
A-3	12b-021747	0	Barium, SPLP Leachate	20.2	200	U	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021767	1	Barium, SPLP Leachate	28.7	200	U	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021768	1	Barium, SPLP Leachate	30.8	200	U	ug/L	6.3-8.3	6/21/2004	
A-4	12b-021748	0	Barium, Total	25.9	0.22	J	mg/kg	9.4-10.4	6/23/2004	46.13
A-4	12b-021748	0	Barium, SPLP Leachate	37.6	200	U	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021769	1	Barium, SPLP Leachate	51.9	200	U	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021770	1	Barium, SPLP Leachate	48.9	200	U	ug/L	9.4-10.4	6/23/2004	
A-5	12b-021749	0	Barium, Total	47.4	0.23	J	mg/kg	10.4-11.4	6/23/2004	42.20
A-5	12b-021749	0	Barium, SPLP Leachate	64	200	U	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021772	1	Barium, SPLP Leachate	13.9	200	U	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021771	1	Barium, SPLP Leachate	48.7	200	U	ug/L	10.4-11.4	6/23/2004	
A-6	12b-021750	0	Barium, Total	21	0.23	J	mg/kg	5.9-7.9	6/25/2004	7.45
A-6	12b-021750	0	Barium, SPLP Leachate	7.1	200	U	ug/L	5.9-7.9	6/25/2004	
A-6	12b-021773	1	Barium, SPLP Leachate	7.3	200	U	ug/L	5.9-7.9	6/25/2004	
A-6	12b-021774	1	Barium, SPLP Leachate	7.6	200	U	ug/L	5.9-7.9	6/25/2004	
A-7	12b-021799	0	Barium, Total	92.9	0.34	J	mg/kg	9-11	6/21/2004	199.00
A-7	12b-021799	0	Barium, SPLP Leachate	198	200	U	ug/L	9-11	6/21/2004	
A-7	12b-021800	1	Barium, SPLP Leachate	243	1000	U	ug/L	9-11	6/21/2004	
A-7	12b-021801	1	Barium, SPLP Leachate	156	1000	U	ug/L	9-11	6/21/2004	
A-8	12b-021814	0	Barium, Total	30.7	0.2	J	mg/kg	11.2-12.4	6/25/2004	9.85
A-8	12b-021814	0	Barium, SPLP Leachate	14.8	200	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021816	1	Barium, SPLP Leachate	10.7	200	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021815	1	Barium, SPLP Leachate	9	200	U	ug/L	11.2-12.4	6/25/2004	
B-1	12b-021751	0	Barium, Total	108	0.21	J	mg/kg	12.4-13.4	6/23/2004	42.53
B-1	12b-021751	0	Barium, SPLP Leachate	47.3	200	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021776	1	Barium, SPLP Leachate	37.6	200	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021775	1	Barium, SPLP Leachate	42.7	200	U	ug/L	12.4-13.4	6/23/2004	
B-3	12b-021753	0	Barium, Total	30.8	0.24	J	mg/kg	7.8-9	6/23/2004	29.90
B-3	12b-021753	0	Barium, SPLP Leachate	29.9	200	U	ug/L	7.8-9	6/23/2004	
B-3	12b-021780	1	Barium, SPLP Leachate	6.5	200	U	ug/L	7.8-9	6/23/2004	
B-3	12b-021779	1	Barium, SPLP Leachate	6.2	200	U	ug/L	7.8-9	6/23/2004	

Table D-2  
 Barium SPLP Results

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
B-4	12b-021754	0	Barium, Total	103	0.22	J	mg/kg	10-11.3	6/22/2004	51.00
B-4	12b-021754	0	Barium, SPLP Leachate	30.6	200		ug/L	10-11.3	6/22/2004	
B-4	12b-021781	1	Barium, SPLP Leachate	55.6	200		ug/L	10-11.3	6/22/2004	
B-4	12b-021782	1	Barium, SPLP Leachate	66.8	200		ug/L	10-11.3	6/22/2004	
B-5	12b-021817	0	Barium, Total	243	0.29		mg/kg	12.4-14.4	6/25/2004	12.10
B-5	12b-021817	0	Barium, SPLP Leachate	12.7	200	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021819	1	Barium, SPLP Leachate	11.8	200		ug/L	12.4-14.4	6/25/2004	
B-5	12b-021818	1	Barium, SPLP Leachate	12.4	200		ug/L	12.4-14.4	6/25/2004	
B-5	12b-021755	0	Barium, Total	35.7	0.14	J	mg/kg	15.7-17.7	6/22/2004	41.17
B-5	12b-021755	0	Barium, SPLP Leachate	41	200		ug/L	15.7-17.7	6/22/2004	
B-5	12b-021784	1	Barium, SPLP Leachate	39.6	200		ug/L	15.7-17.7	6/22/2004	
B-5	12b-021783	1	Barium, SPLP Leachate	42.9	200		ug/L	15.7-17.7	6/22/2004	
B-6	12b-021756	0	Barium, Total	127	0.26	J	mg/kg	7.8-8.8	6/22/2004	55.60
B-6	12b-021756	0	Barium, SPLP Leachate	54.3	200		ug/L	7.8-8.8	6/22/2004	
B-6	12b-021785	1	Barium, SPLP Leachate	59.6	200		ug/L	7.8-8.8	6/22/2004	
B-6	12b-021786	1	Barium, SPLP Leachate	46.9	200		ug/L	7.8-8.8	6/22/2004	
B-7	12b-021752	0	Barium, Total	150	0.34		mg/kg	8.1-9.1	6/23/2004	28.20
B-7	12b-021752	0	Barium, SPLP Leachate	53.7	200		ug/L	8.1-9.1	6/23/2004	
B-7	12b-021777	1	Barium, SPLP Leachate	15.2	200		ug/L	8.1-9.1	6/23/2004	
B-7	12b-021778	1	Barium, SPLP Leachate	15.7	200		ug/L	8.1-9.1	6/23/2004	
C-1	12b-021757	0	Barium, Total	239	0.19		mg/kg	10.2-11.2	6/24/2004	165.43
C-1	12b-021757	0	Barium, SPLP Leachate	91.3	200		ug/L	10.2-11.2	6/24/2004	
C-1	12b-021788	1	Barium, SPLP Leachate	172	200		ug/L	10.2-11.2	6/24/2004	
C-1	12b-021787	1	Barium, SPLP Leachate	233	200		ug/L	10.2-11.2	6/24/2004	
C-2	12b-021758	0	Barium, Total	14.3	0.24		mg/kg	8.6-10.6	6/24/2004	44.80
C-2	12b-021758	0	Barium, SPLP Leachate	33.6	200	U	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021789	1	Barium, SPLP Leachate	30.4	200		ug/L	8.6-10.6	6/24/2004	
C-2	12b-021790	1	Barium, SPLP Leachate	59.2	200		ug/L	8.6-10.6	6/24/2004	
C-3	12b-021759	0	Barium, Total	142	0.2		mg/kg	9.6-10.6	6/24/2004	84.60
C-3	12b-021759	0	Barium, SPLP Leachate	26.5	200	U	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021792	1	Barium, SPLP Leachate	83.2	200		ug/L	9.6-10.6	6/24/2004	
C-3	12b-021791	1	Barium, SPLP Leachate	86	200		ug/L	9.6-10.6	6/24/2004	
C-5	12b-021761	0	Barium, Total	91.6	0.23		mg/kg	8.6-9.6	6/24/2004	56.53
C-5	12b-021761	0	Barium, SPLP Leachate	55.9	200		ug/L	8.6-9.6	6/24/2004	
C-5	12b-021796	1	Barium, SPLP Leachate	53.3	200		ug/L	8.6-9.6	6/24/2004	
C-5	12b-021795	1	Barium, SPLP Leachate	60.4	200		ug/L	8.6-9.6	6/24/2004	
C-6	12b-021762	0	Barium, Total	67	0.18		mg/kg	12.6-13.6	6/24/2004	44.13
C-6	12b-021762	0	Barium, SPLP Leachate	48	200		ug/L	12.6-13.6	6/24/2004	
C-6	12b-021797	1	Barium, SPLP Leachate	48.7	200	J	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021798	1	Barium, SPLP Leachate	35.7	200		ug/L	12.6-13.6	6/24/2004	

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
C-7	12b-021760	0	Barium, Total	255	0.23		mg/kg	7.6-8.6	6/25/2004	17.95
C-7	12b-021760	0	Barium, SPLP Leachate	21.4	200	U	ug/L	7.6-8.6	6/25/2004	
C-7	12b-021793	1	Barium, SPLP Leachate	16.7	200		ug/L	7.6-8.6	6/25/2004	
C-7	12b-021794	1	Barium, SPLP Leachate	19.2	200		ug/L	7.6-8.6	6/25/2004	
C-8	12b-021811	0	Barium, Total	28.1	0.2		mg/kg	4.7-6.2	6/25/2004	ND
C-8	12b-021811	0	Barium, SPLP Leachate	2.6	200	U	ug/L	4.7-6.2	6/25/2004	
C-8	12b-021812	1	Barium, SPLP Leachate	4.9	200	U	ug/L	4.7-6.2	6/25/2004	
C-8	12b-021813	1	Barium, SPLP Leachate	3.7	200	U	ug/L	4.7-6.2	6/25/2004	

Notes

ug/L = Micrograms per Liter  
 mg/kg = Milligrams Per Kilogram  
 Sample Type ID = 0 denotes sample was analyzed for total and SPLP metals, soil pH, TOC, moisture content and grain size analysis  
 Sample Type ID = 1 denotes sample was analyzed for SPLP metals solely  
 U and ND = Non Detect  
 UU = Estimated Non-Detect  
 J = Estimated Concentration

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
A-1	12b-021745	0	Beryllium, Total	0.47	0.47	U	mg/kg	13.4-15.4	6/21/2004	ND
A-1	12b-021745	0	Beryllium, SPLP Leachate	2	2	U	ug/L	13.4-15.4	6/21/2004	
A-1	12b-021763	1	Beryllium, SPLP Leachate	2	2	U	ug/L	13.4-15.4	6/21/2004	
A-1	12b-021764	1	Beryllium, SPLP Leachate	2	2	U	ug/L	13.4-15.4	6/21/2004	
A-2	12b-021746	0	Beryllium, Total	0.62	0.62	U	mg/kg	6.3-7.1	6/22/2004	ND
A-2	12b-021746	0	Beryllium, SPLP Leachate	2	2	U	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021766	1	Beryllium, SPLP Leachate	2	2	U	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021765	1	Beryllium, SPLP Leachate	2	2	U	ug/L	6.3-7.1	6/22/2004	
A-3	12b-021747	0	Beryllium, Total	0.42	0.42	U	mg/kg	6.3-8.3	6/21/2004	ND
A-3	12b-021747	0	Beryllium, SPLP Leachate	2	2	U	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021767	1	Beryllium, SPLP Leachate	2	2	U	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021768	1	Beryllium, SPLP Leachate	2	2	U	ug/L	6.3-8.3	6/21/2004	
A-4	12b-021748	0	Beryllium, Total	0.6	0.6	U	mg/kg	9.4-10.4	6/23/2004	ND
A-4	12b-021748	0	Beryllium, SPLP Leachate	2	2	U	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021769	1	Beryllium, SPLP Leachate	2	2	U	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021770	1	Beryllium, SPLP Leachate	2	2	U	ug/L	9.4-10.4	6/23/2004	
A-5	12b-021749	0	Beryllium, Total	0.63	0.63	U	mg/kg	10.4-11.4	6/23/2004	ND
A-5	12b-021749	0	Beryllium, SPLP Leachate	2	2	U	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021772	1	Beryllium, SPLP Leachate	2	2	U	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021771	1	Beryllium, SPLP Leachate	2	2	U	ug/L	10.4-11.4	6/23/2004	
A-6	12b-021750	0	Beryllium, Total	0.62	0.62	U	mg/kg	5.9-7.9	6/25/2004	ND
A-6	12b-021750	0	Beryllium, SPLP Leachate	2	2	U	ug/L	5.9-7.9	6/25/2004	
A-6	12b-021773	1	Beryllium, SPLP Leachate	2	2	U	ug/L	5.9-7.9	6/25/2004	
A-6	12b-021774	1	Beryllium, SPLP Leachate	2	2	U	ug/L	5.9-7.9	6/25/2004	
A-7	12b-021799	0	Beryllium, Total	0.94	0.94	U	mg/kg	9-11	6/21/2004	ND
A-7	12b-021799	0	Beryllium, SPLP Leachate	2	2	U	ug/L	9-11	6/21/2004	
A-7	12b-021800	1	Beryllium, SPLP Leachate	2	2	U	ug/L	9-11	6/21/2004	
A-7	12b-021801	1	Beryllium, SPLP Leachate	2	2	U	ug/L	9-11	6/21/2004	
A-8	12b-021814	0	Beryllium, Total	0.56	0.56	U	mg/kg	11.2-12.4	6/25/2004	ND
A-8	12b-021814	0	Beryllium, SPLP Leachate	2	2	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021816	1	Beryllium, SPLP Leachate	2	2	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021815	1	Beryllium, SPLP Leachate	2	2	U	ug/L	11.2-12.4	6/25/2004	
B-1	12b-021751	0	Beryllium, Total	0.56	0.56	U	mg/kg	12.4-13.4	6/23/2004	ND
B-1	12b-021751	0	Beryllium, SPLP Leachate	2	2	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021776	1	Beryllium, SPLP Leachate	2	2	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021775	1	Beryllium, SPLP Leachate	2	2	U	ug/L	12.4-13.4	6/23/2004	
B-3	12b-021753	0	Beryllium, Total	1.5	0.66		mg/kg	7.8-9	6/23/2004	ND
B-3	12b-021753	0	Beryllium, SPLP Leachate	2	2	U	ug/L	7.8-9	6/23/2004	
B-3	12b-021780	1	Beryllium, SPLP Leachate	2	2	U	ug/L	7.8-9	6/23/2004	
B-3	12b-021779	1	Beryllium, SPLP Leachate	2	2	U	ug/L	7.8-9	6/23/2004	

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
B-4	12b-021754	0	Beryllium, Total	0.61	0.61	U	mg/kg	10-11.3	6/22/2004	ND
B-4	12b-021754	0	Beryllium, SPLP Leachate	2	2	U	ug/L	10-11.3	6/22/2004	
B-4	12b-021781	1	Beryllium, SPLP Leachate	2	2	U	ug/L	10-11.3	6/22/2004	
B-4	12b-021782	1	Beryllium, SPLP Leachate	2	2	U	ug/L	10-11.3	6/22/2004	
B-5	12b-021817	0	Beryllium, Total	6.3	0.8		mg/kg	12.4-14.4	6/25/2004	ND
B-5	12b-021817	0	Beryllium, SPLP Leachate	2	2	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021819	1	Beryllium, SPLP Leachate	2	2	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021818	1	Beryllium, SPLP Leachate	2	2	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021755	0	Beryllium, Total	0.38	0.38	U	mg/kg	15.7-17.7	6/22/2004	ND
B-5	12b-021755	0	Beryllium, SPLP Leachate	2	2	U	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021784	1	Beryllium, SPLP Leachate	2	2	U	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021783	1	Beryllium, SPLP Leachate	2	2	U	ug/L	15.7-17.7	6/22/2004	
B-6	12b-021756	0	Beryllium, Total	1.8	0.71		mg/kg	7.8-8.8	6/22/2004	2.00
B-6	12b-021756	0	Beryllium, SPLP Leachate	2	2		ug/L	7.8-8.8	6/22/2004	
B-6	12b-021785	1	Beryllium, SPLP Leachate	2	2	U	ug/L	7.8-8.8	6/22/2004	
B-6	12b-021786	1	Beryllium, SPLP Leachate	2	2	U	ug/L	7.8-8.8	6/22/2004	
B-7	12b-021752	0	Beryllium, Total	3.1	0.94		mg/kg	8.1-9.1	6/23/2004	ND
B-7	12b-021752	0	Beryllium, SPLP Leachate	2	2	U	ug/L	8.1-9.1	6/23/2004	
B-7	12b-021777	1	Beryllium, SPLP Leachate	2	2	U	ug/L	8.1-9.1	6/23/2004	
B-7	12b-021778	1	Beryllium, SPLP Leachate	2	2	U	ug/L	8.1-9.1	6/23/2004	
C-1	12b-021757	0	Beryllium, Total	0.51	0.51	U	mg/kg	10.2-11.2	6/24/2004	ND
C-1	12b-021757	0	Beryllium, SPLP Leachate	2	2	U	ug/L	10.2-11.2	6/24/2004	
C-1	12b-021788	1	Beryllium, SPLP Leachate	2	2	U	ug/L	10.2-11.2	6/24/2004	
C-1	12b-021787	1	Beryllium, SPLP Leachate	2	2	U	ug/L	10.2-11.2	6/24/2004	
C-2	12b-021758	0	Beryllium, Total	0.65	0.65	U	mg/kg	8.6-10.6	6/24/2004	ND
C-2	12b-021758	0	Beryllium, SPLP Leachate	2	2	U	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021789	1	Beryllium, SPLP Leachate	2	2	U	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021790	1	Beryllium, SPLP Leachate	2	2	U	ug/L	8.6-10.6	6/24/2004	
C-3	12b-021759	0	Beryllium, Total	0.55	0.55	U	mg/kg	9.6-10.6	6/24/2004	ND
C-3	12b-021759	0	Beryllium, SPLP Leachate	2	2	U	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021792	1	Beryllium, SPLP Leachate	2	2	U	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021791	1	Beryllium, SPLP Leachate	2	2	U	ug/L	9.6-10.6	6/24/2004	
C-5	12b-021761	0	Beryllium, Total	0.61	0.61	U	mg/kg	8.6-9.6	6/24/2004	ND
C-5	12b-021761	0	Beryllium, SPLP Leachate	2	2	U	ug/L	8.6-9.6	6/24/2004	
C-5	12b-021796	1	Beryllium, SPLP Leachate	2	2	U	ug/L	8.6-9.6	6/24/2004	
C-5	12b-021795	1	Beryllium, SPLP Leachate	2	2	U	ug/L	8.6-9.6	6/24/2004	
C-6	12b-021762	0	Beryllium, Total	0.48	0.48	U	mg/kg	12.6-13.6	6/24/2004	ND
C-6	12b-021762	0	Beryllium, SPLP Leachate	2	2	U	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021797	1	Beryllium, SPLP Leachate	2	2	U	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021798	1	Beryllium, SPLP Leachate	2	2	U	ug/L	12.6-13.6	6/24/2004	

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft lbs)	Collection Date	Average Leachate Concentration (ug/L)
C-7	12b-021760	0	Beryllium, Total	0.61	0.61	U	mg/kg	7.6-8.6	6/25/2004	ND
C-7	12b-021760	0	Beryllium, SPLP Leachate	2	2	U	ug/L	7.6-8.6	6/25/2004	
C-7	12b-021793	1	Beryllium, SPLP Leachate	2	2	U	ug/L	7.6-8.6	6/25/2004	
C-7	12b-021794	1	Beryllium, SPLP Leachate	2	2	U	ug/L	7.6-8.6	6/25/2004	
C-8	12b-021811	0	Beryllium, Total	0.55	0.55	U	mg/kg	4.7-6.2	6/25/2004	ND
C-8	12b-021811	0	Beryllium, SPLP Leachate	2	2	U	ug/L	4.7-6.2	6/25/2004	
C-8	12b-021812	1	Beryllium, SPLP Leachate	2	2	U	ug/L	4.7-6.2	6/25/2004	
C-8	12b-021813	1	Beryllium, SPLP Leachate	2	2	U	ug/L	4.7-6.2	6/25/2004	

Notes

- ug/L = Micrograms per Liter
- mg/kg = Milligrams Per Kilogram
- Sample Type ID = 0 denotes sample was analyzed for total and SPLP metals, soil pH, TOC, moisture content and grain size analysis
- Sample Type ID = 1 denotes sample was analyzed for SPLP metals solely
- U and ND = Non Detect
- UJ = Estimated Non-Detect
- J = Estimated Concentration

Table D-2  
Boron SPLP Results  
FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
A-1	12b-021745	0	Boron, Total	5.8	5800	U	mg/kg	13.4-15.4	6/21/2004	ND
A-1	12b-021745	0	Boron, SPLP Leachate	102	200	U	ug/L	13.4-15.4	6/21/2004	
A-1	12b-021763	1	Boron, SPLP Leachate	59.7	200	U	ug/L	13.4-15.4	6/21/2004	
A-1	12b-021764	1	Boron, SPLP Leachate	35	200	U	ug/L	13.4-15.4	6/21/2004	
A-2	12b-021746	0	Boron, Total	7.69	7690	U	mg/kg	6.3-7.1	6/22/2004	ND
A-2	12b-021746	0	Boron, SPLP Leachate	77.9	200	U	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021766	1	Boron, SPLP Leachate	64.4	200	U	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021765	1	Boron, SPLP Leachate	65.6	200	U	ug/L	6.3-7.1	6/22/2004	
A-3	12b-021747	0	Boron, Total	5.21	5210	U	mg/kg	6.3-8.3	6/21/2004	ND
A-3	12b-021747	0	Boron, SPLP Leachate	52.6	200	U	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021767	1	Boron, SPLP Leachate	51.3	200	U	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021768	1	Boron, SPLP Leachate	63.5	200	U	ug/L	6.3-8.3	6/21/2004	
A-4	12b-021748	0	Boron, Total	7.47	7470	U	mg/kg	9.4-10.4	6/23/2004	ND
A-4	12b-021748	0	Boron, SPLP Leachate	78.7	200	U	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021769	1	Boron, SPLP Leachate	91.3	200	U	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021770	1	Boron, SPLP Leachate	63.3	200	U	ug/L	9.4-10.4	6/23/2004	
A-5	12b-021749	0	Boron, Total	7.83	7830	U	mg/kg	10.4-11.4	6/23/2004	ND
A-5	12b-021749	0	Boron, SPLP Leachate	86.2	200	U	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021772	1	Boron, SPLP Leachate	77.4	200	U	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021771	1	Boron, SPLP Leachate	82.2	200	U	ug/L	10.4-11.4	6/23/2004	
A-6	12b-021750	0	Boron, Total	7.75	7750	U	mg/kg	5.9-7.9	6/25/2004	ND
A-6	12b-021750	0	Boron, SPLP Leachate	41.8	200	U	ug/L	5.9-7.9	6/25/2004	
A-6	12b-021773	1	Boron, SPLP Leachate	49.4	200	U	ug/L	5.9-7.9	6/25/2004	
A-6	12b-021774	1	Boron, SPLP Leachate	57.1	200	U	ug/L	5.9-7.9	6/25/2004	
A-7	12b-021799	0	Boron, Total	52	11600		mg/kg	9-11	6/21/2004	883.00
A-7	12b-021799	0	Boron, SPLP Leachate	935	200		ug/L	9-11	6/21/2004	
A-7	12b-021800	1	Boron, SPLP Leachate	891	1000		ug/L	9-11	6/21/2004	
A-7	12b-021801	1	Boron, SPLP Leachate	823	1000		ug/L	9-11	6/21/2004	
A-8	12b-021814	0	Boron, Total	6.9	6900	U	mg/kg	11.2-12.4	6/25/2004	ND
A-8	12b-021814	0	Boron, SPLP Leachate	31	200	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021816	1	Boron, SPLP Leachate	45.3	200	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021815	1	Boron, SPLP Leachate	58	200	U	ug/L	11.2-12.4	6/25/2004	
B-1	12b-021751	0	Boron, Total	6.93	6930	U	mg/kg	12.4-13.4	6/23/2004	ND
B-1	12b-021751	0	Boron, SPLP Leachate	39.1	200	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021776	1	Boron, SPLP Leachate	38.4	200	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021775	1	Boron, SPLP Leachate	37	200	U	ug/L	12.4-13.4	6/23/2004	
B-3	12b-021753	0	Boron, Total	10	8200	J	mg/kg	7.8-9	6/23/2004	ND
B-3	12b-021753	0	Boron, SPLP Leachate	62.5	200	U	ug/L	7.8-9	6/23/2004	
B-3	12b-021780	1	Boron, SPLP Leachate	77.2	200	U	ug/L	7.8-9	6/23/2004	
B-3	12b-021779	1	Boron, SPLP Leachate	82.8	200	U	ug/L	7.8-9	6/23/2004	
B-4	12b-021754	0	Boron, Total	7.55	7550	U	mg/kg	10-11.3	6/22/2004	ND

Table D-2  
 Boron SPLP Results

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
B-4	12b-021754	0	Boron, SPLP Leachate	94.9	200	U	ug/L	10-11.3	6/22/2004	
B-4	12b-021781	1	Boron, SPLP Leachate	102	200	U	ug/L	10-11.3	6/22/2004	
B-4	12b-021782	1	Boron, SPLP Leachate	84	200	U	ug/L	10-11.3	6/22/2004	
B-5	12b-021817	0	Boron, Total	9.93	9930	U	mg/kg	12.4-14.4	6/25/2004	ND
B-5	12b-021817	0	Boron, SPLP Leachate	41.4	200	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021819	1	Boron, SPLP Leachate	51.1	200	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021818	1	Boron, SPLP Leachate	53.2	200	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021755	0	Boron, Total	4.66	4660	U	mg/kg	15.7-17.7	6/22/2004	ND
B-5	12b-021755	0	Boron, SPLP Leachate	40	200	U	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021784	1	Boron, SPLP Leachate	40.4	200	U	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021783	1	Boron, SPLP Leachate	36.6	200	U	ug/L	15.7-17.7	6/22/2004	
B-6	12b-021756	0	Boron, Total	20.6	8770	U	mg/kg	7.8-8.8	6/22/2004	ND
B-6	12b-021756	0	Boron, SPLP Leachate	100	200	U	ug/L	7.8-8.8	6/22/2004	
B-6	12b-021785	1	Boron, SPLP Leachate	82.7	200	U	ug/L	7.8-8.8	6/22/2004	
B-6	12b-021786	1	Boron, SPLP Leachate	92.1	200	U	ug/L	7.8-8.8	6/22/2004	
B-7	12b-021752	0	Boron, Total	24.3	11600	U	mg/kg	8.1-9.1	6/23/2004	ND
B-7	12b-021752	0	Boron, SPLP Leachate	79	200	U	ug/L	8.1-9.1	6/23/2004	
B-7	12b-021777	1	Boron, SPLP Leachate	74.8	200	U	ug/L	8.1-9.1	6/23/2004	
B-7	12b-021778	1	Boron, SPLP Leachate	70.7	200	U	ug/L	8.1-9.1	6/23/2004	
C-1	12b-021757	0	Boron, Total	6.32	6320	U	mg/kg	10.2-11.2	6/24/2004	ND
C-1	12b-021757	0	Boron, SPLP Leachate	113	200	U	ug/L	10.2-11.2	6/24/2004	
C-1	12b-021788	1	Boron, SPLP Leachate	116	200	U	ug/L	10.2-11.2	6/24/2004	
C-1	12b-021787	1	Boron, SPLP Leachate	119	200	U	ug/L	10.2-11.2	6/24/2004	
C-2	12b-021758	0	Boron, Total	8.06	8060	U	mg/kg	8.6-10.6	6/24/2004	ND
C-2	12b-021758	0	Boron, SPLP Leachate	30.3	200	U	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021789	1	Boron, SPLP Leachate	48.8	200	U	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021790	1	Boron, SPLP Leachate	48.7	200	U	ug/L	8.6-10.6	6/24/2004	
C-3	12b-021759	0	Boron, Total	6.78	6780	U	mg/kg	9.6-10.6	6/24/2004	ND
C-3	12b-021759	0	Boron, SPLP Leachate	38.1	200	U	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021792	1	Boron, SPLP Leachate	64.7	200	U	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021791	1	Boron, SPLP Leachate	74.6	200	U	ug/L	9.6-10.6	6/24/2004	
C-5	12b-021761	0	Boron, Total	7.59	7590	U	mg/kg	8.6-9.6	6/24/2004	ND
C-5	12b-021761	0	Boron, SPLP Leachate	36.1	200	U	ug/L	8.6-9.6	6/24/2004	
C-5	12b-021796	1	Boron, SPLP Leachate	72.2	200	U	ug/L	8.6-9.6	6/24/2004	
C-5	12b-021795	1	Boron, SPLP Leachate	57.9	200	U	ug/L	8.6-9.6	6/24/2004	
C-6	12b-021762	0	Boron, Total	5.92	5920	U	mg/kg	12.6-13.6	6/24/2004	ND
C-6	12b-021762	0	Boron, SPLP Leachate	43.4	200	U	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021797	1	Boron, SPLP Leachate	46	200	U	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021798	1	Boron, SPLP Leachate	62.8	200	U	ug/L	12.6-13.6	6/24/2004	
C-7	12b-021760	0	Boron, Total	7.61	7610	U	mg/kg	7.6-8.6	6/25/2004	249.00
C-7	12b-021760	0	Boron, SPLP Leachate	249	200	U	ug/L	7.6-8.6	6/25/2004	

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
C-7	12b-021793	1	Boron, SPLP Leachate	237	200	U	ug/L	7.6-8.6	6/25/2004	
C-7	12b-021794	1	Boron, SPLP Leachate	278	200	U	ug/L	7.6-8.6	6/25/2004	
C-8	12b-021811	0	Boron, Total	6.82	6820	U	mg/kg	4.7-6.2	6/25/2004	ND
C-8	12b-021811	0	Boron, SPLP Leachate	33	200	U	ug/L	4.7-6.2	6/25/2004	
C-8	12b-021812	1	Boron, SPLP Leachate	63	200	U	ug/L	4.7-6.2	6/25/2004	
C-8	12b-021813	1	Boron, SPLP Leachate	58.3	200	U	ug/L	4.7-6.2	6/25/2004	

Notes

- ug/L = Micrograms per Liter
- ug/kg = Micrograms Per Kilogram
- Sample Type ID = 0 denotes sample was analyzed for total and SPLP metals, soil pH, TOC, moisture content and grain size analysis
- Sample Type ID = 1 denotes sample was analyzed for SPLP metals solely
- U and ND = Non Detect
- UU = Estimated Non-Detect
- J = Estimated Concentration

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
A-1	12b-021745	0	Cadmium, Total	0.94	0.94	U	mg/kg	13.4-15.4	6/21/2004	0.084
A-1	12b-021745	0	Cadmium, SPLP Leachate	0.084	4		ug/L	13.4-15.4	6/21/2004	
A-1	12b-021763	1	Cadmium, SPLP Leachate	4	4	U	ug/L	13.4-15.4	6/21/2004	
A-1	12b-021764	1	Cadmium, SPLP Leachate	4	4	U	ug/L	13.4-15.4	6/21/2004	
A-2	12b-021746	0	Cadmium, Total	1.2	1.2	U	mg/kg	6.3-7.1	6/22/2004	ND
A-2	12b-021746	0	Cadmium, SPLP Leachate	4	4	U	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021766	1	Cadmium, SPLP Leachate	4	4	U	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021765	1	Cadmium, SPLP Leachate	4	4	U	ug/L	6.3-7.1	6/22/2004	
A-3	12b-021747	0	Cadmium, Total	0.84	0.84	U	mg/kg	6.3-8.3	6/21/2004	ND
A-3	12b-021747	0	Cadmium, SPLP Leachate	4	4	U	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021767	1	Cadmium, SPLP Leachate	4	4	U	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021768	1	Cadmium, SPLP Leachate	4	4	U	ug/L	6.3-8.3	6/21/2004	
A-4	12b-021748	0	Cadmium, Total	1.2	1.2	U	mg/kg	9.4-10.4	6/23/2004	ND
A-4	12b-021748	0	Cadmium, SPLP Leachate	4	4	U	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021769	1	Cadmium, SPLP Leachate	4	4	U	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021770	1	Cadmium, SPLP Leachate	4	4	U	ug/L	9.4-10.4	6/23/2004	
A-5	12b-021749	0	Cadmium, Total	1.3	1.3	U	mg/kg	10.4-11.4	6/23/2004	ND
A-5	12b-021749	0	Cadmium, SPLP Leachate	4	4	U	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021772	1	Cadmium, SPLP Leachate	4	4	U	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021771	1	Cadmium, SPLP Leachate	4	4	U	ug/L	10.4-11.4	6/23/2004	
A-6	12b-021750	0	Cadmium, Total	1.2	1.2	U	mg/kg	5.9-7.9	6/25/2004	0.280
A-6	12b-021750	0	Cadmium, SPLP Leachate	0.44	4		ug/L	5.9-7.9	6/25/2004	
A-6	12b-021773	1	Cadmium, SPLP Leachate	0.23	4		ug/L	5.9-7.9	6/25/2004	
A-6	12b-021774	1	Cadmium, SPLP Leachate	0.17	4		ug/L	5.9-7.9	6/25/2004	
A-7	12b-021799	0	Cadmium, Total	1.9	1.9	U	mg/kg	9-11	6/21/2004	0.600
A-7	12b-021799	0	Cadmium, SPLP Leachate	0.29	4		ug/L	9-11	6/21/2004	
A-7	12b-021800	1	Cadmium, SPLP Leachate	0.81	4		ug/L	9-11	6/21/2004	
A-7	12b-021801	1	Cadmium, SPLP Leachate	0.7	4		ug/L	9-11	6/21/2004	
A-8	12b-021814	0	Cadmium, Total	1.1	1.1	U	mg/kg	11.2-12.4	6/25/2004	ND
A-8	12b-021814	0	Cadmium, SPLP Leachate	4	4	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021816	1	Cadmium, SPLP Leachate	4	4	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021815	1	Cadmium, SPLP Leachate	4	4	U	ug/L	11.2-12.4	6/25/2004	
B-1	12b-021751	0	Cadmium, Total	1.1	1.1	U	mg/kg	12.4-13.4	6/23/2004	ND
B-1	12b-021751	0	Cadmium, SPLP Leachate	4	4	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021776	1	Cadmium, SPLP Leachate	4	4	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021775	1	Cadmium, SPLP Leachate	4	4	U	ug/L	12.4-13.4	6/23/2004	
B-3	12b-021753	0	Cadmium, Total	1.3	1.3	U	mg/kg	7.8-9	6/23/2004	0.360
B-3	12b-021753	0	Cadmium, SPLP Leachate	0.48	4		ug/L	7.8-9	6/23/2004	
B-3	12b-021780	1	Cadmium, SPLP Leachate	0.3	4		ug/L	7.8-9	6/23/2004	
B-3	12b-021779	1	Cadmium, SPLP Leachate	0.3	4		ug/L	7.8-9	6/23/2004	
B-4	12b-021754	0	Cadmium, Total	1.2	1.2	U	mg/kg	10-11.3	6/22/2004	ND

Table D-2  
 Cadmium SPLP Results

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
B-4	12b-021754	0	Cadmium, SPLP Leachate	4	4	U	ug/L	10-11.3	6/22/2004	
B-4	12b-021781	1	Cadmium, SPLP Leachate	4	4	U	ug/L	10-11.3	6/22/2004	
B-4	12b-021782	1	Cadmium, SPLP Leachate	4	4	U	ug/L	10-11.3	6/22/2004	
B-5	12b-021817	0	Cadmium, Total	1.6	1.6	U	mg/kg	12.4-14.4	6/25/2004	ND
B-5	12b-021817	0	Cadmium, SPLP Leachate	4	4	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021819	1	Cadmium, SPLP Leachate	4	4	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021818	1	Cadmium, SPLP Leachate	4	4	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021755	0	Cadmium, Total	0.75	0.75	U	mg/kg	15.7-17.7	6/22/2004	ND
B-5	12b-021755	0	Cadmium, SPLP Leachate	4	4	U	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021784	1	Cadmium, SPLP Leachate	4	4	U	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021783	1	Cadmium, SPLP Leachate	4	4	U	ug/L	15.7-17.7	6/22/2004	
B-6	12b-021756	0	Cadmium, Total	1.4	1.4	U	mg/kg	7.8-8.8	6/22/2004	ND
B-6	12b-021756	0	Cadmium, SPLP Leachate	0.2	4	U	ug/L	7.8-8.8	6/22/2004	
B-6	12b-021785	1	Cadmium, SPLP Leachate	0.19	4	U	ug/L	7.8-8.8	6/22/2004	
B-6	12b-021786	1	Cadmium, SPLP Leachate	0.17	4	U	ug/L	7.8-8.8	6/22/2004	
B-7	12b-021752	0	Cadmium, Total	1.9	1.9	U	mg/kg	8.1-9.1	6/23/2004	ND
B-7	12b-021752	0	Cadmium, SPLP Leachate	4	4	U	ug/L	8.1-9.1	6/23/2004	
B-7	12b-021777	1	Cadmium, SPLP Leachate	4	4	U	ug/L	8.1-9.1	6/23/2004	
B-7	12b-021778	1	Cadmium, SPLP Leachate	4	4	U	ug/L	8.1-9.1	6/23/2004	
C-1	12b-021757	0	Cadmium, Total	1	1	U	mg/kg	10.2-11.2	6/24/2004	ND
C-1	12b-021757	0	Cadmium, SPLP Leachate	4	4	U	ug/L	10.2-11.2	6/24/2004	
C-1	12b-021788	1	Cadmium, SPLP Leachate	4	4	U	ug/L	10.2-11.2	6/24/2004	
C-1	12b-021787	1	Cadmium, SPLP Leachate	4	4	U	ug/L	10.2-11.2	6/24/2004	
C-2	12b-021758	0	Cadmium, Total	1.3	1.3	U	mg/kg	8.6-10.6	6/24/2004	ND
C-2	12b-021758	0	Cadmium, SPLP Leachate	4	4	U	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021789	1	Cadmium, SPLP Leachate	4	4	U	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021790	1	Cadmium, SPLP Leachate	4	4	U	ug/L	8.6-10.6	6/24/2004	
C-3	12b-021759	0	Cadmium, Total	1.1	1.1	U	mg/kg	9.6-10.6	6/24/2004	ND
C-3	12b-021759	0	Cadmium, SPLP Leachate	4	4	U	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021792	1	Cadmium, SPLP Leachate	4	4	U	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021791	1	Cadmium, SPLP Leachate	4	4	U	ug/L	9.6-10.6	6/24/2004	
C-5	12b-021761	0	Cadmium, Total	1.2	1.2	U	mg/kg	8.6-9.6	6/24/2004	ND
C-5	12b-021761	0	Cadmium, SPLP Leachate	4	4	U	ug/L	8.6-9.6	6/24/2004	
C-5	12b-021796	1	Cadmium, SPLP Leachate	4	4	U	ug/L	8.6-9.6	6/24/2004	
C-5	12b-021795	1	Cadmium, SPLP Leachate	4	4	U	ug/L	8.6-9.6	6/24/2004	
C-6	12b-021762	0	Cadmium, Total	0.96	0.96	U	mg/kg	12.6-13.6	6/24/2004	ND
C-6	12b-021762	0	Cadmium, SPLP Leachate	4	4	U	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021797	1	Cadmium, SPLP Leachate	4	4	U	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021798	1	Cadmium, SPLP Leachate	4	4	U	ug/L	12.6-13.6	6/24/2004	
C-7	12b-021760	0	Cadmium, Total	1.2	1.2	U	mg/kg	7.6-8.6	6/25/2004	ND
C-7	12b-021760	0	Cadmium, SPLP Leachate	4	4	U	ug/L	7.6-8.6	6/25/2004	

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
C-7	12b-021793	1	Cadmium, SPLP Leachate	4	4	U	ug/L	7.6-8.6	6/25/2004	
C-7	12b-021794	1	Cadmium, SPLP Leachate	4	4	U	ug/L	7.6-8.6	6/25/2004	
C-8	12b-021811	0	Cadmium, Total	1.1	1.1	U	mg/kg	4.7-6.2	6/25/2004	ND
C-8	12b-021811	0	Cadmium, SPLP Leachate	4	4	U	ug/L	4.7-6.2	6/25/2004	
C-8	12b-021812	1	Cadmium, SPLP Leachate	4	4	U	ug/L	4.7-6.2	6/25/2004	
C-8	12b-021813	1	Cadmium, SPLP Leachate	4	4	U	ug/L	4.7-6.2	6/25/2004	

Notes

- ug/L = Micrograms per Liter
- mg/kg = Milligrams Per Kilogram
- Sample Type ID = 0 denotes sample was analyzed for total and SPLP metals, soil pH, TOC, moisture content and grain size analysis
- Sample Type ID = 1 denotes sample was analyzed for SPLP metals solely
- U and ND = Non Detect
- UJ = Estimated Non-Detect
- J = Estimated Concentration

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
A-1	12b-021745	0	Chromium, Total	242	0.32		mg/kg	13.4-15.4	6/21/2004	52.30
A-1	12b-021745	0	Chromium, SPLP Leachate	114	10		ug/L	13.4-15.4	6/21/2004	
A-1	12b-021763	1	Chromium, SPLP Leachate	19.3	10		ug/L	13.4-15.4	6/21/2004	
A-1	12b-021764	1	Chromium, SPLP Leachate	23.6	10		ug/L	13.4-15.4	6/21/2004	
A-2	12b-021746	0	Chromium, Total	9	0.42		mg/kg	6.3-7.1	6/22/2004	ND
A-2	12b-021746	0	Chromium, SPLP Leachate	1.1	10	U	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021766	1	Chromium, SPLP Leachate	10	10	U	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021765	1	Chromium, SPLP Leachate	10	10	U	ug/L	6.3-7.1	6/22/2004	
A-3	12b-021747	0	Chromium, Total	10	0.29		mg/kg	6.3-8.3	6/21/2004	ND
A-3	12b-021747	0	Chromium, SPLP Leachate	1.4	10	U	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021767	1	Chromium, SPLP Leachate	0.67	10	U	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021768	1	Chromium, SPLP Leachate	5	10	U	ug/L	6.3-8.3	6/21/2004	
A-4	12b-021748	0	Chromium, Total	7.6	0.41		mg/kg	9.4-10.4	6/23/2004	ND
A-4	12b-021748	0	Chromium, SPLP Leachate	2.5	10	U	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021769	1	Chromium, SPLP Leachate	1.9	10	U	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021770	1	Chromium, SPLP Leachate	0.92	10	U	ug/L	9.4-10.4	6/23/2004	
A-5	12b-021749	0	Chromium, Total	6.2	0.43		mg/kg	10.4-11.4	6/23/2004	ND
A-5	12b-021749	0	Chromium, SPLP Leachate	10	10	U	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021772	1	Chromium, SPLP Leachate	0.96	10	U	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021771	1	Chromium, SPLP Leachate	1.3	10	U	ug/L	10.4-11.4	6/23/2004	
A-6	12b-021750	0	Chromium, Total	230	0.42		mg/kg	5.9-7.9	6/25/2004	ND
A-6	12b-021750	0	Chromium, SPLP Leachate	10	10	U	ug/L	5.9-7.9	6/25/2004	
A-6	12b-021773	1	Chromium, SPLP Leachate	0.67	10	U	ug/L	5.9-7.9	6/25/2004	
A-6	12b-021774	1	Chromium, SPLP Leachate	0.78	10	U	ug/L	5.9-7.9	6/25/2004	
A-7	12b-021799	0	Chromium, Total	169	0.64		mg/kg	9-11	6/21/2004	298.67
A-7	12b-021799	0	Chromium, SPLP Leachate	213	10	U	ug/L	9-11	6/21/2004	
A-7	12b-021800	1	Chromium, SPLP Leachate	319	50	U	ug/L	9-11	6/21/2004	
A-7	12b-021801	1	Chromium, SPLP Leachate	364	50	U	ug/L	9-11	6/21/2004	
A-8	12b-021814	0	Chromium, Total	7.6	0.38		mg/kg	11.2-12.4	6/25/2004	ND
A-8	12b-021814	0	Chromium, SPLP Leachate	10	10	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021816	1	Chromium, SPLP Leachate	0.71	10	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021815	1	Chromium, SPLP Leachate	10	10	U	ug/L	11.2-12.4	6/25/2004	
B-1	12b-021751	0	Chromium, Total	9	0.38		mg/kg	12.4-13.4	6/23/2004	ND
B-1	12b-021751	0	Chromium, SPLP Leachate	10	10	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021776	1	Chromium, SPLP Leachate	10	10	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021775	1	Chromium, SPLP Leachate	0.68	10	U	ug/L	12.4-13.4	6/23/2004	
B-3	12b-021753	0	Chromium, Total	8.6	0.45		mg/kg	7.8-9	6/23/2004	ND
B-3	12b-021753	0	Chromium, SPLP Leachate	10	10	U	ug/L	7.8-9	6/23/2004	
B-3	12b-021780	1	Chromium, SPLP Leachate	10	10	U	ug/L	7.8-9	6/23/2004	
B-3	12b-021779	1	Chromium, SPLP Leachate	0.62	10	U	ug/L	7.8-9	6/23/2004	
B-4	12b-021754	0	Chromium, Total	10.5	0.41		mg/kg	10-11.3	6/22/2004	ND

Table D-2  
Chromium SPLP Results

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
B-4	12b-021754	0	Chromium, SPLP Leachate	10	10	U	ug/L	10-11.3	6/22/2004	
B-4	12b-021781	1	Chromium, SPLP Leachate	3.2	10	U	ug/L	10-11.3	6/22/2004	
B-4	12b-021782	1	Chromium, SPLP Leachate	10	10	U	ug/L	10-11.3	6/22/2004	
B-5	12b-021817	0	Chromium, Total	18.4	0.54	J	mg/kg	12.4-14.4	6/25/2004	ND
B-5	12b-021817	0	Chromium, SPLP Leachate	10	10	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021819	1	Chromium, SPLP Leachate	10	10	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021818	1	Chromium, SPLP Leachate	10	10	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021755	0	Chromium, Total	9.5	0.26	J	mg/kg	15.7-17.7	6/22/2004	ND
B-5	12b-021755	0	Chromium, SPLP Leachate	10	10	U	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021784	1	Chromium, SPLP Leachate	1.9	10	U	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021783	1	Chromium, SPLP Leachate	1	10	U	ug/L	15.7-17.7	6/22/2004	
B-6	12b-021756	0	Chromium, Total	26.4	0.48	J	mg/kg	7.8-8.8	6/22/2004	ND
B-6	12b-021756	0	Chromium, SPLP Leachate	10	10	U	ug/L	7.8-8.8	6/22/2004	
B-6	12b-021785	1	Chromium, SPLP Leachate	10	10	U	ug/L	7.8-8.8	6/22/2004	
B-6	12b-021786	1	Chromium, SPLP Leachate	10	10	U	ug/L	7.8-8.8	6/22/2004	
B-7	12b-021752	0	Chromium, Total	152	0.64	J	mg/kg	8.1-9.1	6/23/2004	ND
B-7	12b-021752	0	Chromium, SPLP Leachate	0.73	10	U	ug/L	8.1-9.1	6/23/2004	
B-7	12b-021777	1	Chromium, SPLP Leachate	10	10	U	ug/L	8.1-9.1	6/23/2004	
B-7	12b-021778	1	Chromium, SPLP Leachate	1.1	10	U	ug/L	8.1-9.1	6/23/2004	
C-1	12b-021757	0	Chromium, Total	14.8	0.35	J	mg/kg	10.2-11.2	6/24/2004	12.80
C-1	12b-021757	0	Chromium, SPLP Leachate	2.6	10	U	ug/L	10.2-11.2	6/24/2004	
C-1	12b-021788	1	Chromium, SPLP Leachate	12	10	U	ug/L	10.2-11.2	6/24/2004	
C-1	12b-021787	1	Chromium, SPLP Leachate	13.6	10	U	ug/L	10.2-11.2	6/24/2004	
C-2	12b-021758	0	Chromium, Total	9.4	0.44	J	mg/kg	8.6-10.6	6/24/2004	ND
C-2	12b-021758	0	Chromium, SPLP Leachate	10	10	U	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021789	1	Chromium, SPLP Leachate	10	10	U	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021790	1	Chromium, SPLP Leachate	1.8	10	U	ug/L	8.6-10.6	6/24/2004	
C-3	12b-021759	0	Chromium, Total	16.1	0.37	J	mg/kg	9.6-10.6	6/24/2004	ND
C-3	12b-021759	0	Chromium, SPLP Leachate	10	10	U	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021792	1	Chromium, SPLP Leachate	1.2	10	U	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021791	1	Chromium, SPLP Leachate	1.4	10	U	ug/L	9.6-10.6	6/24/2004	
C-5	12b-021761	0	Chromium, Total	56.4	0.42	J	mg/kg	8.6-9.6	6/24/2004	5.20
C-5	12b-021761	0	Chromium, SPLP Leachate	1.3	10	U	ug/L	8.6-9.6	6/24/2004	
C-5	12b-021796	1	Chromium, SPLP Leachate	5.2	10	U	ug/L	8.6-9.6	6/24/2004	
C-5	12b-021795	1	Chromium, SPLP Leachate	1.5	10	U	ug/L	8.6-9.6	6/24/2004	
C-6	12b-021762	0	Chromium, Total	8.1	0.32	J	mg/kg	12.6-13.6	6/24/2004	ND
C-6	12b-021762	0	Chromium, SPLP Leachate	10	10	U	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021797	1	Chromium, SPLP Leachate	10	10	U	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021798	1	Chromium, SPLP Leachate	10	10	U	ug/L	12.6-13.6	6/24/2004	
C-7	12b-021760	0	Chromium, Total	11.8	0.42	J	mg/kg	7.6-8.6	6/25/2004	ND
C-7	12b-021760	0	Chromium, SPLP Leachate	10	10	U	ug/L	7.6-8.6	6/25/2004	

FUSRAP Maywood Superfund Site, Maywood, NJ

Boxing	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
C-7	12b-021793	1	Chromium, SPLP Leachate	2	10	U	ug/L	7.6-8.6	6/25/2004	
C-7	12b-021794	1	Chromium, SPLP Leachate	2.9	10	U	ug/L	7.6-8.6	6/25/2004	
C-8	12b-021811	0	Chromium, Total	12.8	0.37	J	mg/kg	4.7-6.2	6/25/2004	ND
C-8	12b-021811	0	Chromium, SPLP Leachate	10	10	U	ug/L	4.7-6.2	6/25/2004	
C-8	12b-021812	1	Chromium, SPLP Leachate	1.2	10	U	ug/L	4.7-6.2	6/25/2004	
C-8	12b-021813	1	Chromium, SPLP Leachate	1.3	10	U	ug/L	4.7-6.2	6/25/2004	

Notes

- ug/L = Micrograms per Liter
- mg/kg = Milligrams Per Kilogram
- Sample Type ID = 0 denotes sample was analyzed for total and SPLP metals, soil pH, TOC, moisture content and grain size analysis
- Sample Type ID = 1 denotes sample was analyzed for SPLP metals solely
- U and ND = Non Detect
- UJ = Estimated Non-Detect
- Estimated Concentration

Table D-2  
 Copper SPLP Results

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
A-1	12b-021745	0	Copper, Total	15.3	0.75	J	mg/kg	13.4-15.4	6/21/2004	4.60
A-1	12b-021745	0	Copper, SPLP Leachate	4.7	25		ug/L	13.4-15.4	6/21/2004	
A-1	12b-021763	1	Copper, SPLP Leachate	25	25	U	ug/L	13.4-15.4	6/21/2004	
A-1	12b-021764	1	Copper, SPLP Leachate	4.5	25		ug/L	13.4-15.4	6/21/2004	
A-2	12b-021746	0	Copper, Total	7.1	0.99	J	mg/kg	6.3-7.1	6/22/2004	ND
A-2	12b-021746	0	Copper, SPLP Leachate	25	25	U	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021766	1	Copper, SPLP Leachate	25	25	U	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021765	1	Copper, SPLP Leachate	25	25	U	ug/L	6.3-7.1	6/22/2004	
A-3	12b-021747	0	Copper, Total	6.5	0.67	J	mg/kg	6.3-8.3	6/21/2004	42.70
A-3	12b-021747	0	Copper, SPLP Leachate	83.1	25		ug/L	6.3-8.3	6/21/2004	
A-3	12b-021767	1	Copper, SPLP Leachate	25	25	U	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021768	1	Copper, SPLP Leachate	2.3	25	J	ug/L	6.3-8.3	6/21/2004	
A-4	12b-021748	0	Copper, Total	4.2	0.96		mg/kg	9.4-10.4	6/23/2004	4.55
A-4	12b-021748	0	Copper, SPLP Leachate	25	25	U	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021769	1	Copper, SPLP Leachate	5.7	25		ug/L	9.4-10.4	6/23/2004	
A-4	12b-021770	1	Copper, SPLP Leachate	3.4	25		ug/L	9.4-10.4	6/23/2004	
A-5	12b-021749	0	Copper, Total	5	1		mg/kg	10.4-11.4	6/23/2004	ND
A-5	12b-021749	0	Copper, SPLP Leachate	25	25	U	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021772	1	Copper, SPLP Leachate	25	25	U	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021771	1	Copper, SPLP Leachate	25	25	U	ug/L	10.4-11.4	6/23/2004	
A-6	12b-021750	0	Copper, Total	426	1		mg/kg	5.9-7.9	6/25/2004	14.70
A-6	12b-021750	0	Copper, SPLP Leachate	1.7	25	U	ug/L	5.9-7.9	6/25/2004	
A-6	12b-021773	1	Copper, SPLP Leachate	25	25	U	ug/L	5.9-7.9	6/25/2004	
A-6	12b-021774	1	Copper, SPLP Leachate	14.7	25		ug/L	5.9-7.9	6/25/2004	
A-7	12b-021799	0	Copper, Total	195	1.5	J	mg/kg	9-11	6/21/2004	271.67
A-7	12b-021799	0	Copper, SPLP Leachate	152	25		ug/L	9-11	6/21/2004	
A-7	12b-021800	1	Copper, SPLP Leachate	358	125		ug/L	9-11	6/21/2004	
A-7	12b-021801	1	Copper, SPLP Leachate	305	125		ug/L	9-11	6/21/2004	
A-8	12b-021814	0	Copper, Total	12.8	0.89		mg/kg	11.2-12.4	6/25/2004	ND
A-8	12b-021814	0	Copper, SPLP Leachate	25	25	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021816	1	Copper, SPLP Leachate	25	25	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021815	1	Copper, SPLP Leachate	25	25	U	ug/L	11.2-12.4	6/25/2004	
B-1	12b-021751	0	Copper, Total	5.6	0.89		mg/kg	12.4-13.4	6/23/2004	15.60
B-1	12b-021751	0	Copper, SPLP Leachate	25	25	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021776	1	Copper, SPLP Leachate	15.6	25		ug/L	12.4-13.4	6/23/2004	
B-1	12b-021775	1	Copper, SPLP Leachate	25	25	U	ug/L	12.4-13.4	6/23/2004	
B-3	12b-021763	0	Copper, Total	69.4	1.1		mg/kg	7.8-9	6/23/2004	1.40
B-3	12b-021753	0	Copper, SPLP Leachate	1.3	25	UJ	ug/L	7.8-9	6/23/2004	
B-3	12b-021780	1	Copper, SPLP Leachate	1.4	25	J	ug/L	7.8-9	6/23/2004	
B-3	12b-021779	1	Copper, SPLP Leachate	1.4	25	J	ug/L	7.8-9	6/23/2004	
B-4	12b-021754	0	Copper, Total	3.5	0.97	J	mg/kg	10-11.3	6/22/2004	ND

Table D-2  
Copper SPLP Results

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
B-4	12b-021754	0	Copper, SPLP Leachate	25	25	U	ug/L	10-11.3	6/22/2004	
B-4	12b-021781	1	Copper, SPLP Leachate	25	25	U	ug/L	10-11.3	6/22/2004	
B-4	12b-021782	1	Copper, SPLP Leachate	25	25	U	ug/L	10-11.3	6/22/2004	
B-5	12b-021817	0	Copper, Total	72.1	1.3		mg/kg	12.4-14.4	6/25/2004	85.75
B-5	12b-021817	0	Copper, SPLP Leachate	25	25	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021819	1	Copper, SPLP Leachate	4.5	25		ug/L	12.4-14.4	6/25/2004	
B-5	12b-021818	1	Copper, SPLP Leachate	167	25		ug/L	12.4-14.4	6/25/2004	
B-5	12b-021755	0	Copper, Total	6.1	0.6	J	mg/kg	15.7-17.7	6/22/2004	4.20
B-5	12b-021755	0	Copper, SPLP Leachate	4.2	25		ug/L	15.7-17.7	6/22/2004	
B-5	12b-021784	1	Copper, SPLP Leachate	25	25	U	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021783	1	Copper, SPLP Leachate	25	25	U	ug/L	15.7-17.7	6/22/2004	
B-6	12b-021756	0	Copper, Total	159	1.1	J	mg/kg	7.8-8.8	6/22/2004	ND
B-6	12b-021756	0	Copper, SPLP Leachate	25	25	U	ug/L	7.8-8.8	6/22/2004	
B-6	12b-021785	1	Copper, SPLP Leachate	25	25	U	ug/L	7.8-8.8	6/22/2004	
B-6	12b-021786	1	Copper, SPLP Leachate	25	25	U	ug/L	7.8-8.8	6/22/2004	
B-7	12b-021752	0	Copper, Total	96.2	1.5		mg/kg	8.1-9.1	6/23/2004	25.00
B-7	12b-021752	0	Copper, SPLP Leachate	25	25	U	ug/L	8.1-9.1	6/23/2004	
B-7	12b-021777	1	Copper, SPLP Leachate	25	25	U	ug/L	8.1-9.1	6/23/2004	
B-7	12b-021778	1	Copper, SPLP Leachate	25	25	U	ug/L	8.1-9.1	6/23/2004	
C-1	12b-021757	0	Copper, Total	2.2	0.82		mg/kg	10.2-11.2	6/24/2004	ND
C-1	12b-021757	0	Copper, SPLP Leachate	25	25	U	ug/L	10.2-11.2	6/24/2004	
C-1	12b-021788	1	Copper, SPLP Leachate	3	25	U	ug/L	10.2-11.2	6/24/2004	
C-1	12b-021787	1	Copper, SPLP Leachate	6.4	25	U	ug/L	10.2-11.2	6/24/2004	
C-2	12b-021758	0	Copper, Total	7.1	1		mg/kg	8.6-10.6	6/24/2004	ND
C-2	12b-021758	0	Copper, SPLP Leachate	25	25	U	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021789	1	Copper, SPLP Leachate	1.4	25	U	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021790	1	Copper, SPLP Leachate	25	25	U	ug/L	8.6-10.6	6/24/2004	
C-3	12b-021759	0	Copper, Total	8.7	0.87		mg/kg	9.6-10.6	6/24/2004	ND
C-3	12b-021759	0	Copper, SPLP Leachate	25	25	U	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021792	1	Copper, SPLP Leachate	2.4	25	U	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021791	1	Copper, SPLP Leachate	25	25	U	ug/L	9.6-10.6	6/24/2004	
C-5	12b-021761	0	Copper, Total	60.7	0.98		mg/kg	8.6-9.6	6/24/2004	4.90
C-5	12b-021761	0	Copper, SPLP Leachate	4.9	25		ug/L	8.6-9.6	6/24/2004	
C-5	12b-021796	1	Copper, SPLP Leachate	2.4	25	U	ug/L	8.6-9.6	6/24/2004	
C-5	12b-021795	1	Copper, SPLP Leachate	1.6	25	U	ug/L	8.6-9.6	6/24/2004	
C-6	12b-021762	0	Copper, Total	3	0.76		mg/kg	12.6-13.6	6/24/2004	ND
C-6	12b-021762	0	Copper, SPLP Leachate	25	25	U	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021797	1	Copper, SPLP Leachate	25	25	U	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021798	1	Copper, SPLP Leachate	25	25	U	ug/L	12.6-13.6	6/24/2004	
C-7	12b-021760	0	Copper, Total	5.5	0.98		mg/kg	7.6-8.6	6/25/2004	4.00
C-7	12b-021760	0	Copper, SPLP Leachate	25	25	U	ug/L	7.6-8.6	6/25/2004	

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
C-7	12b-021793	1	Copper, SPLP Leachate	25	25	U	ug/L	7.6-8.6	6/25/2004	
C-7	12b-021794	1	Copper, SPLP Leachate	4	25		ug/L	7.6-8.6	6/25/2004	
C-8	12b-021811	0	Copper, Total	263	0.88		mg/kg	4.7-6.2	6/25/2004	38.90
C-8	12b-021811	0	Copper, SPLP Leachate	36.8	25		ug/L	4.7-6.2	6/25/2004	
C-8	12b-021812	1	Copper, SPLP Leachate	41	25		ug/L	4.7-6.2	6/25/2004	
C-8	12b-021813	1	Copper, SPLP Leachate	38.9	25		ug/L	4.7-6.2	6/25/2004	

Notes

- ug/L = Micrograms per Liter
- mg/kg = Milligrams Per Kilogram
- Sample Type ID = 0 denotes sample was analyzed for total and SPLP metals, soil pH, TOC, moisture content and grain size analysis
- Sample Type ID = 1 denotes sample was analyzed for SPLP metals solely
- U and ND = Non Detect
- UU = Estimated Non-Detect
- J = Estimated Concentration

Table D-2  
 Lead SPLP Results

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
A-1	12b-021745	0	Lead, Total	6.5	0.71		mg/kg	13.4-15.4	6/21/2004	ND
A-1	12b-021745	0	Lead, SPLP Leachate	5	5	U	ug/L	13.4-15.4	6/21/2004	
A-1	12b-021763	1	Lead, SPLP Leachate	5	5	U	ug/L	13.4-15.4	6/21/2004	
A-1	12b-021764	1	Lead, SPLP Leachate	5	5	U	ug/L	13.4-15.4	6/21/2004	
A-2	12b-021746	0	Lead, Total	9.9	0.94		mg/kg	6.3-7.1	6/22/2004	ND
A-2	12b-021746	0	Lead, SPLP Leachate	5	5	U	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021766	1	Lead, SPLP Leachate	5	5	U	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021765	1	Lead, SPLP Leachate	5	5	U	ug/L	6.3-7.1	6/22/2004	
A-3	12b-021747	0	Lead, Total	11.5	0.64		mg/kg	6.3-8.3	6/21/2004	ND
A-3	12b-021747	0	Lead, SPLP Leachate	5.4	5	U	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021767	1	Lead, SPLP Leachate	5	5	U	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021768	1	Lead, SPLP Leachate	3	5	U	ug/L	6.3-8.3	6/21/2004	
A-4	12b-021748	0	Lead, Total	7.3	0.92		mg/kg	9.4-10.4	6/23/2004	ND
A-4	12b-021748	0	Lead, SPLP Leachate	5	5	U	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021769	1	Lead, SPLP Leachate	5	5	UJ	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021770	1	Lead, SPLP Leachate	5	5	UJ	ug/L	9.4-10.4	6/23/2004	
A-5	12b-021749	0	Lead, Total	7.5	0.96		mg/kg	10.4-11.4	6/23/2004	ND
A-5	12b-021749	0	Lead, SPLP Leachate	5	5	U	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021772	1	Lead, SPLP Leachate	5	5	UJ	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021771	1	Lead, SPLP Leachate	5	5	UJ	ug/L	10.4-11.4	6/23/2004	
A-6	12b-021750	0	Lead, Total	47.9	0.95		mg/kg	5.9-7.9	6/25/2004	ND
A-6	12b-021750	0	Lead, SPLP Leachate	5	5	U	ug/L	5.9-7.9	6/25/2004	
A-6	12b-021773	1	Lead, SPLP Leachate	5	5	U	ug/L	5.9-7.9	6/25/2004	
A-6	12b-021774	1	Lead, SPLP Leachate	5	5	U	ug/L	5.9-7.9	6/25/2004	
A-7	12b-021799	0	Lead, Total	739	1.4		mg/kg	9-11	6/21/2004	439.67
A-7	12b-021799	0	Lead, SPLP Leachate	230	5		ug/L	9-11	6/21/2004	
A-7	12b-021800	1	Lead, SPLP Leachate	540	25		ug/L	9-11	6/21/2004	
A-7	12b-021801	1	Lead, SPLP Leachate	549	25		ug/L	9-11	6/21/2004	
A-8	12b-021814	0	Lead, Total	5.4	0.85		mg/kg	11.2-12.4	6/25/2004	ND
A-8	12b-021814	0	Lead, SPLP Leachate	2.1	5	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021816	1	Lead, SPLP Leachate	5	5	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021815	1	Lead, SPLP Leachate	5	5	U	ug/L	11.2-12.4	6/25/2004	
B-1	12b-021751	0	Lead, Total	5.6	0.85		mg/kg	12.4-13.4	6/23/2004	ND
B-1	12b-021751	0	Lead, SPLP Leachate	5	5	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021776	1	Lead, SPLP Leachate	5	5	UJ	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021775	1	Lead, SPLP Leachate	5	5	UJ	ug/L	12.4-13.4	6/23/2004	
B-3	12b-021753	0	Lead, Total	41.6	1		mg/kg	7.8-9	6/23/2004	ND
B-3	12b-021753	0	Lead, SPLP Leachate	5	5	U	ug/L	7.8-9	6/23/2004	
B-3	12b-021780	1	Lead, SPLP Leachate	5	5	UJ	ug/L	7.8-9	6/23/2004	
B-3	12b-021779	1	Lead, SPLP Leachate	5	5	UJ	ug/L	7.8-9	6/23/2004	
B-4	12b-021754	0	Lead, Total	11.3	0.93		mg/kg	10-11.3	6/22/2004	ND

Table D-2  
Lead SPLP Results

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
B-4	12b-021754	0	Lead, SPLP Leachate	2.2	5	U	ug/L	10-11.3	6/22/2004	
B-4	12b-021781	1	Lead, SPLP Leachate	5	5	U	ug/L	10-11.3	6/22/2004	
B-4	12b-021782	1	Lead, SPLP Leachate	5	5	U	ug/L	10-11.3	6/22/2004	
B-5	12b-021817	0	Lead, Total	35.4	1.2		mg/kg	12.4-14.4	6/25/2004	ND
B-5	12b-021817	0	Lead, SPLP Leachate	5	5	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021819	1	Lead, SPLP Leachate	5	5	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021818	1	Lead, SPLP Leachate	4.6	5	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021755	0	Lead, Total	4.4	0.57		mg/kg	15.7-17.7	6/22/2004	ND
B-5	12b-021755	0	Lead, SPLP Leachate	5	5	U	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021784	1	Lead, SPLP Leachate	5	5	U	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021783	1	Lead, SPLP Leachate	5	5	U	ug/L	15.7-17.7	6/22/2004	
B-6	12b-021756	0	Lead, Total	255	1.1		mg/kg	7.8-8.8	6/22/2004	ND
B-6	12b-021756	0	Lead, SPLP Leachate	5	5	U	ug/L	7.8-8.8	6/22/2004	
B-6	12b-021785	1	Lead, SPLP Leachate	5	5	U	ug/L	7.8-8.8	6/22/2004	
B-6	12b-021786	1	Lead, SPLP Leachate	5	5	U	ug/L	7.8-8.8	6/22/2004	
B-7	12b-021752	0	Lead, Total	29.7	1.4		mg/kg	8.1-9.1	6/23/2004	ND
B-7	12b-021752	0	Lead, SPLP Leachate	5	5	U	ug/L	8.1-9.1	6/23/2004	
B-7	12b-021777	1	Lead, SPLP Leachate	5	5	UJ	ug/L	8.1-9.1	6/23/2004	
B-7	12b-021778	1	Lead, SPLP Leachate	5	5	UJ	ug/L	8.1-9.1	6/23/2004	
C-1	12b-021757	0	Lead, Total	8	0.77		mg/kg	10.2-11.2	6/24/2004	ND
C-1	12b-021757	0	Lead, SPLP Leachate	5	5	U	ug/L	10.2-11.2	6/24/2004	
C-1	12b-021788	1	Lead, SPLP Leachate	1.2	5	UJ	ug/L	10.2-11.2	6/24/2004	
C-1	12b-021787	1	Lead, SPLP Leachate	2.6	5	UJ	ug/L	10.2-11.2	6/24/2004	
C-2	12b-021758	0	Lead, Total	13.2	0.99		mg/kg	8.6-10.6	6/24/2004	ND
C-2	12b-021758	0	Lead, SPLP Leachate	0.97	5	U	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021789	1	Lead, SPLP Leachate	5	5	UJ	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021790	1	Lead, SPLP Leachate	5	5	UJ	ug/L	8.6-10.6	6/24/2004	
C-3	12b-021759	0	Lead, Total	6	0.83		mg/kg	9.6-10.6	6/24/2004	ND
C-3	12b-021759	0	Lead, SPLP Leachate	5	5	U	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021792	1	Lead, SPLP Leachate	5	5	UJ	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021791	1	Lead, SPLP Leachate	5	5	UJ	ug/L	9.6-10.6	6/24/2004	
C-5	12b-021761	0	Lead, Total	17.9	0.93		mg/kg	8.6-9.6	6/24/2004	ND
C-5	12b-021761	0	Lead, SPLP Leachate	5	5	U	ug/L	8.6-9.6	6/24/2004	
C-5	12b-021796	1	Lead, SPLP Leachate	5	5	UJ	ug/L	8.6-9.6	6/24/2004	
C-5	12b-021795	1	Lead, SPLP Leachate	5	5	UJ	ug/L	8.6-9.6	6/24/2004	
C-6	12b-021762	0	Lead, Total	7.1	0.73		mg/kg	12.6-13.6	6/24/2004	ND
C-6	12b-021762	0	Lead, SPLP Leachate	5	5	U	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021797	1	Lead, SPLP Leachate	5	5	UJ	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021798	1	Lead, SPLP Leachate	5	5	UJ	ug/L	12.6-13.6	6/24/2004	
C-7	12b-021760	0	Lead, Total	9.5	0.93		mg/kg	7.6-8.6	6/25/2004	ND
C-7	12b-021760	0	Lead, SPLP Leachate	5	5	U	ug/L	7.6-8.6	6/25/2004	

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
C-7	12b-021793	1	Lead, SPLP Leachate	5	5	U	ug/L	7.6-8.6	6/25/2004	
C-7	12b-021794	1	Lead, SPLP Leachate	5	5	U	ug/L	7.6-8.6	6/25/2004	
C-8	12b-021811	0	Lead, Total	193	0.84		mg/kg	4.7-6.2	6/25/2004	10
C-8	12b-021811	0	Lead, SPLP Leachate	2.2	5	U	ug/L	4.7-6.2	6/25/2004	
C-8	12b-021812	1	Lead, SPLP Leachate	10	5		ug/L	4.7-6.2	6/25/2004	
C-8	12b-021813	1	Lead, SPLP Leachate	2.7	5	U	ug/L	4.7-6.2	6/25/2004	

Notes

- ug/L = Micrograms per Liter
- mg/kg = Milligrams Per Kilogram
- Sample Type ID = 0 denotes sample was analyzed for total and SPLP metals, soil pH, TOC, moisture content and grain size analysis
- Sample Type ID = 1 denotes sample was analyzed for SPLP metals solely
- U and ND = Non Detect
- LJ = Estimated Non-Detect
- J = Estimated Concentration

Table D-2  
 Lithium SPLP Results

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
A-1	12b-021745	0	Lithium, Total	12.6	5.6		mg/kg	13.4-15.4	6/21/2004	51.10
A-1	12b-021745	0	Lithium, SPLP Leachate	51.1	50		ug/L	13.4-15.4	6/21/2004	
A-1	12b-021763	1	Lithium, SPLP Leachate	35.1	50	U	ug/L	13.4-15.4	6/21/2004	
A-1	12b-021764	1	Lithium, SPLP Leachate	35.2	50	U	ug/L	13.4-15.4	6/21/2004	
A-2	12b-021746	0	Lithium, Total	138	6.4		mg/kg	6.3-7.1	6/22/2004	108.50
A-2	12b-021746	0	Lithium, SPLP Leachate	159	50		ug/L	6.3-7.1	6/22/2004	
A-2	12b-021766	1	Lithium, SPLP Leachate	84.6	50		ug/L	6.3-7.1	6/22/2004	
A-2	12b-021765	1	Lithium, SPLP Leachate	81.9	50		ug/L	6.3-7.1	6/22/2004	
A-3	12b-021747	0	Lithium, Total	37.3	5.8		mg/kg	6.3-8.3	6/21/2004	77.03
A-3	12b-021747	0	Lithium, SPLP Leachate	82.3	50		ug/L	6.3-8.3	6/21/2004	
A-3	12b-021767	1	Lithium, SPLP Leachate	56.9	50		ug/L	6.3-8.3	6/21/2004	
A-3	12b-021768	1	Lithium, SPLP Leachate	91.9	50		ug/L	6.3-8.3	6/21/2004	
A-4	12b-021748	0	Lithium, Total	98.2	6.1	J	mg/kg	9.4-10.4	6/23/2004	224.33
A-4	12b-021748	0	Lithium, SPLP Leachate	237	50		ug/L	9.4-10.4	6/23/2004	
A-4	12b-021769	1	Lithium, SPLP Leachate	230	50		ug/L	9.4-10.4	6/23/2004	
A-4	12b-021770	1	Lithium, SPLP Leachate	216	50		ug/L	9.4-10.4	6/23/2004	
A-5	12b-021749	0	Lithium, Total	95.1	6.4	J	mg/kg	10.4-11.4	6/23/2004	249.33
A-5	12b-021749	0	Lithium, SPLP Leachate	403	50		ug/L	10.4-11.4	6/23/2004	
A-5	12b-021772	1	Lithium, SPLP Leachate	171	50		ug/L	10.4-11.4	6/23/2004	
A-5	12b-021771	1	Lithium, SPLP Leachate	174	50		ug/L	10.4-11.4	6/23/2004	
A-6	12b-021750	0	Lithium, Total	132	35.3	J	mg/kg	5.9-7.9	6/25/2004	92.97
A-6	12b-021750	0	Lithium, SPLP Leachate	81.5	50		ug/L	5.9-7.9	6/25/2004	
A-6	12b-021773	1	Lithium, SPLP Leachate	102	50		ug/L	5.9-7.9	6/25/2004	
A-6	12b-021774	1	Lithium, SPLP Leachate	95.4	50		ug/L	5.9-7.9	6/25/2004	
A-7	12b-021799	0	Lithium, Total	194	9.5		mg/kg	9-11	6/21/2004	1086.00
A-7	12b-021799	0	Lithium, SPLP Leachate	1280	50		ug/L	9-11	6/21/2004	
A-7	12b-021800	1	Lithium, SPLP Leachate	1010	250		ug/L	9-11	6/21/2004	
A-7	12b-021801	1	Lithium, SPLP Leachate	968	250		ug/L	9-11	6/21/2004	
A-8	12b-021814	0	Lithium, Total	40.9	5.9	J	mg/kg	11.2-12.4	6/25/2004	102.17
A-8	12b-021814	0	Lithium, SPLP Leachate	122	50		ug/L	11.2-12.4	6/25/2004	
A-8	12b-021816	1	Lithium, SPLP Leachate	94.9	50		ug/L	11.2-12.4	6/25/2004	
A-8	12b-021815	1	Lithium, SPLP Leachate	89.6	50		ug/L	11.2-12.4	6/25/2004	
B-1	12b-021751	0	Lithium, Total	18.4	5.7	J	mg/kg	12.4-13.4	6/23/2004	61.83
B-1	12b-021751	0	Lithium, SPLP Leachate	67.1	50		ug/L	12.4-13.4	6/23/2004	
B-1	12b-021776	1	Lithium, SPLP Leachate	58.2	50		ug/L	12.4-13.4	6/23/2004	
B-1	12b-021775	1	Lithium, SPLP Leachate	60.2	50		ug/L	12.4-13.4	6/23/2004	
B-3	12b-021753	0	Lithium, Total	368	8	J	mg/kg	7.8-9	6/23/2004	96.90
B-3	12b-021753	0	Lithium, SPLP Leachate	94.2	50		ug/L	7.8-9	6/23/2004	
B-3	12b-021780	1	Lithium, SPLP Leachate	96.9	50		ug/L	7.8-9	6/23/2004	
B-3	12b-021779	1	Lithium, SPLP Leachate	99.6	50		ug/L	7.8-9	6/23/2004	

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
B-4	12b-021754	0	Lithium, Total	37.5	6.3		mg/kg	10-11.3	6/22/2004	16.00
B-4	12b-021754	0	Lithium, SPLP Leachate	16	50		ug/L	10-11.3	6/22/2004	
B-4	12b-021781	1	Lithium, SPLP Leachate	15.7	50	U	ug/L	10-11.3	6/22/2004	
B-4	12b-021782	1	Lithium, SPLP Leachate	12.7	50	U	ug/L	10-11.3	6/22/2004	
B-5	12b-021817	0	Lithium, Total	511	9.2	J	mg/kg	12.4-14.4	6/25/2004	204.67
B-5	12b-021817	0	Lithium, SPLP Leachate	199	50		ug/L	12.4-14.4	6/25/2004	
B-5	12b-021819	1	Lithium, SPLP Leachate	206	50		ug/L	12.4-14.4	6/25/2004	
B-5	12b-021818	1	Lithium, SPLP Leachate	209	50		ug/L	12.4-14.4	6/25/2004	
B-5	12b-021755	0	Lithium, Total	9.2	5.6	J	mg/kg	15.7-17.7	6/22/2004	23.20
B-5	12b-021755	0	Lithium, SPLP Leachate	23.2	50		ug/L	15.7-17.7	6/22/2004	
B-5	12b-021784	1	Lithium, SPLP Leachate	18.5	50	U	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021783	1	Lithium, SPLP Leachate	17.4	50	U	ug/L	15.7-17.7	6/22/2004	
B-6	12b-021756	0	Lithium, Total	1700	8		mg/kg	7.8-8.8	6/22/2004	516.33
B-6	12b-021756	0	Lithium, SPLP Leachate	567	50		ug/L	7.8-8.8	6/22/2004	
B-6	12b-021785	1	Lithium, SPLP Leachate	490	50		ug/L	7.8-8.8	6/22/2004	
B-6	12b-021786	1	Lithium, SPLP Leachate	492	50		ug/L	7.8-8.8	6/22/2004	
B-7	12b-021752	0	Lithium, Total	889	11	J	mg/kg	8.1-9.1	6/23/2004	144.33
B-7	12b-021752	0	Lithium, SPLP Leachate	158	50		ug/L	8.1-9.1	6/23/2004	
B-7	12b-021777	1	Lithium, SPLP Leachate	142	50		ug/L	8.1-9.1	6/23/2004	
B-7	12b-021778	1	Lithium, SPLP Leachate	133	50		ug/L	8.1-9.1	6/23/2004	
C-1	12b-021757	0	Lithium, Total	26.9	5.9	J	mg/kg	10.2-11.2	6/24/2004	157.00
C-1	12b-021757	0	Lithium, SPLP Leachate	145	50		ug/L	10.2-11.2	6/24/2004	
C-1	12b-021788	1	Lithium, SPLP Leachate	162	50		ug/L	10.2-11.2	6/24/2004	
C-1	12b-021787	1	Lithium, SPLP Leachate	164	50		ug/L	10.2-11.2	6/24/2004	
C-2	12b-021758	0	Lithium, Total	26	5.8	J	mg/kg	8.6-10.6	6/24/2004	65.43
C-2	12b-021758	0	Lithium, SPLP Leachate	62	50		ug/L	8.6-10.6	6/24/2004	
C-2	12b-021789	1	Lithium, SPLP Leachate	63	50		ug/L	8.6-10.6	6/24/2004	
C-2	12b-021790	1	Lithium, SPLP Leachate	71.3	50		ug/L	8.6-10.6	6/24/2004	
C-3	12b-021759	0	Lithium, Total	49.5	6	J	mg/kg	9.6-10.6	6/24/2004	126.00
C-3	12b-021759	0	Lithium, SPLP Leachate	125	50		ug/L	9.6-10.6	6/24/2004	
C-3	12b-021792	1	Lithium, SPLP Leachate	129	50		ug/L	9.6-10.6	6/24/2004	
C-3	12b-021791	1	Lithium, SPLP Leachate	124	50		ug/L	9.6-10.6	6/24/2004	
C-5	12b-021761	0	Lithium, Total	22	5.9	J	mg/kg	8.6-9.6	6/24/2004	63.50
C-5	12b-021761	0	Lithium, SPLP Leachate	60.5	50		ug/L	8.6-9.6	6/24/2004	
C-5	12b-021796	1	Lithium, SPLP Leachate	68.6	50		ug/L	8.6-9.6	6/24/2004	
C-5	12b-021795	1	Lithium, SPLP Leachate	61.4	50		ug/L	8.6-9.6	6/24/2004	
C-6	12b-021762	0	Lithium, Total	30.6	5.8	J	mg/kg	12.6-13.6	6/24/2004	140.67
C-6	12b-021762	0	Lithium, SPLP Leachate	140	50		ug/L	12.6-13.6	6/24/2004	
C-6	12b-021797	1	Lithium, SPLP Leachate	145	50		ug/L	12.6-13.6	6/24/2004	
C-6	12b-021798	1	Lithium, SPLP Leachate	137	50		ug/L	12.6-13.6	6/24/2004	

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
C-7	12b-021760	0	Lithium, Total	32.4	6.1	J	mg/kg	7.6-8.6	6/25/2004	97.73
C-7	12b-021760	0	Lithium, SPLP Leachate	97.9	50		ug/L	7.6-8.6	6/25/2004	
C-7	12b-021793	1	Lithium, SPLP Leachate	103	50		ug/L	7.6-8.6	6/25/2004	
C-7	12b-021794	1	Lithium, SPLP Leachate	92.3	50		ug/L	7.6-8.6	6/25/2004	
C-8	12b-021811	0	Lithium, Total	67.4	5.8	J	mg/kg	4.7-6.2	6/25/2004	51.80
C-8	12b-021812	0	Lithium, SPLP Leachate	49.9	50		ug/L	4.7-6.2	6/25/2004	
C-8	12b-021812	1	Lithium, SPLP Leachate	52.2	50		ug/L	4.7-6.2	6/25/2004	
C-8	12b-021813	1	Lithium, SPLP Leachate	53.3	50		ug/L	4.7-6.2	6/25/2004	

Notes

- ug/L = Micrograms per Liter
- mg/kg = Milligrams Per Kilogram
- Sample Type ID = 0 denotes sample was analyzed for total and SPLP metals, soil pH, TOC, moisture content and grain size analysis
- Sample Type ID = 1 denotes sample was analyzed for SPLP metals solely
- U and ND = Non Detect
- UJ = Estimated Non-Detect
- J = Estimated Concentration

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
A-1	12b-021745	0	Mercury, Total	0.012	0.012	U	mg/kg	13.4-15.4	6/21/2004	ND
A-1	12b-021745	0	Mercury, SPLP Leachate	2	2	U	ug/L	13.4-15.4	6/21/2004	
A-1	12b-021763	1	Mercury, SPLP Leachate	0.2	0.2	U	ug/L	13.4-15.4	6/21/2004	
A-1	12b-021764	1	Mercury, SPLP Leachate	0.2	0.2	U	ug/L	13.4-15.4	6/21/2004	
A-2	12b-021746	0	Mercury, Total	0.02	0.017	J	mg/kg	6.3-7.1	6/22/2004	ND
A-2	12b-021746	0	Mercury, SPLP Leachate	2	2	U	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021765	1	Mercury, SPLP Leachate	0.2	0.2	U	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021766	1	Mercury, SPLP Leachate	0.2	0.2	U	ug/L	6.3-7.1	6/22/2004	
A-3	12b-021747	0	Mercury, Total	0.012	0.012	U	mg/kg	6.3-8.3	6/21/2004	ND
A-3	12b-021747	0	Mercury, SPLP Leachate	2	2	U	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021767	1	Mercury, SPLP Leachate	0.2	0.2	U	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021768	1	Mercury, SPLP Leachate	0.2	0.2	U	ug/L	6.3-8.3	6/21/2004	
A-4	12b-021748	0	Mercury, Total	0.024	0.012	J	mg/kg	9.4-10.4	6/23/2004	ND
A-4	12b-021748	0	Mercury, SPLP Leachate	2	2	U	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021769	1	Mercury, SPLP Leachate	2	2	U	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021770	1	Mercury, SPLP Leachate	2	2	U	ug/L	9.4-10.4	6/23/2004	
A-5	12b-021749	0	Mercury, Total	0.036	0.016		mg/kg	10.4-11.4	6/23/2004	ND
A-5	12b-021749	0	Mercury, SPLP Leachate	2	2	U	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021772	1	Mercury, SPLP Leachate	2	2	U	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021771	1	Mercury, SPLP Leachate	2	2	U	ug/L	10.4-11.4	6/23/2004	
A-6	12b-021750	0	Mercury, Total	0.57	0.046		mg/kg	5.9-7.9	6/25/2004	ND
A-6	12b-021750	0	Mercury, SPLP Leachate	2	2	U	ug/L	5.9-7.9	6/25/2004	
A-6	12b-021773	1	Mercury, SPLP Leachate	2	2	U	ug/L	5.9-7.9	6/25/2004	
A-6	12b-021774	1	Mercury, SPLP Leachate	2	2	U	ug/L	5.9-7.9	6/25/2004	
A-7	12b-021799	0	Mercury, Total	0.4	0.026		mg/kg	9-11	6/21/2004	0.28
A-7	12b-021799	0	Mercury, SPLP Leachate	0.24	2		ug/L	9-11	6/21/2004	
A-7	12b-021801	1	Mercury, SPLP Leachate	0.35	0.2		ug/L	9-11	6/21/2004	
A-7	12b-021800	1	Mercury, SPLP Leachate	0.29	0.2		ug/L	9-11	6/21/2004	
A-8	12b-021814	0	Mercury, Total	0.015	0.015	U	mg/kg	11.2-12.4	6/25/2004	ND
A-8	12b-021814	0	Mercury, SPLP Leachate	2	2	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021815	1	Mercury, SPLP Leachate	2	2	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021816	1	Mercury, SPLP Leachate	2	2	U	ug/L	11.2-12.4	6/25/2004	
B-1	12b-021751	0	Mercury, Total	0.014	0.014	U	mg/kg	12.4-13.4	6/23/2004	ND
B-1	12b-021751	0	Mercury, SPLP Leachate	2	2	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021776	1	Mercury, SPLP Leachate	2	2	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021775	1	Mercury, SPLP Leachate	2	2	U	ug/L	12.4-13.4	6/23/2004	
B-3	12b-021753	0	Mercury, Total	2.3	0.22		mg/kg	7.8-9	6/23/2004	ND
B-3	12b-021753	0	Mercury, SPLP Leachate	2	2	U	ug/L	7.8-9	6/23/2004	
B-3	12b-021780	1	Mercury, SPLP Leachate	2	2	U	ug/L	7.8-9	6/23/2004	
B-3	12b-021779	1	Mercury, SPLP Leachate	2	2	U	ug/L	7.8-9	6/23/2004	
B-4	12b-021754	0	Mercury, Total	0.046	0.02		mg/kg	10-11.3	6/22/2004	ND

Table D-2  
Mercury SPLP Results

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
B-4	12b-021754	0	Mercury, SPLP Leachate	2	2	U	ug/L	10-11.3	6/22/2004	
B-4	12b-021782	1	Mercury, SPLP Leachate	0.2	0.2	U	ug/L	10-11.3	6/22/2004	
B-4	12b-021781	1	Mercury, SPLP Leachate	0.2	0.2	U	ug/L	10-11.3	6/22/2004	
B-5	12b-021817	0	Mercury, Total	0.067	0.03		mg/kg	12.4-14.4	6/25/2004	ND
B-5	12b-021817	0	Mercury, SPLP Leachate	2	2	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021818	1	Mercury, SPLP Leachate	2	2	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021819	1	Mercury, SPLP Leachate	2	2	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021755	0	Mercury, Total	0.012	0.012	U	mg/kg	15.7-17.7	6/22/2004	ND
B-5	12b-021755	0	Mercury, SPLP Leachate	2	2	U	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021783	1	Mercury, SPLP Leachate	0.2	0.2	U	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021784	1	Mercury, SPLP Leachate	0.2	0.2	U	ug/L	15.7-17.7	6/22/2004	
B-6	12b-021756	0	Mercury, Total	1.4	0.026		mg/kg	7.8-8.8	6/22/2004	ND
B-6	12b-021756	0	Mercury, SPLP Leachate	2	2	U	ug/L	7.8-8.8	6/22/2004	
B-6	12b-021785	1	Mercury, SPLP Leachate	0.2	0.2	U	ug/L	7.8-8.8	6/22/2004	
B-6	12b-021786	1	Mercury, SPLP Leachate	0.2	0.2	U	ug/L	7.8-8.8	6/22/2004	
B-7	12b-021752	0	Mercury, Total	0.2	0.024		mg/kg	8.1-9.1	6/23/2004	ND
B-7	12b-021752	0	Mercury, SPLP Leachate	2	2	U	ug/L	8.1-9.1	6/23/2004	
B-7	12b-021777	1	Mercury, SPLP Leachate	2	2	U	ug/L	8.1-9.1	6/23/2004	
B-7	12b-021778	1	Mercury, SPLP Leachate	2	2	U	ug/L	8.1-9.1	6/23/2004	
C-1	12b-021757	0	Mercury, Total	0.026	0.013	J	mg/kg	10.2-11.2	6/24/2004	ND
C-1	12b-021757	0	Mercury, SPLP Leachate	2	2	U	ug/L	10.2-11.2	6/24/2004	
C-1	12b-021787	1	Mercury, SPLP Leachate	2	2	U	ug/L	10.2-11.2	6/24/2004	
C-1	12b-021788	1	Mercury, SPLP Leachate	2	2	U	ug/L	10.2-11.2	6/24/2004	
C-2	12b-021758	0	Mercury, Total	0.05	0.015		mg/kg	8.6-10.6	6/24/2004	ND
C-2	12b-021758	0	Mercury, SPLP Leachate	2	2	U	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021790	1	Mercury, SPLP Leachate	2	2	U	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021789	1	Mercury, SPLP Leachate	2	2	U	ug/L	8.6-10.6	6/24/2004	
C-3	12b-021759	0	Mercury, Total	0.011	0.0097	J	mg/kg	9.6-10.6	6/24/2004	ND
C-3	12b-021759	0	Mercury, SPLP Leachate	2	2	U	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021791	1	Mercury, SPLP Leachate	2	2	U	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021792	1	Mercury, SPLP Leachate	2	2	U	ug/L	9.6-10.6	6/24/2004	
C-5	12b-021761	0	Mercury, Total	0.027	0.015	J	mg/kg	8.6-9.6	6/24/2004	ND
C-5	12b-021761	0	Mercury, SPLP Leachate	2	2	U	ug/L	8.6-9.6	6/24/2004	
C-5	12b-021795	1	Mercury, SPLP Leachate	2	2	U	ug/L	8.6-9.6	6/24/2004	
C-5	12b-021796	1	Mercury, SPLP Leachate	2	2	U	ug/L	8.6-9.6	6/24/2004	
C-6	12b-021762	0	Mercury, Total	0.01	0.01	U	mg/kg	12.6-13.6	6/24/2004	ND
C-6	12b-021762	0	Mercury, SPLP Leachate	2	2	U	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021798	1	Mercury, SPLP Leachate	2	2	U	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021797	1	Mercury, SPLP Leachate	2	2	U	ug/L	12.6-13.6	6/24/2004	
C-7	12b-021760	0	Mercury, Total	0.032	0.013	U	mg/kg	7.6-8.6	6/25/2004	ND
C-7	12b-021760	0	Mercury, SPLP Leachate	2	2	U	ug/L	7.6-8.6	6/25/2004	

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
C-7	12b-021793	1	Mercury, SPLP Leachate	2	2	U	ug/L	7.6-8.6	6/25/2004	
C-7	12b-021794	1	Mercury, SPLP Leachate	2	2	U	ug/L	7.6-8.6	6/25/2004	
C-8	12b-021811	0	Mercury, Total	0.61	0.011		mg/kg	4.7-6.2	6/25/2004	ND
C-8	12b-021811	0	Mercury, SPLP Leachate	2	2	U	ug/L	4.7-6.2	6/25/2004	
C-8	12b-021812	1	Mercury, SPLP Leachate	2	2	U	ug/L	4.7-6.2	6/25/2004	
C-8	12b-021813	1	Mercury, SPLP Leachate	2	2	U	ug/L	4.7-6.2	6/25/2004	

Notes

- ug/L = Micrograms per Liter
- mg/kg = Milligrams Per Kilogram
- Sample Type ID = 0 denotes sample was analyzed for total and SPLP metals, soil pH, TOC, moisture content and grain size analysis
- Sample Type ID = 1 denotes sample was analyzed for SPLP metals solely
- U and ND = Non Detect
- UJ = Estimated Non-Detect
- J = Estimated Concentration

Table D-2  
 Nickel SPLP Results

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
A-1	12b-021745	0	Nickel, Total	9.3	0.41		mg/kg	13.4-15.4	6/21/2004	1.97
A-1	12b-021745	0	Nickel, SPLP Leachate	4.6	10		ug/L	13.4-15.4	6/21/2004	
A-1	12b-021763	1	Nickel, SPLP Leachate	0.62	10	J	ug/L	13.4-15.4	6/21/2004	
A-1	12b-021764	1	Nickel, SPLP Leachate	0.7	10	J	ug/L	13.4-15.4	6/21/2004	
A-2	12b-021746	0	Nickel, Total	6.5	0.55		mg/kg	6.3-7.1	6/22/2004	0.77
A-2	12b-021746	0	Nickel, SPLP Leachate	1.6	10		ug/L	6.3-7.1	6/22/2004	
A-2	12b-021766	1	Nickel, SPLP Leachate	0.37	10	J	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021765	1	Nickel, SPLP Leachate	0.34	10	J	ug/L	6.3-7.1	6/22/2004	
A-3	12b-021747	0	Nickel, Total	6.1	0.37		mg/kg	6.3-8.3	6/21/2004	0.86
A-3	12b-021747	0	Nickel, SPLP Leachate	0.53	10		ug/L	6.3-8.3	6/21/2004	
A-3	12b-021767	1	Nickel, SPLP Leachate	0.35	10	J	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021768	1	Nickel, SPLP Leachate	1.7	10	J	ug/L	6.3-8.3	6/21/2004	
A-4	12b-021748	0	Nickel, Total	5.9	0.53		mg/kg	9.4-10.4	6/23/2004	1.23
A-4	12b-021748	0	Nickel, SPLP Leachate	1.6	10		ug/L	9.4-10.4	6/23/2004	
A-4	12b-021769	1	Nickel, SPLP Leachate	1	10		ug/L	9.4-10.4	6/23/2004	
A-4	12b-021770	1	Nickel, SPLP Leachate	1.1	10		ug/L	9.4-10.4	6/23/2004	
A-5	12b-021749	0	Nickel, Total	5.6	0.56		mg/kg	10.4-11.4	6/23/2004	2.42
A-5	12b-021749	0	Nickel, SPLP Leachate	2.6	10		ug/L	10.4-11.4	6/23/2004	
A-5	12b-021772	1	Nickel, SPLP Leachate	3.9	10		ug/L	10.4-11.4	6/23/2004	
A-5	12b-021771	1	Nickel, SPLP Leachate	0.75	10		ug/L	10.4-11.4	6/23/2004	
A-6	12b-021750	0	Nickel, Total	21.4	0.55		mg/kg	5.9-7.9	6/25/2004	4.63
A-6	12b-021750	0	Nickel, SPLP Leachate	4.4	10		ug/L	5.9-7.9	6/25/2004	
A-6	12b-021773	1	Nickel, SPLP Leachate	4.8	10		ug/L	5.9-7.9	6/25/2004	
A-6	12b-021774	1	Nickel, SPLP Leachate	4.7	10		ug/L	5.9-7.9	6/25/2004	
A-7	12b-021799	0	Nickel, Total	13.4	0.82		mg/kg	9-11	6/21/2004	18.17
A-7	12b-021799	0	Nickel, SPLP Leachate	10.4	10		ug/L	9-11	6/21/2004	
A-7	12b-021800	1	Nickel, SPLP Leachate	21.2	10		ug/L	9-11	6/21/2004	
A-7	12b-021801	1	Nickel, SPLP Leachate	22.9	10		ug/L	9-11	6/21/2004	
A-8	12b-021814	0	Nickel, Total	10.2	0.49		mg/kg	11.2-12.4	6/25/2004	1.27
A-8	12b-021814	0	Nickel, SPLP Leachate	1.4	10		ug/L	11.2-12.4	6/25/2004	
A-8	12b-021816	1	Nickel, SPLP Leachate	1.1	10		ug/L	11.2-12.4	6/25/2004	
A-8	12b-021815	1	Nickel, SPLP Leachate	1.3	10		ug/L	11.2-12.4	6/25/2004	
B-1	12b-021751	0	Nickel, Total	5.3	0.49		mg/kg	12.4-13.4	6/23/2004	0.49
B-1	12b-021751	0	Nickel, SPLP Leachate	0.3	10		ug/L	12.4-13.4	6/23/2004	
B-1	12b-021776	1	Nickel, SPLP Leachate	0.53	10		ug/L	12.4-13.4	6/23/2004	
B-1	12b-021775	1	Nickel, SPLP Leachate	0.63	10		ug/L	12.4-13.4	6/23/2004	
B-3	12b-021753	0	Nickel, Total	15.2	0.58		mg/kg	7.8-9	6/23/2004	16.03
B-3	12b-021753	0	Nickel, SPLP Leachate	18.8	10		ug/L	7.8-9	6/23/2004	
B-3	12b-021780	1	Nickel, SPLP Leachate	14.3	10		ug/L	7.8-9	6/23/2004	
B-3	12b-021779	1	Nickel, SPLP Leachate	15	10		ug/L	7.8-9	6/23/2004	
B-4	12b-021754	0	Nickel, Total	5.7	0.54		mg/kg	10-11.3	6/22/2004	0.71

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
B-4	12b-021754	0	Nickel, SPLP Leachate	0.61	10		ug/L	10-11.3	6/22/2004	
B-4	12b-021781	1	Nickel, SPLP Leachate	1.1	10	J	ug/L	10-11.3	6/22/2004	
B-4	12b-021782	1	Nickel, SPLP Leachate	0.41	10	J	ug/L	10-11.3	6/22/2004	
B-5	12b-021817	0	Nickel, Total	52.2	0.7		mg/kg	12.4-14.4	6/25/2004	75.83
B-5	12b-021817	0	Nickel, SPLP Leachate	75.6	10		ug/L	12.4-14.4	6/25/2004	
B-5	12b-021819	1	Nickel, SPLP Leachate	73.8	10		ug/L	12.4-14.4	6/25/2004	
B-5	12b-021818	1	Nickel, SPLP Leachate	78.1	10		ug/L	12.4-14.4	6/25/2004	
B-5	12b-021755	0	Nickel, Total	7.1	0.33		mg/kg	15.7-17.7	6/22/2004	2.69
B-5	12b-021755	0	Nickel, SPLP Leachate	7.2	10		ug/L	15.7-17.7	6/22/2004	
B-5	12b-021784	1	Nickel, SPLP Leachate	0.52	10	J	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021783	1	Nickel, SPLP Leachate	0.35	10	J	ug/L	15.7-17.7	6/22/2004	
B-6	12b-021756	0	Nickel, Total	36.2	0.62		mg/kg	7.8-8.8	6/22/2004	1.25
B-6	12b-021756	0	Nickel, SPLP Leachate	2	10		ug/L	7.8-8.8	6/22/2004	
B-6	12b-021765	1	Nickel, SPLP Leachate	0.92	10	J	ug/L	7.8-8.8	6/22/2004	
B-6	12b-021786	1	Nickel, SPLP Leachate	0.83	10	J	ug/L	7.8-8.8	6/22/2004	
B-7	12b-021752	0	Nickel, Total	48.1	0.82		mg/kg	8.1-9.1	6/23/2004	41.17
B-7	12b-021752	0	Nickel, SPLP Leachate	45.9	10		ug/L	8.1-9.1	6/23/2004	
B-7	12b-021777	1	Nickel, SPLP Leachate	39.8	10		ug/L	8.1-9.1	6/23/2004	
B-7	12b-021778	1	Nickel, SPLP Leachate	37.8	10		ug/L	8.1-9.1	6/23/2004	
C-1	12b-021757	0	Nickel, Total	3.6	0.45		mg/kg	10.2-11.2	6/24/2004	2.31
C-1	12b-021757	0	Nickel, SPLP Leachate	0.82	10		ug/L	10.2-11.2	6/24/2004	
C-1	12b-021788	1	Nickel, SPLP Leachate	2.8	10		ug/L	10.2-11.2	6/24/2004	
C-1	12b-021787	1	Nickel, SPLP Leachate	3.3	10		ug/L	10.2-11.2	6/24/2004	
C-2	12b-021758	0	Nickel, Total	6.3	0.57		mg/kg	8.6-10.6	6/24/2004	0.76
C-2	12b-021758	0	Nickel, SPLP Leachate	0.54	10		ug/L	8.6-10.6	6/24/2004	
C-2	12b-021789	1	Nickel, SPLP Leachate	0.89	10		ug/L	8.6-10.6	6/24/2004	
C-2	12b-021790	1	Nickel, SPLP Leachate	0.84	10		ug/L	8.6-10.6	6/24/2004	
C-3	12b-021759	0	Nickel, Total	8.3	0.48		mg/kg	9.6-10.6	6/24/2004	4.10
C-3	12b-021759	0	Nickel, SPLP Leachate	3.6	10		ug/L	9.6-10.6	6/24/2004	
C-3	12b-021792	1	Nickel, SPLP Leachate	4.6	10		ug/L	9.6-10.6	6/24/2004	
C-3	12b-021791	1	Nickel, SPLP Leachate	4.1	10		ug/L	9.6-10.6	6/24/2004	
C-5	12b-021761	0	Nickel, Total	12.6	0.54		mg/kg	8.6-9.6	6/24/2004	2.67
C-5	12b-021761	0	Nickel, SPLP Leachate	2.3	10		ug/L	8.6-9.6	6/24/2004	
C-5	12b-021796	1	Nickel, SPLP Leachate	3.2	10		ug/L	8.6-9.6	6/24/2004	
C-5	12b-021795	1	Nickel, SPLP Leachate	2.5	10		ug/L	8.6-9.6	6/24/2004	
C-6	12b-021762	0	Nickel, Total	4.8	0.42		mg/kg	12.6-13.6	6/24/2004	1.80
C-6	12b-021762	0	Nickel, SPLP Leachate	1.6	10		ug/L	12.6-13.6	6/24/2004	
C-6	12b-021797	1	Nickel, SPLP Leachate	1.8	10		ug/L	12.6-13.6	6/24/2004	
C-6	12b-021798	1	Nickel, SPLP Leachate	2	10		ug/L	12.6-13.6	6/24/2004	
C-7	12b-021760	0	Nickel, Total	12.4	0.54		mg/kg	7.6-8.6	6/25/2004	3.87
C-7	12b-021760	0	Nickel, SPLP Leachate	3	10		ug/L	7.6-8.6	6/25/2004	

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
C-7	12b-021793	1	Nickel, SPLP Leachate	4.4	10		ug/L	7.6-8.6	6/25/2004	
C-7	12b-021794	1	Nickel, SPLP Leachate	4.2	10		ug/L	7.6-8.6	6/25/2004	
C-8	12b-021811	0	Nickel, Total	25.5	0.48		mg/kg	4.7-6.2	6/25/2004	3.10
C-8	12b-021811	0	Nickel, SPLP Leachate	2.3	10		ug/L	4.7-6.2	6/25/2004	
C-8	12b-021812	1	Nickel, SPLP Leachate	4.1	10		ug/L	4.7-6.2	6/25/2004	
C-8	12b-021813	1	Nickel, SPLP Leachate	2.9	10		ug/L	4.7-6.2	6/25/2004	

Notes

- ug/L = Micrograms per Liter
- mg/kg = Milligrams Per Kilogram
- Sample Type ID = 0 denotes sample was analyzed for total and SPLP metals, soil pH, TOC, moisture content and grain size analysis
- Sample Type ID = 1 denotes sample was analyzed for SPLP metals solely
- U and ND = Non Detect
- UJ = Estimated Non-Detect
- J = Estimated Concentration

Table D-2  
 Selenium SPLP Results

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
A-1	12b-021745	0	Selenium, Total	1.5	1.5	U	mg/kg	13.4-15.4	6/21/2004	ND
A-1	12b-021745	0	Selenium, SPLP Leachate	5	5	U	ug/L	13.4-15.4	6/21/2004	
A-1	12b-021763	1	Selenium, SPLP Leachate	5	5	UJ	ug/L	13.4-15.4	6/21/2004	
A-1	12b-021764	1	Selenium, SPLP Leachate	5	5	UJ	ug/L	13.4-15.4	6/21/2004	
A-2	12b-021746	0	Selenium, Total	2	2	U	mg/kg	6.3-7.1	6/22/2004	ND
A-2	12b-021746	0	Selenium, SPLP Leachate	2.6	5	U	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021766	1	Selenium, SPLP Leachate	5	5	UJ	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021765	1	Selenium, SPLP Leachate	5	5	UJ	ug/L	6.3-7.1	6/22/2004	
A-3	12b-021747	0	Selenium, Total	1.3	1.3	U	mg/kg	6.3-8.3	6/21/2004	ND
A-3	12b-021747	0	Selenium, SPLP Leachate	5	5	U	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021767	1	Selenium, SPLP Leachate	5	5	UJ	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021768	1	Selenium, SPLP Leachate	5	5	UJ	ug/L	6.3-8.3	6/21/2004	
A-4	12b-021748	0	Selenium, Total	1.9	1.9	UJ	mg/kg	9.4-10.4	6/23/2004	ND
A-4	12b-021748	0	Selenium, SPLP Leachate	5	5	U	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021769	1	Selenium, SPLP Leachate	5	5	U	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021770	1	Selenium, SPLP Leachate	5	5	U	ug/L	9.4-10.4	6/23/2004	
A-5	12b-021749	0	Selenium, Total	2	2	UJ	mg/kg	10.4-11.4	6/23/2004	ND
A-5	12b-021749	0	Selenium, SPLP Leachate	1.5	5	U	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021772	1	Selenium, SPLP Leachate	5	5	U	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021771	1	Selenium, SPLP Leachate	5	5	U	ug/L	10.4-11.4	6/23/2004	
A-6	12b-021750	0	Selenium, Total	2	2	UJ	mg/kg	5.9-7.9	6/25/2004	ND
A-6	12b-021750	0	Selenium, SPLP Leachate	2.4	5	U	ug/L	5.9-7.9	6/25/2004	
A-6	12b-021773	1	Selenium, SPLP Leachate	5	5	U	ug/L	5.9-7.9	6/25/2004	
A-6	12b-021774	1	Selenium, SPLP Leachate	5	5	U	ug/L	5.9-7.9	6/25/2004	
A-7	12b-021799	0	Selenium, Total	3	3	U	mg/kg	9-11	6/21/2004	ND
A-7	12b-021799	0	Selenium, SPLP Leachate	5	5	U	ug/L	9-11	6/21/2004	
A-7	12b-021800	1	Selenium, SPLP Leachate	25	25	UJ	ug/L	9-11	6/21/2004	
A-7	12b-021801	1	Selenium, SPLP Leachate	25	25	UJ	ug/L	9-11	6/21/2004	
A-8	12b-021814	0	Selenium, Total	1.8	1.8	UJ	mg/kg	11.2-12.4	6/25/2004	ND
A-8	12b-021814	0	Selenium, SPLP Leachate	5	5	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021816	1	Selenium, SPLP Leachate	5	5	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021815	1	Selenium, SPLP Leachate	1.5	5	U	ug/L	11.2-12.4	6/25/2004	
B-1	12b-021751	0	Selenium, Total	1.8	1.8	UJ	mg/kg	12.4-13.4	6/23/2004	ND
B-1	12b-021751	0	Selenium, SPLP Leachate	5	5	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021776	1	Selenium, SPLP Leachate	5	5	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021775	1	Selenium, SPLP Leachate	5	5	U	ug/L	12.4-13.4	6/23/2004	
B-3	12b-021753	0	Selenium, Total	2.1	2.1	UJ	mg/kg	7.8-9	6/23/2004	ND
B-3	12b-021753	0	Selenium, SPLP Leachate	5	5	U	ug/L	7.8-9	6/23/2004	
B-3	12b-021780	1	Selenium, SPLP Leachate	1.3	5	U	ug/L	7.8-9	6/23/2004	
B-3	12b-021779	1	Selenium, SPLP Leachate	5	5	U	ug/L	7.8-9	6/23/2004	
B-4	12b-021754	0	Selenium, Total	1.9	1.9	U	mg/kg	10-11.3	6/22/2004	ND

Table D-2  
 Selenium SPLP Results

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
B-4	12b-021754	0	Selenium, SPLP Leachate	4.8	5	U	ug/L	10-11.3	6/22/2004	
B-4	12b-021781	1	Selenium, SPLP Leachate	5	5	UJ	ug/L	10-11.3	6/22/2004	
B-4	12b-021782	1	Selenium, SPLP Leachate	5	5	UJ	ug/L	10-11.3	6/22/2004	
B-5	12b-021817	0	Selenium, Total	2.6	2.6	UJ	mg/kg	12.4-14.4	6/25/2004	ND
B-5	12b-021817	0	Selenium, SPLP Leachate	2.1	5	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021819	1	Selenium, SPLP Leachate	1.8	5	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021818	1	Selenium, SPLP Leachate	5	5	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021755	0	Selenium, Total	1.2	1.2	U	mg/kg	15.7-17.7	6/22/2004	ND
B-5	12b-021755	0	Selenium, SPLP Leachate	5	5	U	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021784	1	Selenium, SPLP Leachate	5	5	UJ	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021783	1	Selenium, SPLP Leachate	5	5	UJ	ug/L	15.7-17.7	6/22/2004	
B-6	12b-021756	0	Selenium, Total	2.3	2.3	U	mg/kg	7.8-8.8	6/22/2004	ND
B-6	12b-021756	0	Selenium, SPLP Leachate	5	5	U	ug/L	7.8-8.8	6/22/2004	
B-6	12b-021785	1	Selenium, SPLP Leachate	5	5	UJ	ug/L	7.8-8.8	6/22/2004	
B-6	12b-021786	1	Selenium, SPLP Leachate	5	5	UJ	ug/L	7.8-8.8	6/22/2004	
B-7	12b-021752	0	Selenium, Total	3	3	UJ	mg/kg	8.1-9.1	6/23/2004	ND
B-7	12b-021752	0	Selenium, SPLP Leachate	1.7	5	U	ug/L	8.1-9.1	6/23/2004	
B-7	12b-021777	1	Selenium, SPLP Leachate	5	5	U	ug/L	8.1-9.1	6/23/2004	
B-7	12b-021778	1	Selenium, SPLP Leachate	5	5	U	ug/L	8.1-9.1	6/23/2004	
C-1	12b-021757	0	Selenium, Total	1.6	1.6	UJ	mg/kg	10.2-11.2	6/24/2004	ND
C-1	12b-021757	0	Selenium, SPLP Leachate	5	5	U	ug/L	10.2-11.2	6/24/2004	
C-1	12b-021788	1	Selenium, SPLP Leachate	5	5	U	ug/L	10.2-11.2	6/24/2004	
C-1	12b-021787	1	Selenium, SPLP Leachate	5	5	U	ug/L	10.2-11.2	6/24/2004	
C-2	12b-021758	0	Selenium, Total	2.1	2.1	UJ	mg/kg	8.6-10.6	6/24/2004	ND
C-2	12b-021758	0	Selenium, SPLP Leachate	5	5	U	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021789	1	Selenium, SPLP Leachate	5	5	U	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021790	1	Selenium, SPLP Leachate	5	5	U	ug/L	8.6-10.6	6/24/2004	
C-3	12b-021759	0	Selenium, Total	1.7	1.7	UJ	mg/kg	9.6-10.6	6/24/2004	ND
C-3	12b-021759	0	Selenium, SPLP Leachate	5	5	U	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021792	1	Selenium, SPLP Leachate	5	5	U	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021791	1	Selenium, SPLP Leachate	5	5	U	ug/L	9.6-10.6	6/24/2004	
C-5	12b-021761	0	Selenium, Total	2	2	UJ	mg/kg	8.6-9.6	6/24/2004	ND
C-5	12b-021761	0	Selenium, SPLP Leachate	5	5	U	ug/L	8.6-9.6	6/24/2004	
C-5	12b-021796	1	Selenium, SPLP Leachate	5	5	U	ug/L	8.6-9.6	6/24/2004	
C-5	12b-021795	1	Selenium, SPLP Leachate	1.7	5	U	ug/L	8.6-9.6	6/24/2004	
C-6	12b-021762	0	Selenium, Total	1.5	1.5	UJ	mg/kg	12.6-13.6	6/24/2004	ND
C-6	12b-021762	0	Selenium, SPLP Leachate	2.4	5	U	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021797	1	Selenium, SPLP Leachate	5	5	U	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021798	1	Selenium, SPLP Leachate	5	5	U	ug/L	12.6-13.6	6/24/2004	
C-7	12b-021760	0	Selenium, Total	2	2	UJ	mg/kg	7.6-8.6	6/25/2004	ND
C-7	12b-021760	0	Selenium, SPLP Leachate	5	5	U	ug/L	7.6-8.6	6/25/2004	

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
C-7	12b-021793	1	Selenium, SPLP Leachate	5	5	U	ug/L	7.6-8.6	6/25/2004	
C-7	12b-021794	1	Selenium, SPLP Leachate	5	5	U	ug/L	7.6-8.6	6/25/2004	
C-8	12b-021811	0	Selenium, Total	1.8	1.8	UJ	mg/kg	4.7-6.2	6/25/2004	ND
C-8	12b-021811	0	Selenium, SPLP Leachate	2.2	5	U	ug/L	4.7-6.2	6/25/2004	
C-8	12b-021812	1	Selenium, SPLP Leachate	5	5	U	ug/L	4.7-6.2	6/25/2004	
C-8	12b-021813	1	Selenium, SPLP Leachate	1.7	5	U	ug/L	4.7-6.2	6/25/2004	

Notes

- ug/L = Micrograms per Liter
- mg/kg = Milligrams Per Kilogram
- Sample Type ID = 0 denotes sample was analyzed for total and SPLP metals, soil pH, TOC, moisture content and grain size analysis
- Sample Type ID = 1 denotes sample was analyzed for SPLP metals solely
- U and ND = Non Detect
- UJ = Estimated Non-Detect
- J = Estimated Concentration

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
A-1	12b-021745	0	Thallium, Total	0.11	0.11	U	mg/kg	13.4-15.4	6/21/2004	ND
A-1	12b-021745	0	Thallium, SPLP Leachate	2	2	U	ug/L	13.4-15.4	6/21/2004	
A-1	12b-021763	1	Thallium, SPLP Leachate	2	2	U	ug/L	13.4-15.4	6/21/2004	
A-1	12b-021764	1	Thallium, SPLP Leachate	0.59	2	U	ug/L	13.4-15.4	6/21/2004	
A-2	12b-021746	0	Thallium, Total	0.13	0.13	U	mg/kg	6.3-7.1	6/22/2004	ND
A-2	12b-021746	0	Thallium, SPLP Leachate	2	2	U	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021766	1	Thallium, SPLP Leachate	2	2	U	ug/L	6.3-7.1	6/22/2004	
A-2	12b-021765	1	Thallium, SPLP Leachate	2	2	U	ug/L	6.3-7.1	6/22/2004	
A-3	12b-021747	0	Thallium, Total	0.12	0.12	U	mg/kg	6.3-8.3	6/21/2004	ND
A-3	12b-021747	0	Thallium, SPLP Leachate	2	2	U	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021767	1	Thallium, SPLP Leachate	2	2	U	ug/L	6.3-8.3	6/21/2004	
A-3	12b-021768	1	Thallium, SPLP Leachate	2	2	U	ug/L	6.3-8.3	6/21/2004	
A-4	12b-021748	0	Thallium, Total	0.079	2	UJ	mg/kg	9.4-10.4	6/23/2004	ND
A-4	12b-021748	0	Thallium, SPLP Leachate	2	2	U	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021769	1	Thallium, SPLP Leachate	4	4	U	ug/L	9.4-10.4	6/23/2004	
A-4	12b-021770	1	Thallium, SPLP Leachate	4	4	U	ug/L	9.4-10.4	6/23/2004	
A-5	12b-021749	0	Thallium, Total	0.083	2	UJ	mg/kg	10.4-11.4	6/23/2004	ND
A-5	12b-021749	0	Thallium, SPLP Leachate	2	2	U	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021772	1	Thallium, SPLP Leachate	4	4	U	ug/L	10.4-11.4	6/23/2004	
A-5	12b-021771	1	Thallium, SPLP Leachate	4	4	U	ug/L	10.4-11.4	6/23/2004	
A-6	12b-021750	0	Thallium, Total	1.4	1.4	U	mg/kg	5.9-7.9	6/25/2004	ND
A-6	12b-021750	0	Thallium, SPLP Leachate	2	2	U	ug/L	5.9-7.9	6/25/2004	
A-6	12b-021773	1	Thallium, SPLP Leachate	4	4	U	ug/L	5.9-7.9	6/25/2004	
A-6	12b-021774	1	Thallium, SPLP Leachate	4	4	U	ug/L	5.9-7.9	6/25/2004	
A-7	12b-021799	0	Thallium, Total	0.14	0.19	U	mg/kg	9-11	6/21/2004	ND
A-7	12b-021799	0	Thallium, SPLP Leachate	2	2	U	ug/L	9-11	6/21/2004	
A-7	12b-021800	1	Thallium, SPLP Leachate	2	2	U	ug/L	9-11	6/21/2004	
A-7	12b-021801	1	Thallium, SPLP Leachate	2	2	U	ug/L	9-11	6/21/2004	
A-8	12b-021814	0	Thallium, Total	1.2	1.2	U	mg/kg	11.2-12.4	6/25/2004	ND
A-8	12b-021814	0	Thallium, SPLP Leachate	2	2	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021816	1	Thallium, SPLP Leachate	4	4	U	ug/L	11.2-12.4	6/25/2004	
A-8	12b-021815	1	Thallium, SPLP Leachate	4	4	U	ug/L	11.2-12.4	6/25/2004	
B-1	12b-021751	0	Thallium, Total	0.074	2	UJ	mg/kg	12.4-13.4	6/23/2004	ND
B-1	12b-021751	0	Thallium, SPLP Leachate	2	2	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021776	1	Thallium, SPLP Leachate	4	4	U	ug/L	12.4-13.4	6/23/2004	
B-1	12b-021775	1	Thallium, SPLP Leachate	4	4	U	ug/L	12.4-13.4	6/23/2004	
B-3	12b-021753	0	Thallium, Total	0.1	2	UJ	mg/kg	7.8-9	6/23/2004	ND
B-3	12b-021753	0	Thallium, SPLP Leachate	0.48	2	U	ug/L	7.8-9	6/23/2004	
B-3	12b-021780	1	Thallium, SPLP Leachate	4	4	U	ug/L	7.8-9	6/23/2004	
B-3	12b-021779	1	Thallium, SPLP Leachate	4	4	U	ug/L	7.8-9	6/23/2004	

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
B-4	12b-021754	0	Thallium, Total	0.13	0.13	U	mg/kg	10-11.3	6/22/2004	ND
B-4	12b-021754	0	Thallium, SPLP Leachate	2	2	U	ug/L	10-11.3	6/22/2004	
B-4	12b-021781	1	Thallium, SPLP Leachate	2	2	U	ug/L	10-11.3	6/22/2004	
B-4	12b-021782	1	Thallium, SPLP Leachate	2	2	U	ug/L	10-11.3	6/22/2004	
B-5	12b-021817	0	Thallium, Total	1.8	1.8	U	mg/kg	12.4-14.4	6/25/2004	ND
B-5	12b-021817	0	Thallium, SPLP Leachate	2	2	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021819	1	Thallium, SPLP Leachate	4	4	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021818	1	Thallium, SPLP Leachate	4	4	U	ug/L	12.4-14.4	6/25/2004	
B-5	12b-021755	0	Thallium, Total	0.11	0.11	U	mg/kg	15.7-17.7	6/22/2004	ND
B-5	12b-021755	0	Thallium, SPLP Leachate	2	2	U	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021784	1	Thallium, SPLP Leachate	2	2	U	ug/L	15.7-17.7	6/22/2004	
B-5	12b-021783	1	Thallium, SPLP Leachate	2	2	U	ug/L	15.7-17.7	6/22/2004	
B-6	12b-021756	0	Thallium, Total	0.16	0.16	U	mg/kg	7.8-8.8	6/22/2004	ND
B-6	12b-021756	0	Thallium, SPLP Leachate	2	2	U	ug/L	7.8-8.8	6/22/2004	
B-6	12b-021785	1	Thallium, SPLP Leachate	2	2	U	ug/L	7.8-8.8	6/22/2004	
B-6	12b-021786	1	Thallium, SPLP Leachate	2	2	U	ug/L	7.8-8.8	6/22/2004	
B-7	12b-021752	0	Thallium, Total	0.46		J	mg/kg	8.1-9.1	6/23/2004	ND
B-7	12b-021752	0	Thallium, SPLP Leachate	0.9	2	U	ug/L	8.1-9.1	6/23/2004	
B-7	12b-021777	1	Thallium, SPLP Leachate	4	4	U	ug/L	8.1-9.1	6/23/2004	
B-7	12b-021778	1	Thallium, SPLP Leachate	4	4	U	ug/L	8.1-9.1	6/23/2004	
C-1	12b-021757	0	Thallium, Total	1.2	1.2	UJ	mg/kg	10.2-11.2	6/24/2004	0.88
C-1	12b-021757	0	Thallium, SPLP Leachate	0.88	2	J	ug/L	10.2-11.2	6/24/2004	
C-1	12b-021788	1	Thallium, SPLP Leachate	4	4	U	ug/L	10.2-11.2	6/24/2004	
C-1	12b-021787	1	Thallium, SPLP Leachate	4	4	U	ug/L	10.2-11.2	6/24/2004	
C-2	12b-021758	0	Thallium, Total	1.2	1.2	UJ	mg/kg	8.6-10.6	6/24/2004	ND
C-2	12b-021758	0	Thallium, SPLP Leachate	2	2	U	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021789	1	Thallium, SPLP Leachate	4	4	U	ug/L	8.6-10.6	6/24/2004	
C-2	12b-021790	1	Thallium, SPLP Leachate	4	4	U	ug/L	8.6-10.6	6/24/2004	
C-3	12b-021759	0	Thallium, Total	1.2	1.2	UJ	mg/kg	9.6-10.6	6/24/2004	ND
C-3	12b-021759	0	Thallium, SPLP Leachate	2	2	U	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021792	1	Thallium, SPLP Leachate	4	4	U	ug/L	9.6-10.6	6/24/2004	
C-3	12b-021791	1	Thallium, SPLP Leachate	4	4	U	ug/L	9.6-10.6	6/24/2004	
C-5	12b-021761	0	Thallium, Total	1.2	1.2	UJ	mg/kg	8.6-9.6	6/24/2004	ND
C-5	12b-021761	0	Thallium, SPLP Leachate	2	2	U	ug/L	8.6-9.6	6/24/2004	
C-5	12b-021796	1	Thallium, SPLP Leachate	4	4	U	ug/L	8.6-9.6	6/24/2004	
C-5	12b-021795	1	Thallium, SPLP Leachate	4	4	U	ug/L	8.6-9.6	6/24/2004	
C-6	12b-021762	0	Thallium, Total	1.2	1.2	UJ	mg/kg	12.6-13.6	6/24/2004	ND
C-6	12b-021762	0	Thallium, SPLP Leachate	2	2	U	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021797	1	Thallium, SPLP Leachate	4	4	U	ug/L	12.6-13.6	6/24/2004	
C-6	12b-021798	1	Thallium, SPLP Leachate	1.2	4	U	ug/L	12.6-13.6	6/24/2004	

FUSRAP Maywood Superfund Site, Maywood, NJ

Boring	S&W Lab Sample ID	Sample Type ID	Analysis Name	Result	Detection Limit	Result Qualifier	Unit of Measure	Depth of Measure (ft bgs)	Collection Date	Average Leachate Concentration (ug/L)
C-7	12b-021760	0	Thallium, Total	1.2	1.2	U	mg/kg	7.6-8.6	6/25/2004	1.2
C-7	12b-021760	0	Thallium, SPLP Leachate	2	2	U	ug/L	7.6-8.6	6/25/2004	
C-7	12b-021793	1	Thallium, SPLP Leachate	4	4	U	ug/L	7.6-8.6	6/25/2004	
C-7	12b-021794	1	Thallium, SPLP Leachate	1.2	4	J	ug/L	7.6-8.6	6/25/2004	
C-8	12b-021811	0	Thallium, Total	1.2	1.2	U	mg/kg	4.7-6.2	6/25/2004	ND
C-8	12b-021811	0	Thallium, SPLP Leachate	2	2	U	ug/L	4.7-6.2	6/25/2004	
C-8	12b-021812	1	Thallium, SPLP Leachate	4	4	U	ug/L	4.7-6.2	6/25/2004	
C-8	12b-021813	1	Thallium, SPLP Leachate	4	4	U	ug/L	4.7-6.2	6/25/2004	

Notes

ug/L = Micrograms per Liter  
 mg/kg = Milligrams Per Kilogram  
 Sample Type ID = 0 denotes sample was analyzed for total and SPLP metals, soil pH, TOC, moisture content and grain size analysis  
 Sample Type ID = 1 denotes sample was analyzed for SPLP metals solely



**APPENDIX E**  
**DILUTION ATTENUATION FACTOR (DAF) CALCULATION**  
**SENSITIVITY ANALYSIS**

This page intentionally left blank.

Sensitivity Analysis to Varying Infiltration Rate and Source Length on the Dilution Attenuation Factor (DAF)

Soil Screening level Technical Memorandum

Hydraulic Conductivity, K (m/yr)	Hydraulic Gradient, I, (m/m)	Infiltration Rate (m/yr)	Source Length, L, (m)	Aquifer Thickness, D, (m)	Dilution Attenuation Factor (DAF) *
(m/yr)	(m/m)	(m/yr)	(m)	(m)	(unitless)
2043	0.011	0.18	20	3.00	19.73
2043	0.011	0.363	20	3.00	10.29
2043	0.011	0.18	10	3.00	38.46
2043	0.011	0.363	10	3.00	19.57
2043	0.011	0.18	30	3.00	13.49
2043	0.011	0.363	30	3.00	7.19

Notes:

EPA Default Infiltration Rate = 0.18 m/yr  
 Infiltration Rate Based on NJ Recharge Calculation = 0.363 m/yr (see attachment)



## **APPENDIX F NJDEP SPLP-IGWSRS DRAFT PROCEDURE**

This page intentionally left blank.

108783.05050000

**State of New Jersey**

Department of Environmental Protection

James E. McGreevey  
GovernorBradley M. Campbell  
Commissioner

May 5, 2004

Allen Roos, Project Manager  
U.S. Army Corps of Engineers  
100 West Hunter Ave.  
Maywood, NJ 07607RE: Soil Screening Level Work Plan, Revision 0  
Maywood Chemical Superfund/FUSRAP Site  
Maywood Borough, Bergen County

Dear Mr. Roos:

The New Jersey Department of Environmental Protection (NJDEP) is in receipt of the Soil Screening Level Work Plan, Revision 0 dated January 2004 and received January 28, 2004.

In the Work Plan, USACE proposes to calculate soil screening levels for selected metal contaminants of concern using the methodology described in the Soil Screening Guidance (USEPA 1996). USACE proposes to develop site-specific soil screening levels based upon the calculated dilution attenuation factor (DAF), total metal concentrations in soil and USEPA's Synthetic Precipitation Leaching Procedure (SPLP) metal results.

Upon review, NJDEP finds that USACE's proposal is generally acceptable. However, in addition to following the Soil Screening Guidance, USACE must to follow NJDEP's Draft Procedure for using SPLP results to develop Impact to Ground Water Site-Specific Remediation Standards. A copy of the Draft Procedure is attached for your convenience. Specific comments are discussed below.

**Section 5.0 – Data Evaluation**

1. It is stated that a DAF will be calculated using site-specific information. NJDEP has developed a generic DAF, but allows for modifications under certain conditions. Please provide NJDEP with the data that will be used to calculate the DAF as soon as possible to ensure that the data is sufficient and acceptable.
2. It is stated that triplicate SPLP sample data will be averaged for each sample. NJDEP does not allow averaging where results vary greatly.
3. USACE proposes to use regression analysis to back-calculate soil screening levels. Although regression analysis is allowed, NJDEP requires that at least half of the points used in the calculation lie at or above the midpoint of the range of total soil

concentrations and that the Target Groundwater Concentrations (TGC) lie within the range of measured leachate concentrations.

4. Please note that the TGC equals the DAF times the health based New Jersey Ground Water Quality Criteria (identified in Table 1 of N.J.A.C. 7:9-6).

If you have any questions regarding this letter, please do not hesitate to contact me at (609) 633-1494.

Sincerely,



Donna L. Gaffigan, Case Manager  
Bureau of Case Management

Enclosure

C: Steven Byrnes, BEERA  
Swati Toppin, BEERA  
Greg Rapp, BGWPA  
Angela Carpenter, USEPA

## DRAFT PROCEDURE

### Using the SPLP test to develop an alternative number-

The Synthetic Precipitation Leaching Procedure (SPLP, USEPA Method 1312) can be used to determine how much of the contaminant will actually leach from the soil. The conditions of the test are more realistic than the TCLP in that they mimic leachate during acid rain conditions. Since actual contaminated soil from the site is used, the numbers generated using this approach are indeed site specific.

### Sampling procedures and numbers required for SPLP.

Discrete samples must be collected for SPLP tests. At least one sample must be taken from each area of concern in question, or if there is only one area of concern, a minimum of 3 samples. Each sample must be analyzed for the contaminants on the site. The samples must be appropriately chosen, such that they represent the highest concentrations of the chemicals for which no further action is proposed. If the soil type varies widely over the site, the results from the samples leading to the most conservative impact to groundwater number must be chosen unless a satisfactory explanation is given.

Since the calculation of a site specific Impact to Ground Water criterion involves knowing the total concentration of the soil sample, it may be time and resource saving to collect soil samples, split them and to analyze one split for SPLP and another for total concentration (of contaminant).

Currently, the SPLP procedure is not recommended for volatile organic compounds.

The sample results must pass all applicable QA/QC. A lab certified for the SPLP method must be used. In particular, leachate minimum detection limits must be below the health based Groundwater Quality Standard (GWQS) for the contaminant of concern.

### Using SPLP Results.

The results from the SPLP test may be used in one of two ways:

a). Concentrations of the contaminant in the leachate may be compared to the target groundwater concentration (TGC) for that contaminant, which is the  $GWQC \times DAF$ . (The GWQC is the health based criterion). A generic DAF may be used. If leachate concentrations are below the TGC, then the total concentration of the contaminant in that sample is acceptable as an impact to groundwater number.

b). If the leachate concentrations are greater than the TGC, then the results may be used to calculate Impact to Ground Water criteria.

*Calculation of sample-specific remediation standards from SPLP results*

When SPLP results from different samples give differing acceptable cleanup criteria the following guidance may be followed:

For each sample that yields a leachate concentration that is above the MDL, calculate a sample-specific IGWSRS using the following equation:

$$IGWSRS = C_{gw} \left\{ \left[ \frac{(C_T M_S - C_L V_L) / M_S}{C_L} \right] + \frac{\theta_w + \theta_a H'}{\rho_b} \right\} DAF$$

where  $C_T$  is the total concentration of the contaminant in soil ( $\mu\text{g}/\text{gm}$ ),  $M_S$  is the total weight of the soil sample ( $\text{gm}$ ),  $C_L$  is the concentration of contaminant in the leachate ( $\mu\text{g}/\text{ml}$ ),  $V_L$  is the volume of the leachate ( $\text{ml}$ ),  $\theta_w$  is the volume fraction of water in the original soil sample ( $\text{v}/\text{v}$ , assume generic value of 0.23 unless site-specific data indicates otherwise),  $\theta_a$  is the volume fraction of air in the original water sample ( $\text{v}/\text{v}$ , assume generic value of 0.18 unless site-specific data indicates otherwise),  $H'$  is the dimensionless Henry's law constant for the contaminant of interest,  $\rho_b$  is the dry bulk density of the soil ( $1.5 \text{ gm}/\text{ml}$ ),  $DAF$  is the dilution-attenuation factor (default = 11),  $C_{gw}$  is the health based ground water criteria for the contaminant ( $\mu\text{g}/\text{ml}$ ), not the PQL, and IGWSRS is the soil remediation standard for the soil sample ( $\mu\text{g}/\text{gm}$ ).

*Average calculated results*

An averaging procedure may be used to calculate a site-specific remediation standard. This procedure requires a minimum of 3 SPLP sample results with leachate concentrations above the MDL. Average all of the sample-specific remediation standards determined above. The averaged result is an acceptable IGWSRS, unless the sample-specific results vary by more than an order of magnitude, which indicates heterogeneous soil conditions. In that case, they may not be averaged. Proceed to the next step.

*Procedure when SPLP results vary by more than an order of magnitude.*

Identify a concentration level in the soil below which all leachate concentrations are at or below the TGC. This concentration may be used as an IGWSRS.

$$TGC = GWQC \times DAF$$

The example results below illustrate this approach.

Soil Concentration (ppm)	Leachate Concentration <del>MAAF</del> (ppm)
5	2
10	3
30	7
50	4
75	17
100	12

In the above example, if the Target Ground water Concentration is 5 ppm, an acceptable IGWSRS would be 10 ppm. Even though the 50 ppm sample yields acceptable results, the 30 ppm sample does not.



## **APPENDIX G SPLP CHEMICAL PLOTS**

This page intentionally left blank.

TABLE G-1

FUSRAP MAYWOOD SUPERFUND SITE

SPLP Results for Antimony

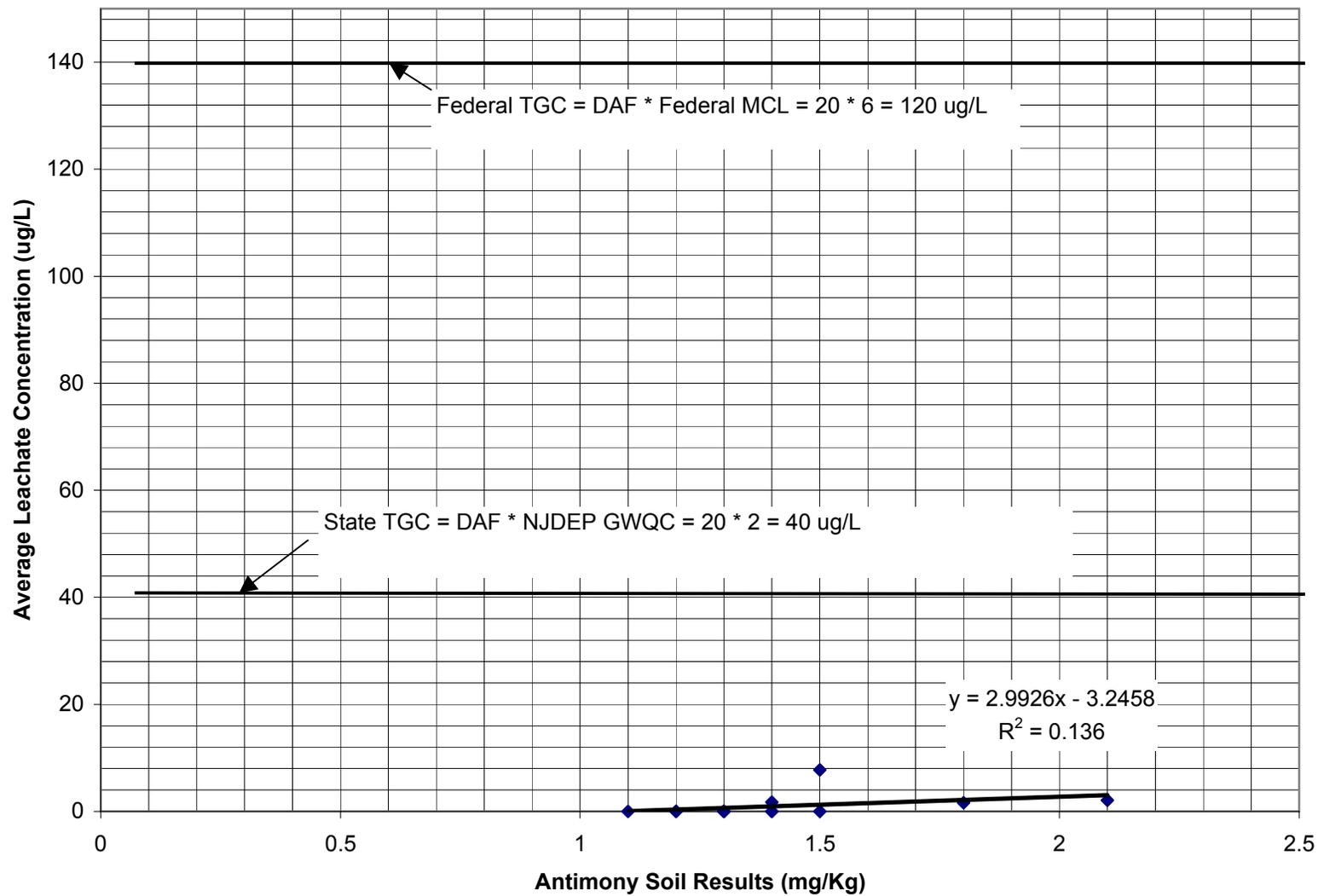


TABLE G-2

FUSRAP MAYWOOD SUPERFUND SITE

SPLP Results for Arsenic

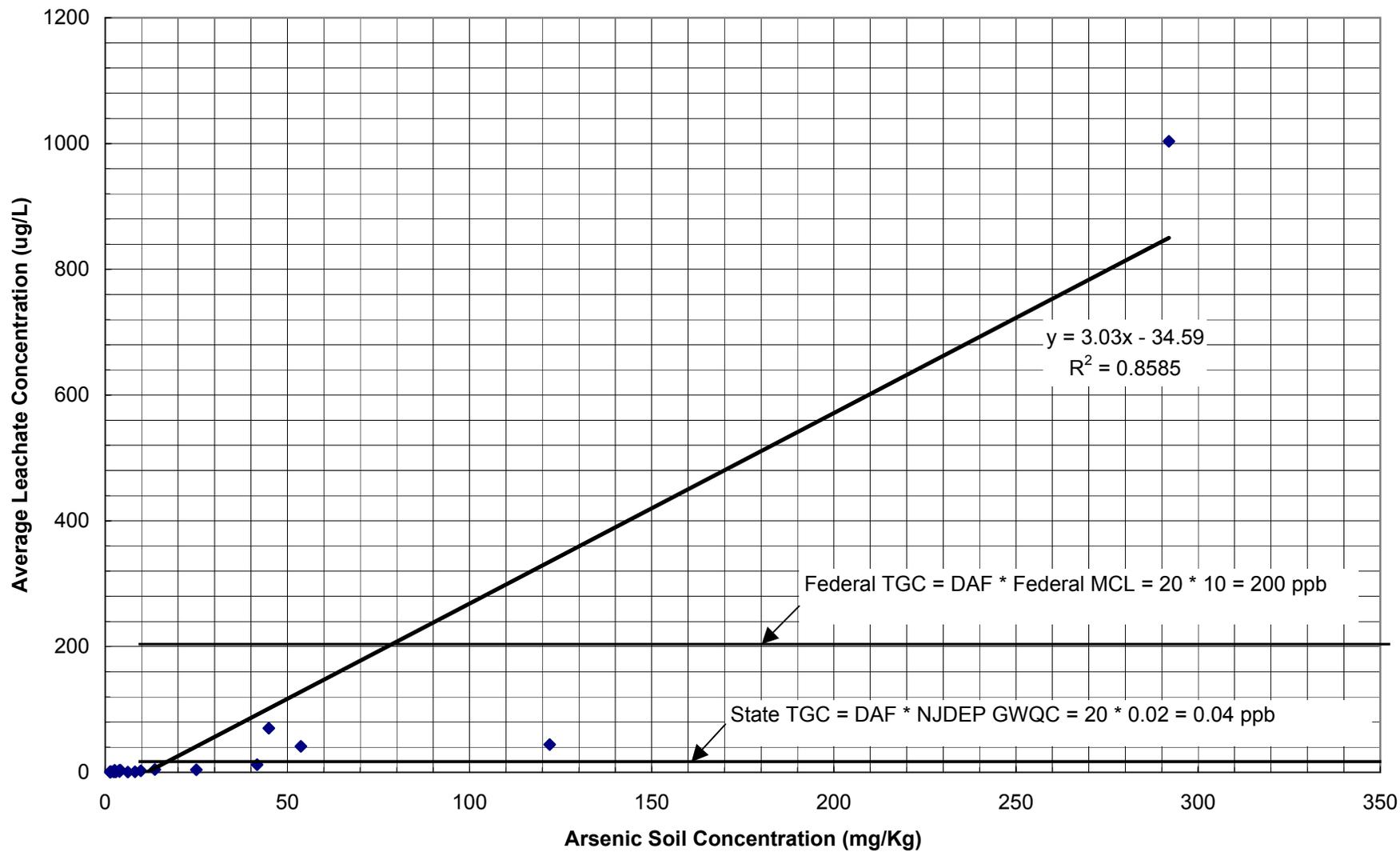


TABLE G-3

FUSRAP MAYWOOD SUPERFUND SITE

SPLP Results for Barium

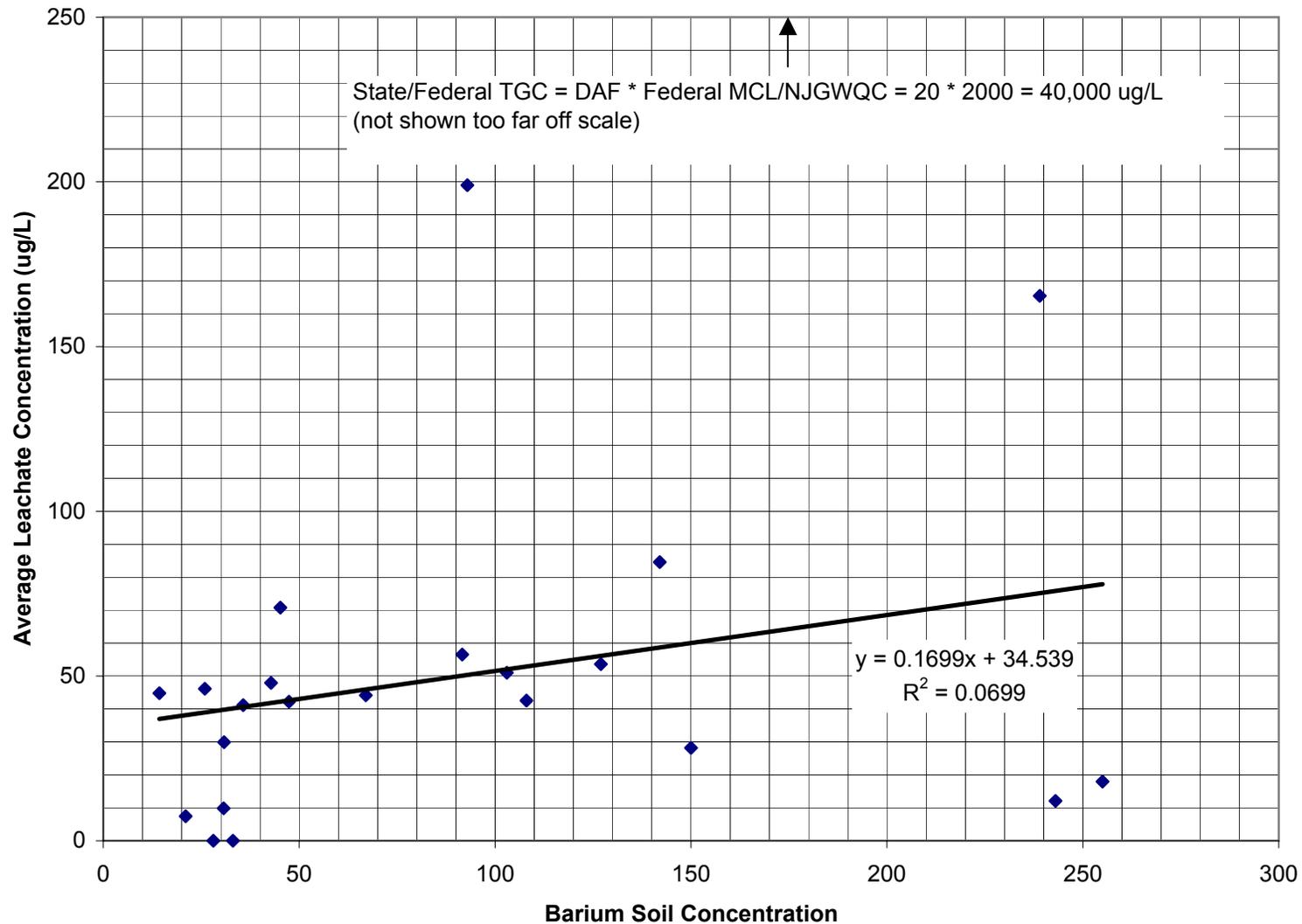


TABLE G-4

FUSRAP MAYWOOD SUPERFUND SITE

SPLP Results for Beryllium

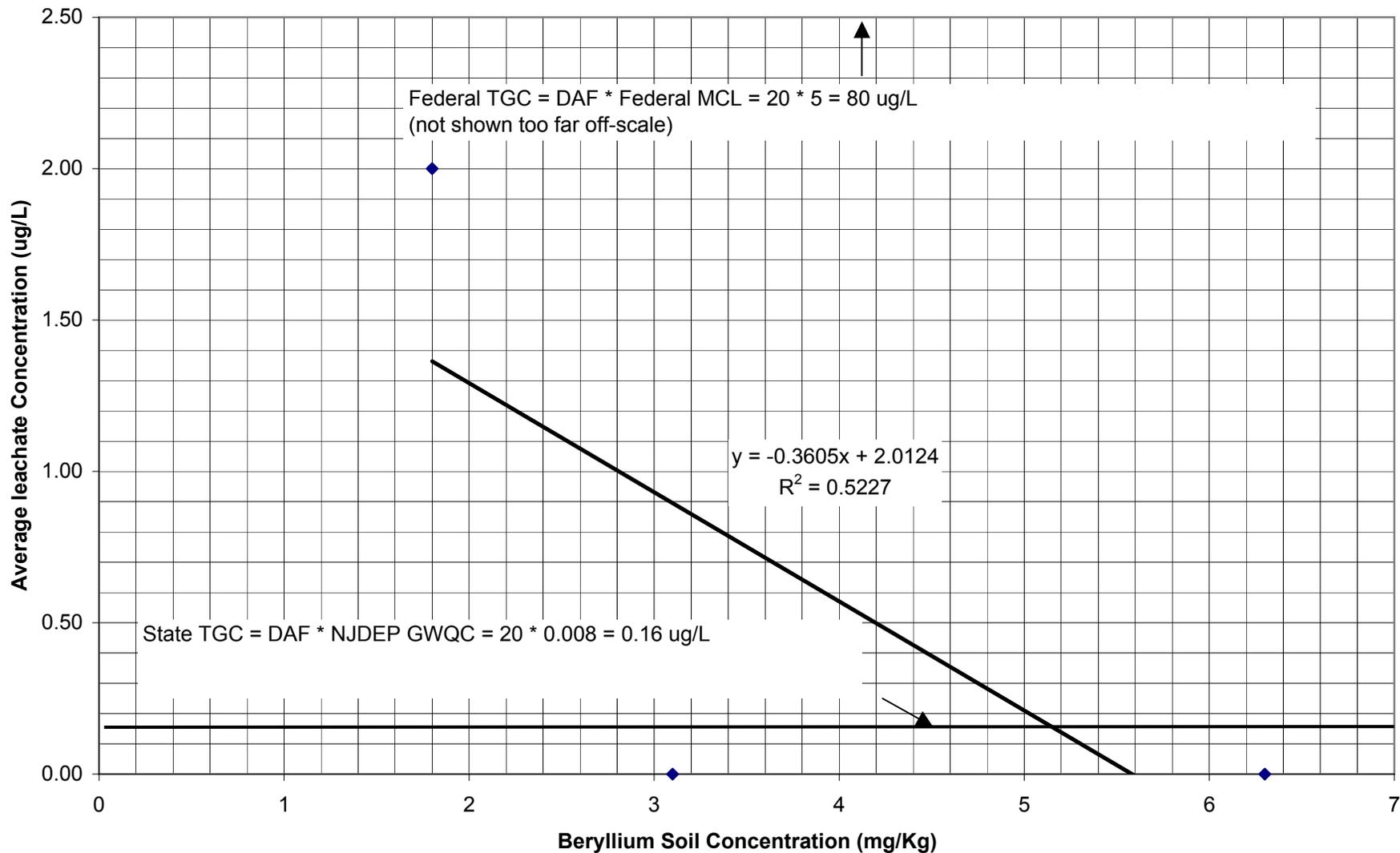


TABLE G-5

FUSRAP MAYWOOD SUPERFUND SITE

SPLP Results for Boron

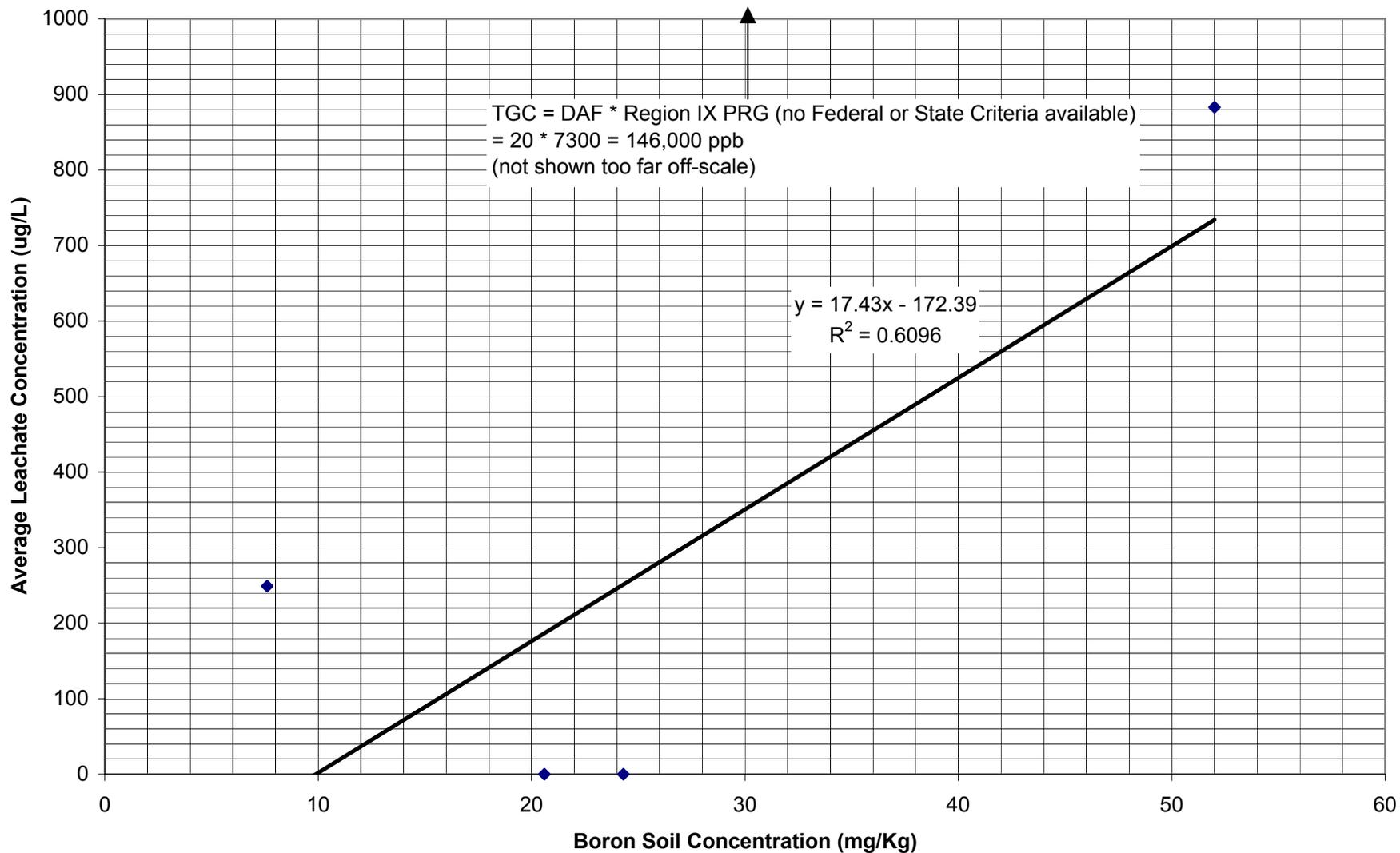


TABLE G-6

FUSRAP MAYWOOD SUPERFUND SITE

SPLP Results for Cadmium

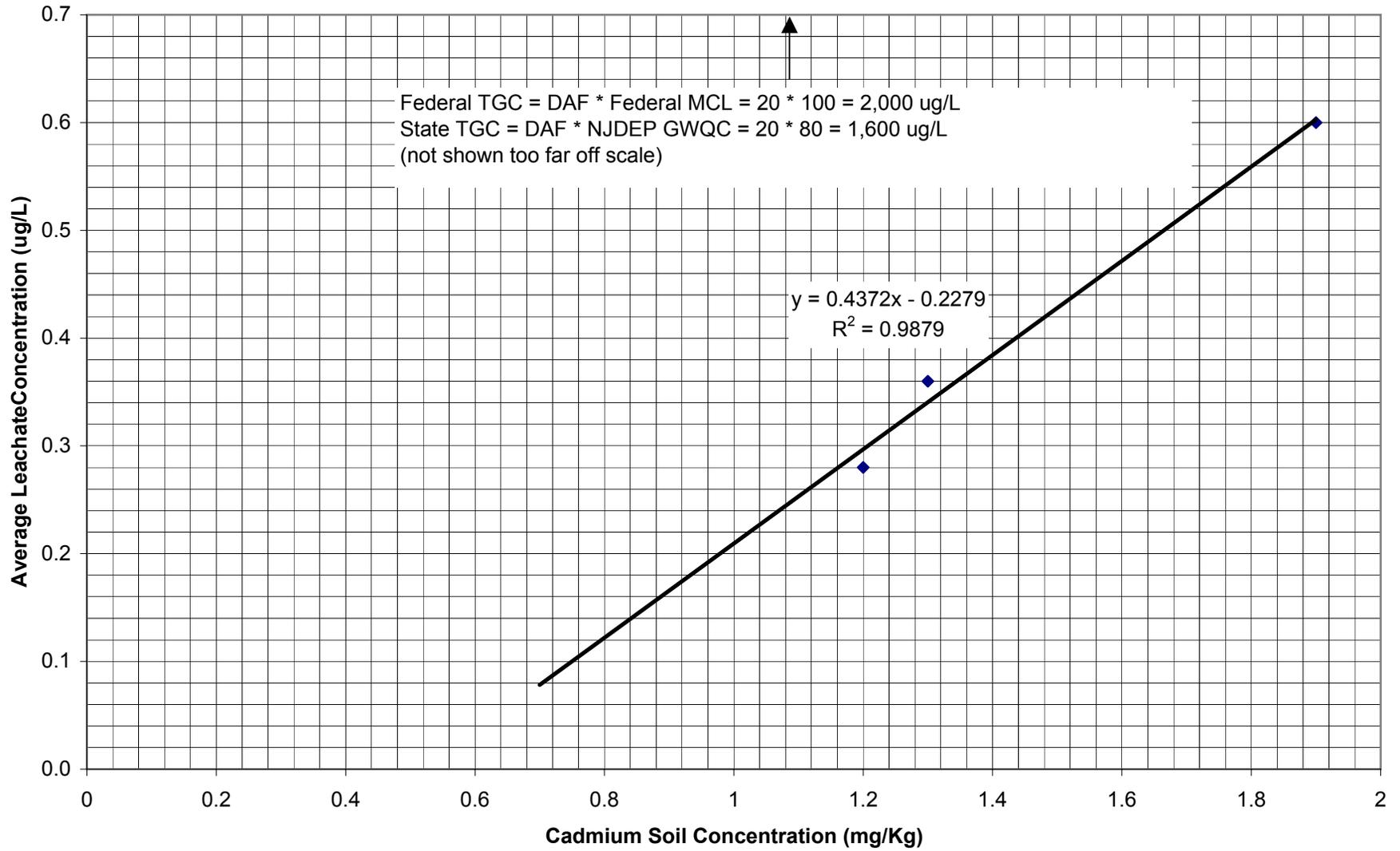


TABLE G-7

FUSRAP MAYWOOD SUPERFUND SITE

SPLP Results for Chromium

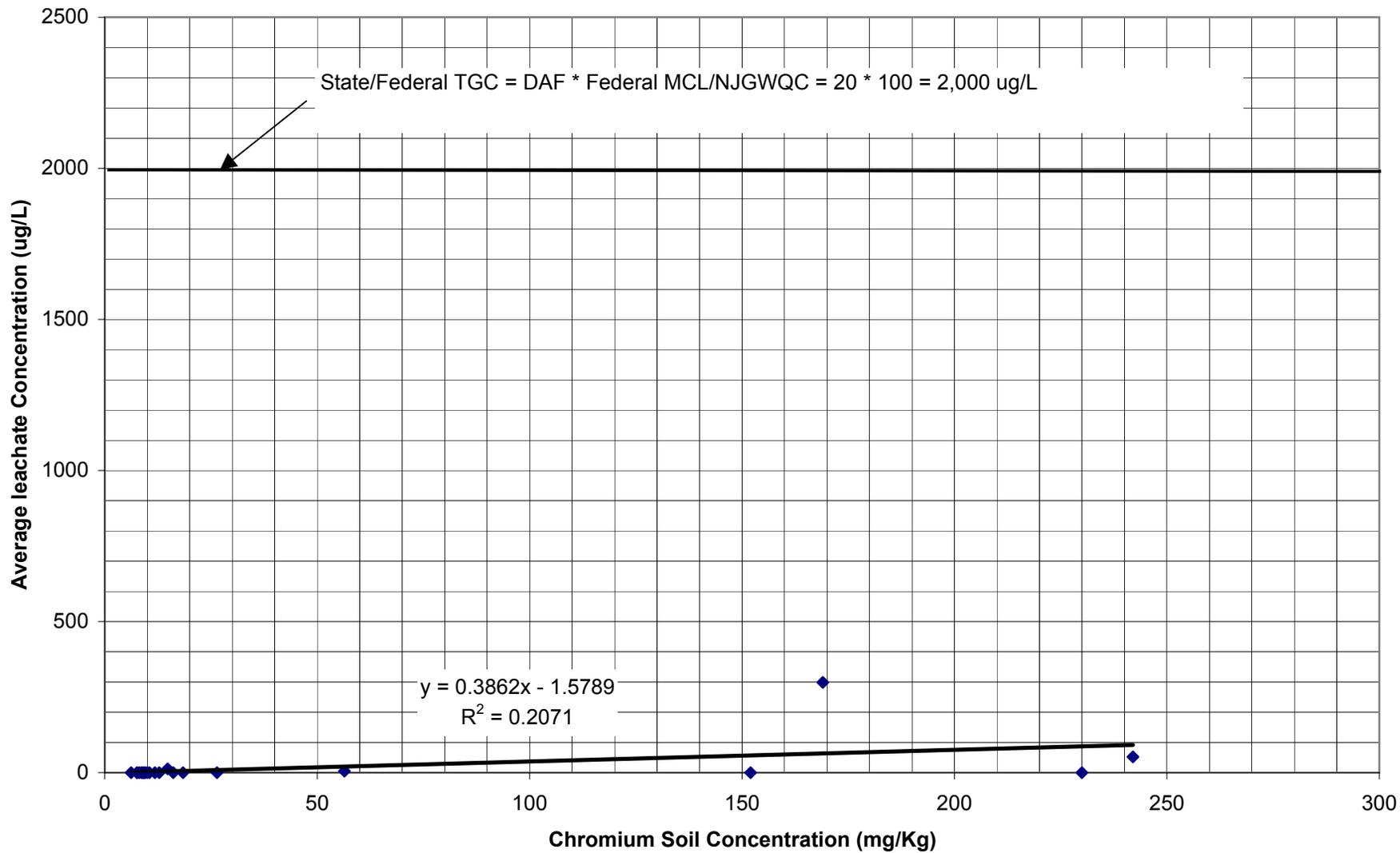


TABLE G-8

FUSRAP MAYWOOD SUPERFUND SITE

SPLP Results for Copper

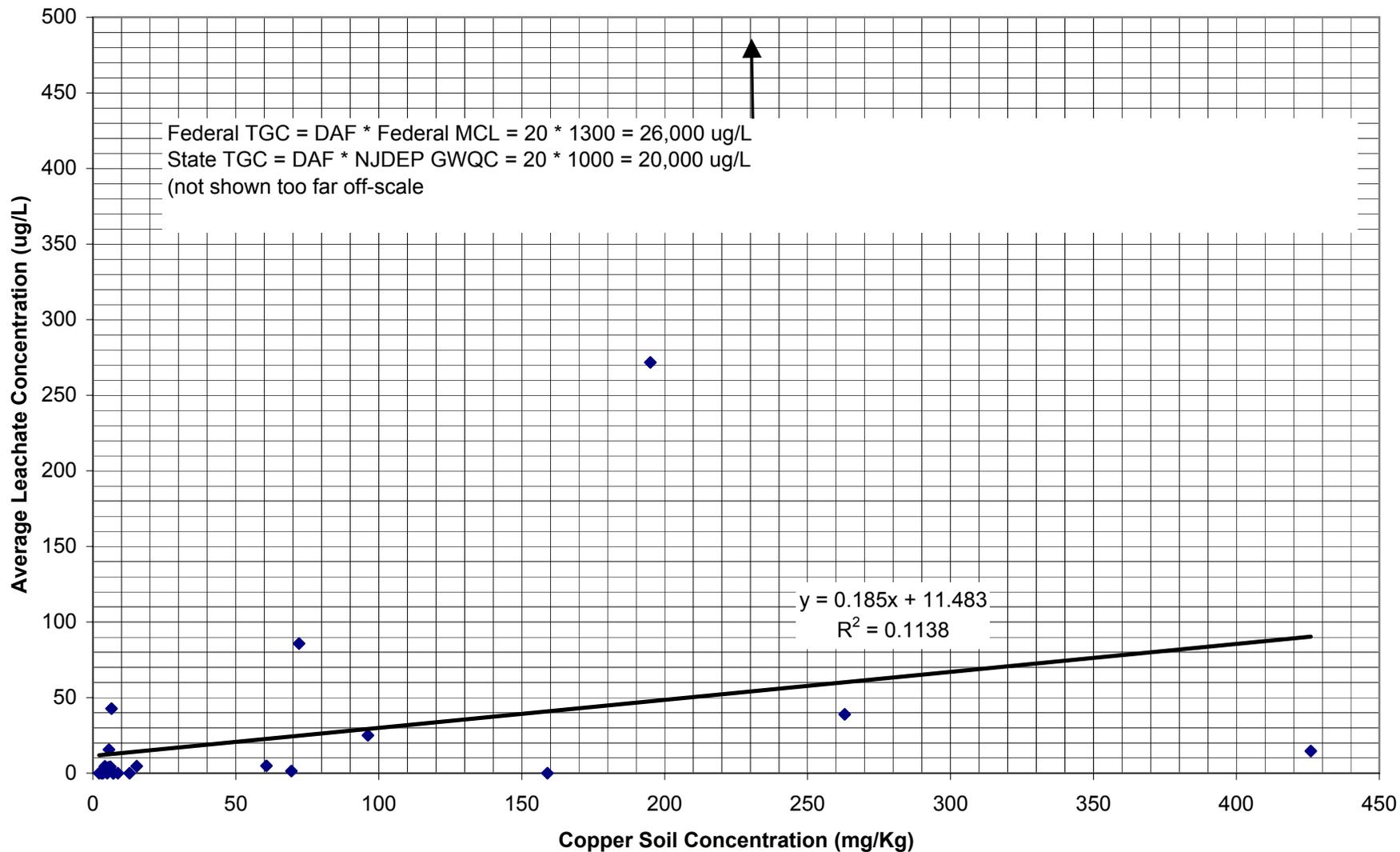


TABLE G-9

FUSRAP MAYWOOD SUPERFUND SITE

SPLP Results for Lead

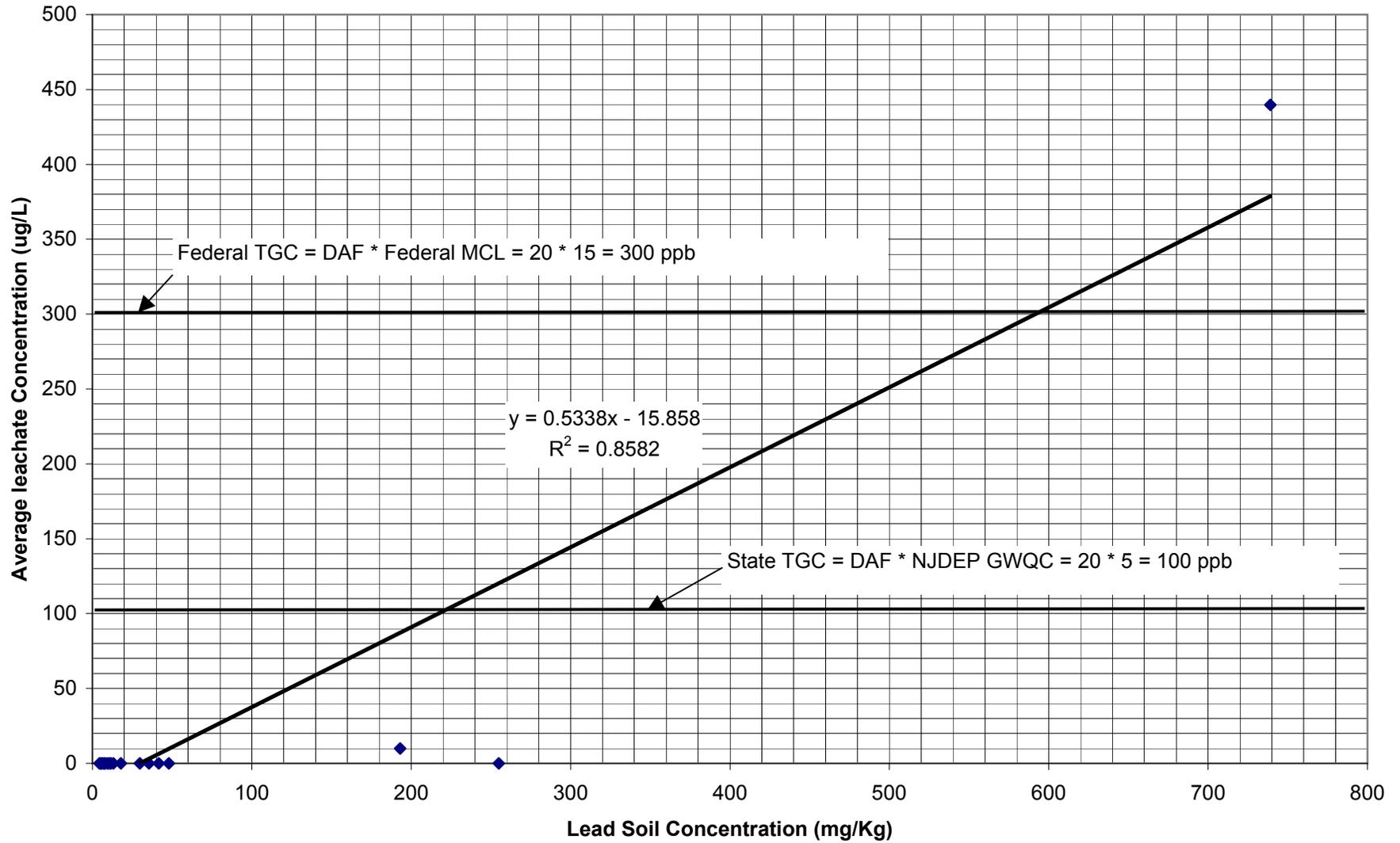


TABLE G-10

FUSRAP MAYWOOD SUPERFUND SITE

SPLP Results for Lithium

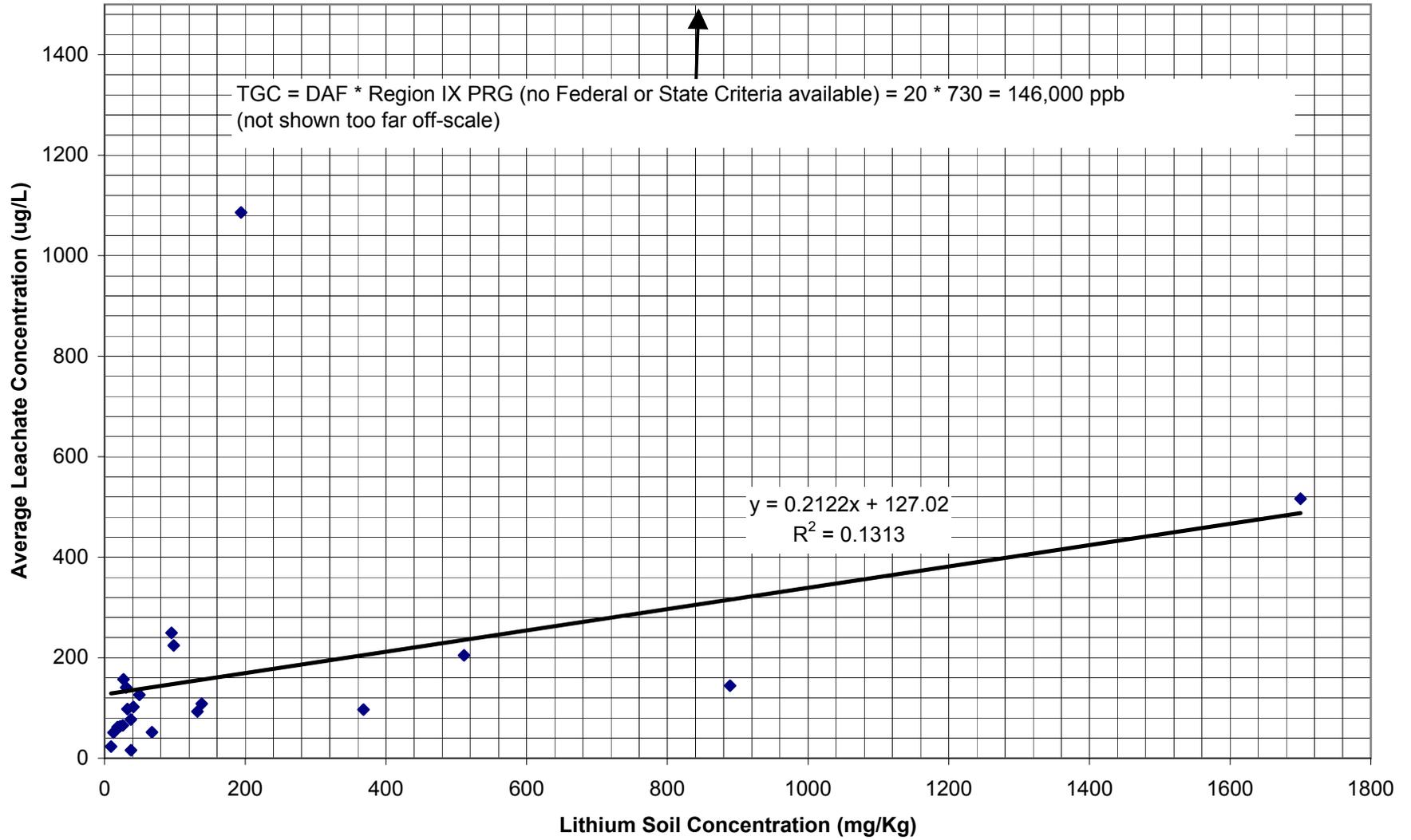


TABLE G-11

FUSRAP MAYWOOD SUPERFUND SITE

SPLP Results for Mercury

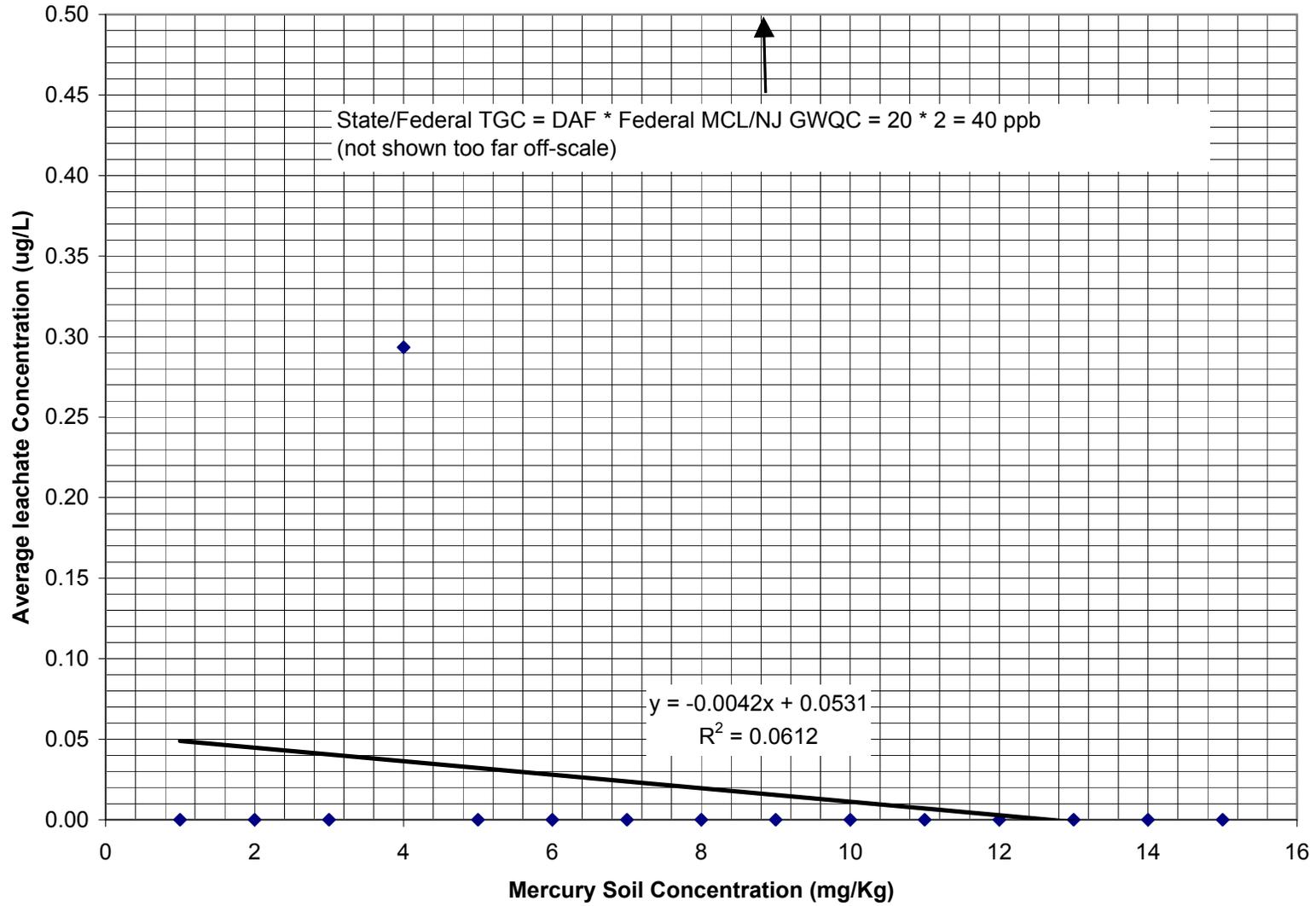


TABLE G-12

FUSRAP MAYWOOD SUPERFUND SITE

SPLP Results for Nickel

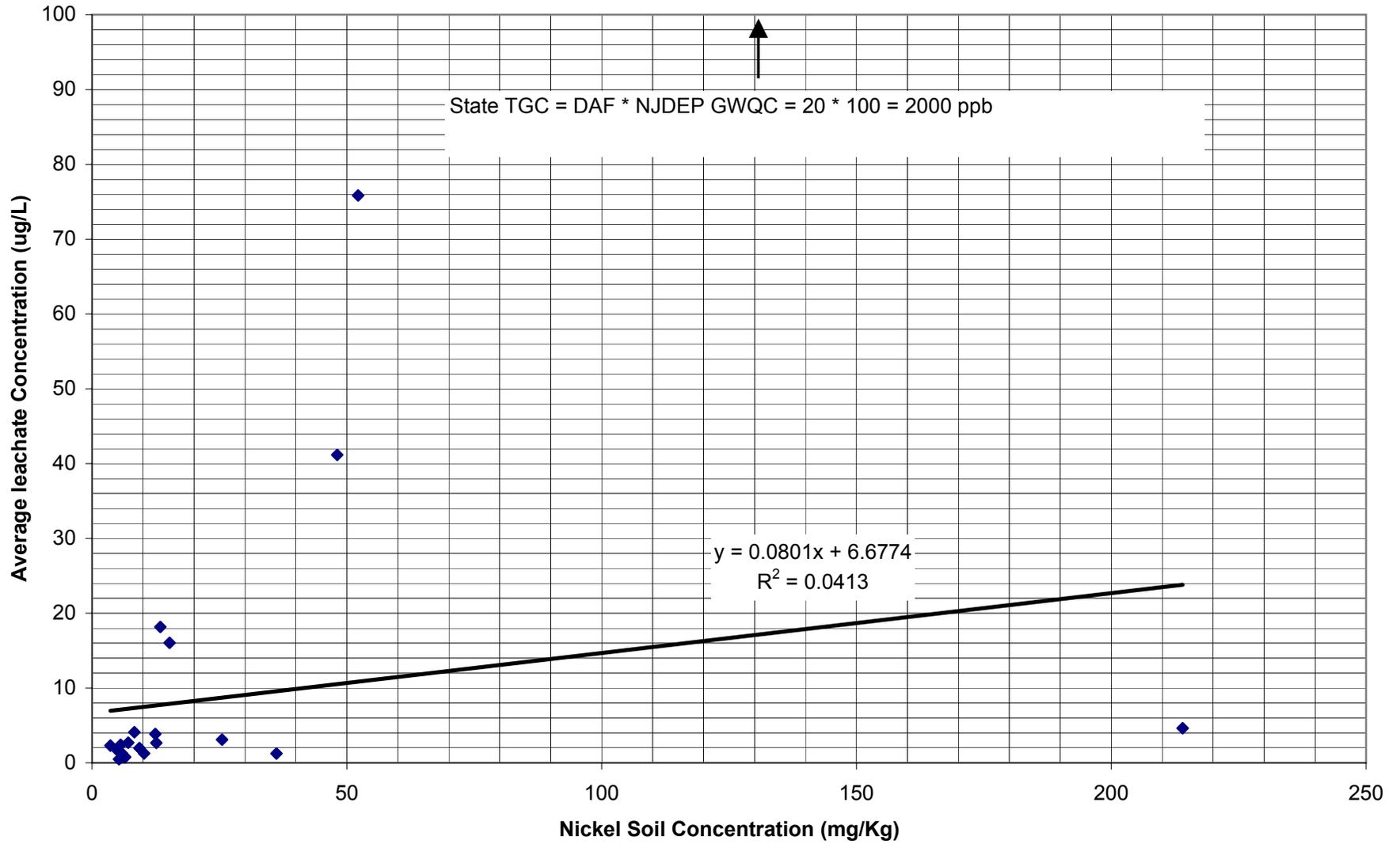


TABLE G-13

FUSRAP MAYWOOD SUPERFUND SITE

SPLP Results for Selenium

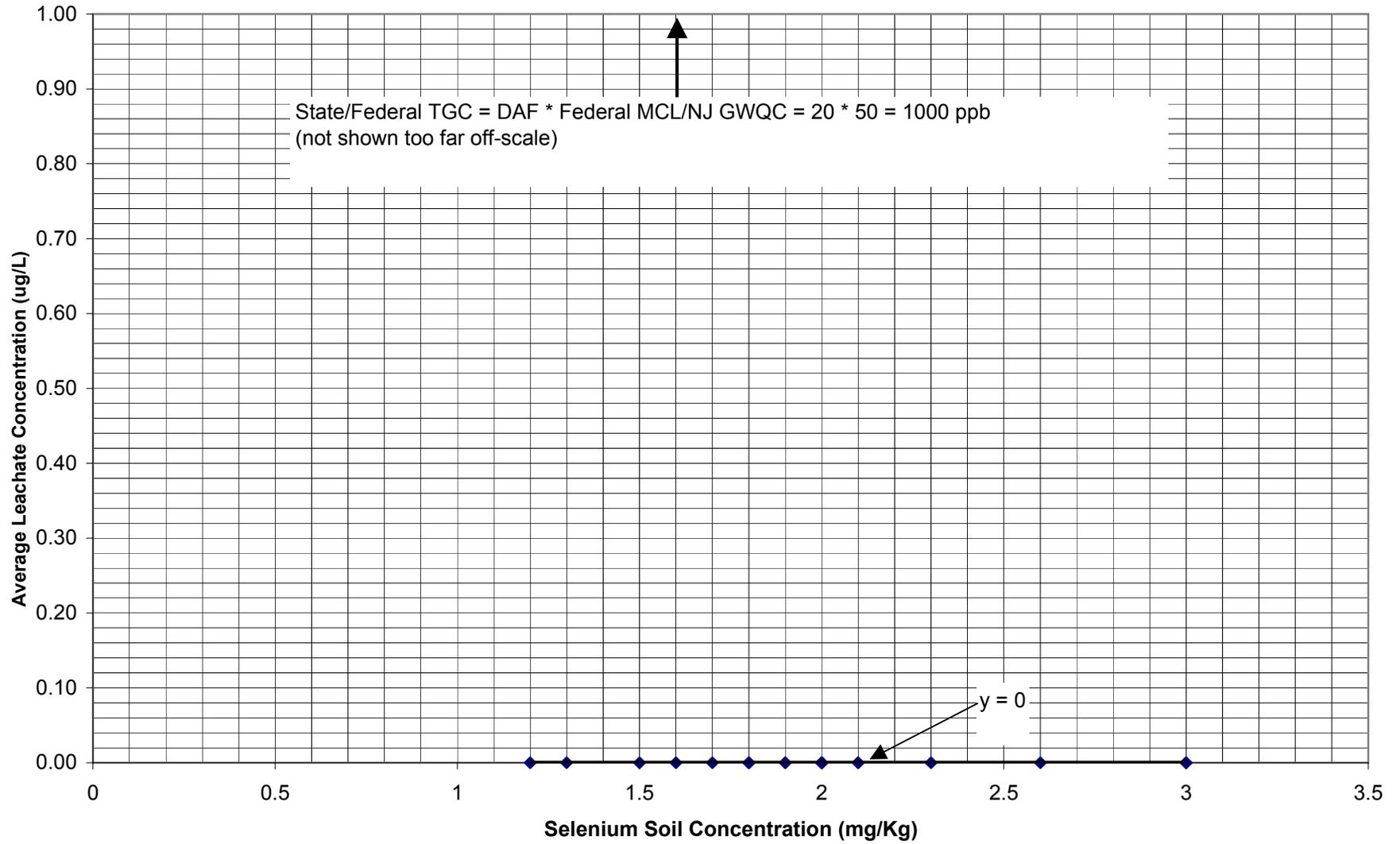
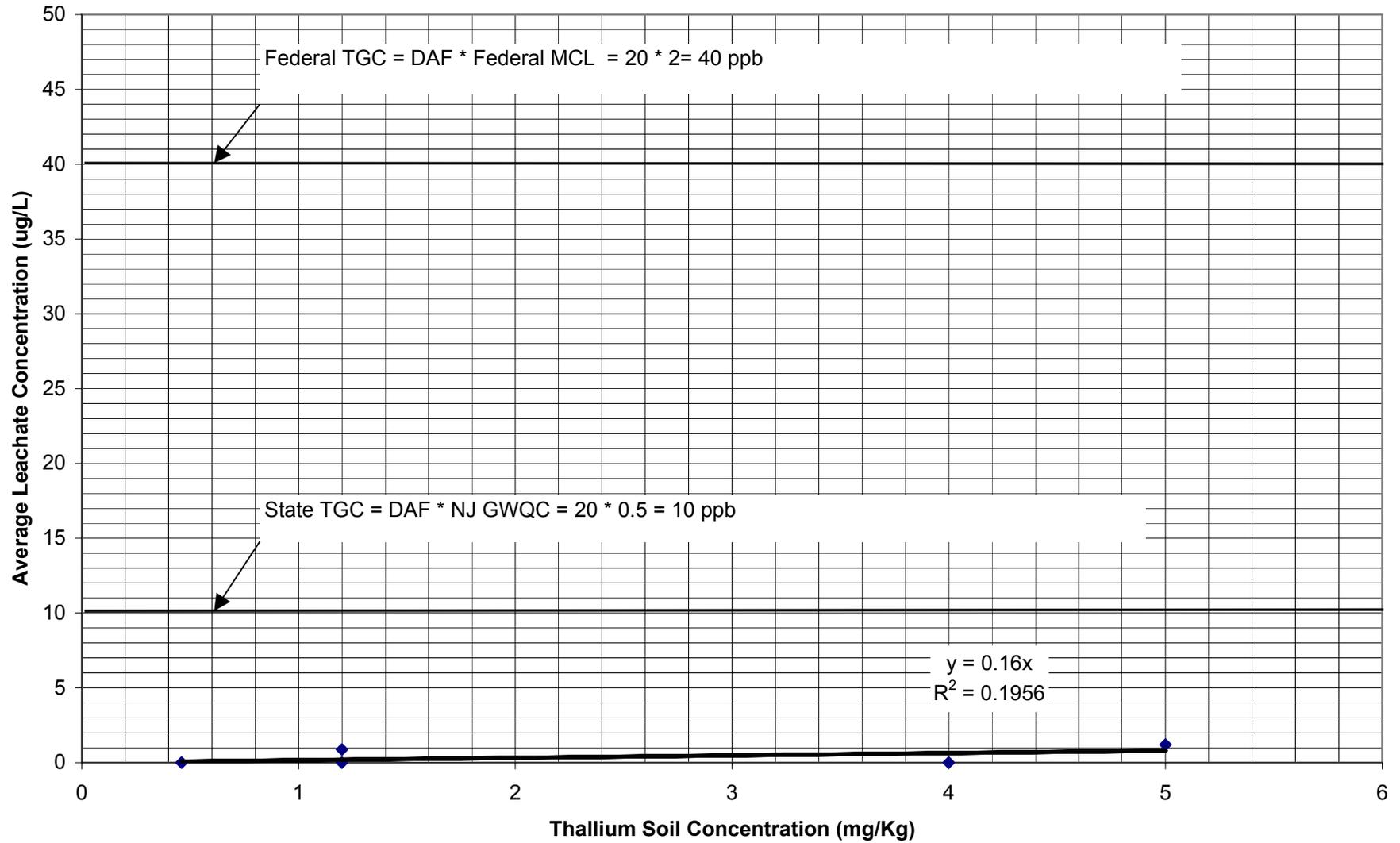


TABLE G-14

FUSRAP MAYWOOD SUPERFUND SITE

SPLP Results for Thallium



**APPENDIX H  
SSL WORK PLAN  
AND  
RESPONSES TO USEPA AND NJDEP COMMENTS**

This page intentionally left blank.

## **Responses to USEPA Comments on the Draft SSL Work Plan**

### **Comment 1:**

Section 3.0, 1<sup>st</sup> paragraph: This paragraph states, "Noting that some metals may be specific to one former pond..." This information is presented as the basis for collecting SPLP samples from each of the three ponds. However, the second paragraph of Section 5.0 states that "site data will be evaluated as one data set, since the samples are close together and the native soil type is common to all areas." This is inconsistent with the statement in Section 3.0. By combining the SPLP results from all three lagoons into one data set, the results may be biased low. If one specific pond contains high concentrations of leachable metals, this information will be lost by diluting the result in a combined data set. The results from each pond should be evaluated separately so that any potential leachability from a specific pond can be determined.

### **Response 1:**

SSLs will be determined by using all of the data. Additional data points will further define the range of metals concentrations in the soils, rather than dilute or low bias the data set. As noted in Section 5.0, the data set should be fairly consistent since the soil samples will be collected from the native soil horizon, and the samples are located in close proximity.

As noted in the WP, the location of six (6) to seven (7) samples in each basin was intended to provide the minimum required data if specific metal concentrations are limited to one Former Retention Pond area. In the cited scenario, the pond specific data will define the range of metal concentrations in soil for use in determining the SSL.

### **Comment 2:**

An area of concern (AOC 4) near Burial Pit 3 was identified in the June 2003 Groundwater RI Report. This AOC, centered around OBMW10, had elevated levels of arsenic, total radium and gross alpha. Therefore, soils in this area should also be sampled and included in the SSL evaluation.

### **Response 2:**

It is proposed to develop one SSL for each COC on the MISS, not separate, basin specific SSLs for each COC. Elevated concentrations of arsenic in fill/native soils are reported in Former Retention Ponds A and C, and to a lesser degree, in Former Burial Pit 3. The fill in each basin is underlain by native soils. NRC Burial Pit 3 is covered by an active process building (Stepan Bldg. 3) on the Stepan Company Property, and cannot be

sampled by geoprobe. The arsenic and radium impacted fill is probably limited to Burial Pit 3, and leaching of these materials into groundwater has resulted in the exceedances detected in downgradient well OBMW-10. The USACE does not propose additional sampling at NRC Burial Pit 3.

**Comment 3:**

In areas where excavation of radiological impacted soils will leave residual fill, samples should be collected in the fill rather than in the native soils since the fill likely contains higher concentrations of metals.

**Response 3:**

Site specific compound SSLs are being prepared to determine the soil (impact to GW) compound cleanup standard. As noted in response #2, it is proposed to develop one SSL for each COC on the MISS, not a number of basin or soil media specific site SSLs. Soils on the MISS will be excavated to meet the compound SSL, thereby removing all "leachable" groundwater source material. Development of SSLs and sampling is focused on the native soils for the following reasons: (1) most, if not all, of the MISS Former Pond material/fill will probably be removed during excavation of radiological *and* metals impacted soils, leaving native soils/sediment in place; (2) the vertical and lateral limits of metals contamination will be determined in native soils below and outside the former Retention Pond source areas. Accordingly, the metal SSLs should be derived for this soil media; and (3) the properties of the native soils should be fairly consistent on the MISS. Sampling of compounds in native soils/subsoils should therefore yield the most representative SSL values for the MISS, and adjacent properties.

**Comment 4:**

Please clarify in Section 4.0 on page 2 that the targeted two-foot interval from the four foot core will be homogenized and sampled.

**Response 4:**

The appropriate text will be revised in Section 4.0 to include the following: "Soil samples collected from the targeted two feet interval will be homogenized in a decontaminated stainless steel bowl, and transferred to the appropriate sample bottles."

**Comment 5:**

Lithium and arsenic groundwater plumes are centered around monitoring well MISS-2A, which is located just outside Former Retention Pond A (Basin A), yet no soil samples are proposed in this location. The Work Plan should be modified to include at least one soil sample in this area.

**Response 5:**

Soil samples were located within/adjacent the basins to obtain a distribution of soil concentrations in order to define the compound isotherm. Other proposed sample locations have higher reported soil arsenic and lithium concentrations than the requested location adjacent MISS -2A in/adjacent Former Retention Pond A.

As requested, a soil sample will be collected adjacent well MISS 2A. The Work Plan will be revised to reflect the addition of a sample (to adjacent MISS 2A) in Former Retention Pond A.

**Draft Responses to NJDEP Comments on the SSL Work Plan**

**Comment 1:**

It is stated that a DAF will be calculated using site-specific information. NJDEP has developed a generic DAF, but allows for modification under certain conditions. Please provide NJDEP with the data that will be used to calculate the DAF as soon as possible to ensure that the data is sufficient and acceptable.

**Response 1:**

A DAF of 20 was calculated for the MISS source area based upon site specific permeability, groundwater gradient, aquifer thickness and source area data. The site specific DAF was calculated using Equations 11 and 12 from the *USEPA Soil Screening Guidance, 1996*.

Equation 11: Derivation of Dilution Factor	
$\text{dilution factor} = 1 + \frac{Kd}{L}$	
Parameter/Definition (units)	Default
dilution factor (unitless)	20 (0.5-acre source)
K/aquifer hydraulic conductivity (m/yr)	
l/hydraulic gradient (m/m)	
l/infiltration rate (m/yr)	
d/mixing zone depth (m)	
L/source length parallel to ground water flow (m)	

Equation 12: Estimation of Mixing Zone Depth	
$d = (0.0112 L^2)^{0.5} + d_a \{1 - \exp\{-L\}/(Kd_a)\}$	
Parameter/Definition (units)	
d/mixing zone depth (m)	
L/source length parallel to ground water flow (m)	
l/infiltration rate (m/yr)	
K/aquifer hydraulic conductivity (m/yr)	
l/hydraulic gradient (m/m)	
d <sub>a</sub> /aquifer thickness (m)	

The site specific DAF of 20 is based upon the following parameters:

Hydraulic Conductivity,  $K = 2043$  m/yr (18.35 ft/day); Geometric Mean of Overburden (See Draft GWRI Tbl. 3-9)

Hydraulic Gradient (across basins)  $i = 0.011$  m/m;

Mixing Zone Depth,  $d = 3$  m (10 ft), average aquifer thickness

Infiltration Rate,  $I = 0.18$  m/yr (7.0 in/yr); EPA Default Infiltration Rate

Source Length,  $L = 20$  m (65 ft); variable

The source length of 20m (65 feet) was conservatively estimated from historical soil sampling data. Most historical metals soil sampling data does not show elevated concentrations, and those exceedances are typically isolated. Follow on soil sampling in impacted areas shows that metal concentrations vary dramatically over short distances, and that "source areas" are limited in extent. Impacted soil areas appear to be small (25 feet length), and others may extend 50 feet along flow (North side of Former Retention Pond A).

**Comment 2:**

It is stated that triplicate SPLP sample data will be averaged for each sample. NJDEP does not allow averaging where results vary greatly.

**Response 2:**

Significant variation of the SPLP (triplicate) sample data is not expected since soil samples were thoroughly homogenized in the field. The variability of the SPLP triplicate data will be evaluated and addressed in the SSL Sampling Report.

**Comment 3:**

USACE proposes to use regression analysis to back-calculate soil screening levels. Although regression analysis is allowed, NJDEP requires that at least half of the points used in the calculation lie at or above the midpoint of the range of total soil concentrations and that the Target Groundwater Concentration lie within the range of measured leachate concentrations.

**Response 3:**

SSL sampling locations were selected using historical soil sampling data, and focused on the most heavily impacted soil areas. Three additional borings are located in impacted areas of former Retention Ponds A and C to provide additional (impacted soil/SPLP metals) data. Although sampling is biased toward impacted soils, the range and distribution of bulk sample metal/SPLP leachate concentrations cannot be reasonably predicted from historical data. Due to the relatively large number of samples, there should be sufficient bulk soil/leachate data to define the range of concentrations in soil and associated SPLP values for each COC.

It is noted that the vast majority of samples (historical data) collected within the MISS retention ponds do not show individual metal soil exceedances, and further, data shows that impacted soil concentrations within the former retention ponds vary dramatically over short horizontal and vertical distances. This illustrates the potential difficulty in obtaining heavily impacted soil samples for each COC, and suggests that the bulk of soil metal concentrations may be lower than the "midpoint of the range of total soil concentrations". To address this concern, three additional soil samples were collected in mapped areas of contamination to potentially provide "highly impacted" bulk soil data.

SSLs will be calculated using both regression analysis and the NJDEP draft procedures:

NJDEP, 2004, *SPLP Impact to Groundwater Site Specific Remediation Standards (IGWSRS) Draft Procedure*, Letter from Ms. Donna L. Gaffigan, Case Manager to Mr. Allen Roos, Project Manager USACE, May 5, 2004.

**Comment 4:**

Please note that the TGC equals the DAF times the health based New Jersey Groundwater Quality Criteria (identified in Table 1 of N.J.A.C. 7:9-6).

**Response 4:**

The individual metal TGCs will be calculated using both the (1) applicable NJDEP Ground Water Quality Standard (GWQS)/USEPA MCL, and (2) NJDEP GWQC, if lower than the GWQS.

**SOIL SCREENING LEVEL (SSL) WORK PLAN**

**FUSRAP MAYWOOD SUPERFUND SITE  
MAYWOOD, NEW JERSEY**

**SITE-SPECIFIC ENVIRONMENTAL RESTORATION  
CONTRACT No. DACW41-99-D-9001  
TASK ORDER 00001  
WAD 05, WBS 17**

*Submitted to:*

Department of the Army  
U.S. Army Engineer District, New York  
Corps of Engineers  
FUSRAP Project Office  
26 Federal Plaza  
New York, New York 10278

Department of the Army  
U.S. Army Engineer District, Kansas City  
Corps of Engineers  
700 Federal Building  
Kansas City, Missouri 64106

*Submitted by:*

Shaw Environmental, Inc.  
100 West Hunter Avenue  
Maywood, New Jersey 07607

April 2004  
Revision 1

Issued  
to: \_\_\_\_\_

Date: \_\_\_\_\_

Copy No. \_\_\_\_\_

Controlled

Uncontrolled



**SOIL SCREENING LEVEL (SSL) WORK PLAN**

**FUSRAP MAYWOOD SUPERFUND SITE  
MAYWOOD, NEW JERSEY**

**SITE-SPECIFIC ENVIRONMENTAL RESTORATION  
CONTRACT No. DACW41-99-D-9001  
TASK ORDER 00001  
WAD 05, WBS 17**

*Submitted to:*

Department of the Army  
U.S. Army Engineer District, New York  
Corps of Engineers  
FUSRAP Project Office  
26 Federal Plaza  
New York, New York 10278

Department of the Army  
U.S. Army Engineer District, Kansas City  
Corps of Engineers  
700 Federal Building  
Kansas City, Missouri 64106

*Submitted by:*

Shaw Environmental, Inc.  
100 West Hunter Avenue  
Maywood, New Jersey 07607

April 2004

Reviewed / Approved by:

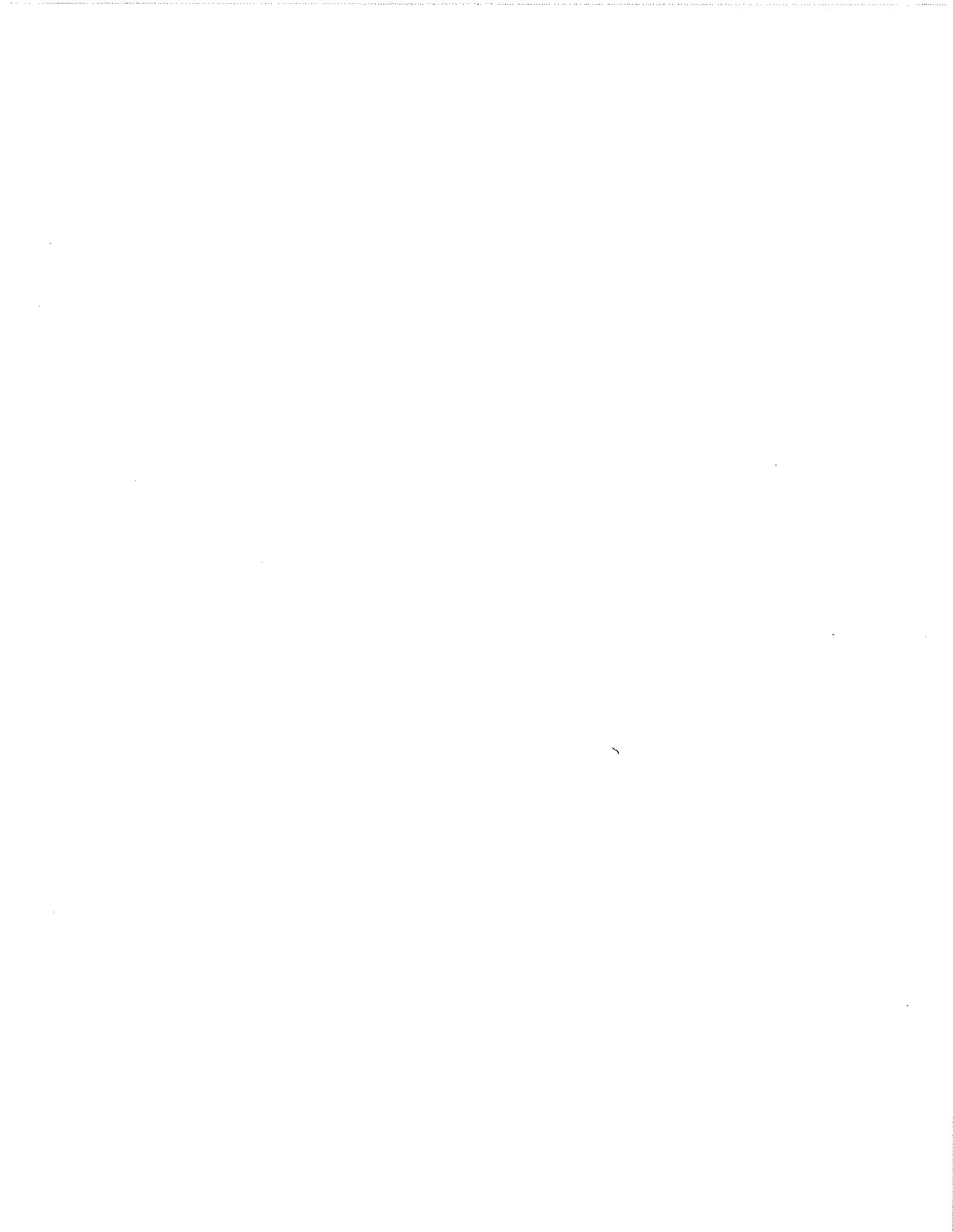
\_\_\_\_\_  
Kevin F. Donnelly, P.E.  
Project Environmental Engineer / Task  
Manager

Date:

Reviewed / Approved by:

\_\_\_\_\_  
Robert DeMott, P.G.  
Project Hydrogeologist

Date:



## 1.0 Introduction

The USACE has completed the *Draft Groundwater Remedial Investigation (GWRI)*, and *Draft RI Addendum* (to be submitted), and proposes to develop site-specific soil screening levels (SSLs) for the protection of groundwater on the FMSS. The NJDEP has not developed impact to groundwater soil cleanup criteria (IGWSCC) for inorganic constituents; and therefore, SSLs need to be developed using site-specific chemical and physical parameters. The metals selected for evaluation were detected in site groundwater at concentrations above the Federal/State Maximum Contaminant Level (MCL), or the lower of the New Jersey Groundwater Quality Criteria (GWQC) or New Jersey Practical Quantitation Limit (PQL). The metals of concern include arsenic, barium, beryllium, boron, cadmium, chromium (total), lead, lithium, and thallium. Isolated exceedances of the NJDEP residential direct soil contact criteria (RDSCC) for antimony, copper, and mercury were also detected on the MISS, and will be included in the SSL evaluation.

The USACE proposes to calculate one SSL for each selected metal COCs using the methodology described in the *Soil Screening Guidance* (USEPA 1996). SSLs will be determined for each COC using the USEPA Synthetic Precipitation Leaching Procedure (SPLP). The scope of work includes the collection of 18 soil samples on the MISS, and analysis for Target Analyte List (TAL) metals plus lithium and boron, and leachable TAL metals including lithium/boron via SPLP. Additionally, other soil parameters such as total organic carbon, soil pH, grain size distribution and moisture content will be analyzed. The site-specific SSLs will be determined for each COC based upon the calculated dilution attenuation factor (DAF), total metals concentrations (in soils) and SPLP metal results. The field program, lab analysis/validation, data analysis, and report preparation will take approximately 145 days to complete from Work Plan approval. Results of the field, lab and data evaluation would be presented in a Technical Memorandum.

The SSL Work Plan is submitted as an Addendum to the *Groundwater Remedial Investigation Work Plan* (USACE 2000), and incorporates the Geoprobe field sample collection and analysis preparation procedures outlined in that document.

## 2.0 Background

Soil sampling is proposed in the northern and western portions of the MISS, including Former Retention Ponds A, B & C (study area). The study area is underlain by fill and native soil/subsoil overburden, which overlies shale and sandstone bedrock of the Passaic Formation. The overburden has an average thickness of about 20 feet, and ranges from 15 feet in the western portions of Pond C to greater than 25 feet in Pond B. The upper portion of overburden is comprised of fill, which is laterally continuous across the MISS. Fill deposits are thickest in the former retention ponds, and reach a maximum 10+ feet thickness in parts of Pond C. Fill is generally comprised of a tan to black sand, with thick sequences of coal ash and process sludge found in the former retention ponds. Fill is underlain on the MISS by a red-brown fine to coarse-grained soil and sand, which is of glacial-fluvial origin. These are termed "native soils/subsoils" in the text and overly the water table, and siltstone and shale bedrock on the MISS. The native soils are readily distinguished from overlying fill by their color, texture and other characteristics.

Excavation and disposal of radiologically impacted soils within the MISS is proposed as part of the OUI remediation in the *Feasibility Study and Proposed Plan* (USACE 2002c, 2002d). The proposed excavation limits for the study area are shown in Figure 1. It is proposed to sample the soil interval below the proposed excavation limit to determine the metal concentrations in native soil, and the corresponding SPLP leachable metal concentrations. Soils on the MISS will also be excavated to meet the negotiated compound SSLs, thereby removing all potential groundwater source material. The excavation would be backfilled with clean fill, and returned to grade.

Groundwater data was evaluated from 2001 and 2002 to determine the lower (vadose zone) limit of soil sampling. In 2002, the average elevation of groundwater in the Study Area ranged from 51.13 to 44.17 feet MSL. Water table elevations varied seasonally, fluctuating from 2.40 to 6.50 feet in overburden wells measured quarterly on the MISS (USACE 2003b). A comparison of the July 2001 and other 2002 water table elevation maps show that the water table lies several feet or more below the base of excavation in the study area. This data suggests that residual soils can be sampled above the water table in the study area. Water table contours within the vicinity of the basins are presented in Figure 1, and were obtained from the July 2001 synoptic water level gauging round. MISS groundwater elevation data for 2001, 2002 and 2003 are presented in Appendix A along with a well location map.

### 3.0 Sampling Rationale and Methodology

A total of 19 soil samples will be collected in and adjacent to former Retention Ponds A, B, and C, all located on the MISS. Metal specific soil and leachate data will be presented in one data set to develop a compound isotherm, from which the individual metal SSLs will be extrapolated. Six (6) to seven (7) borings are proposed in/adjacent to each former pond area to ensure enough data points in case any metal(s) concentrations are limited to one pond. Sampling in each former pond area will be biased, with the collection of four to five samples in metal impacted soils, and two samples in non/less impacted areas. The proposed soil boring locations are shown in Figure 2. Soil sample locations were selected from soil (metals) data provided in the *Remedial Investigation for the Maywood Site* (DOE 1992), *Final Remedial Investigation Report – Stepan Company Property* (CH2M Hill 1994), *Pre-Design Assessment/Evaluation For Potential Chemical Contamination at the MISS* (USACE 2002), and *Draft GWRI Report* (USACE 2003).

Soil sampling is focused on the two feet native soil interval located immediately below the proposed OUI excavation limit. These shallow native soils will be impacted by metals from the overlying or adjacent pond source material, and should yield the required soil and leachate sampling data. Development of SSLs and sampling is focused on the native soils for the following reasons: (1) most, if not all, of the MISS Former Pond material/fill will probably be removed during excavation of radiological and metals impacted soils, leaving native soils/sediment in place; (2) the vertical and lateral limits of metals contamination will be determined in native soils below and outside the former Retention Pond source areas, therefore, the metals SSLs should be derived for this soil media; and (3) the properties of the native soils are fairly consistent, and the soils are laterally continuous in the MISS and FMSS. Sampling of compounds in native soils/subsoils should therefore yield the most representative SSL values for the MISS, and other FMSS properties.

Soil samples will be collected in the two (2) feet interval below the proposed excavation limit, or in the top two (2) feet of native soil at locations where fill is encountered at the proposed sample interval. Although the proposed sample intervals are located above historical groundwater levels, seasonal high groundwater levels may be encountered at selected locations during sampling. If groundwater is encountered within the proposed sample interval, the sample will be collected from the two feet soil interval above groundwater, regardless of soil type. If a fill sample is collected above the groundwater table, a second native soil sample will also be collected below the water table. A summary of proposed soil sample depths for each boring is provided in Table 1.

### 4.0 Sample Collection and Analysis

All sample locations will be staked in the field, and identified using the alphanumeric sample numbers provided in Figure 2. A geophysical utility survey will be conducted at all proposed boring locations to identify subsurface pipes and obstructions, and borings will be relocated as needed. Alternative boring locations will be cleared in each pond area for use if primary borings cannot be sampled due to shallow groundwater or other conditions. Soil samples will be collected via the direct push sampling method using a truck mounted Model 5400 or track mounted Model 54DT Geoprobe. All borings will be

continuously logged in the field using the Burmister classification. Samples will be collected in four feet cores, within PVC/polyethylene terephthalate (PET) liners. If there is insufficient soil recovery for analysis, another boring will be advanced adjacent the first location, and the soil sample will be collected at the prescribed interval. Soil samples collected from the targeted two feet interval will be homogenized in a decontaminated stainless steel bowl, and transferred to the appropriate sample bottles. All sample locations will be recorded in the field using a Trimble Model PRO XRS differential backpack GPS, which is accurate to +/- 50 cm.

Soil samples will be analyzed for TAL metals + Li/Boron, SPLP (aqueous TAL metals + Li/Boron), total organic carbon (TOC), soil pH, moisture, grain size analysis, both mechanical and hydrometer testing. As recommended in the Soil Screening Guidance (USEPA 1996), each soil sample subjected to the SPLP will be analyzed in triplicate. A summary of the proposed soil analyses, and methods are shown in Table 2. Quality assurance/quality control (QA/QC) sampling will include collection and analysis of rinseate blanks, duplicates and USACE splits for TAL metals + Li/Boron. Duplicate and USACE split samples will not be run for SPLP TAL metals + Li/Boron since they are run in triplicate. Duplicate and USACE split samples will not be run for SPLP TAL metals + Li/Boron since they are run in triplicate. Laboratory precision will be evaluated from the SPLP triplicate analyses, whereas, method accuracy will be evaluated from the laboratory control sample and matrix spike results. All sample results will be validated in accordance with the CDQMP.

## 5.0 Data Evaluation

In accordance with the methodology in the *Users Guide*, a dilution attenuation factor will be calculated for the MISS based upon the aquifer hydraulic conductivity, hydraulic gradient, groundwater recharge rate, aquifer thickness and source area (in ft<sup>2</sup>). The sensitivity of the dilution factor to variations of each parameter will be evaluated.

The triplicate SPLP metals data will be averaged (mean) for each sample. Site sample data will be evaluated as one data set, since the sample locations are close together and the native soil type is common to all sample areas. The SPLP results will be divided by the dilution attenuation factor to approximate the metals concentration in groundwater. The derived groundwater concentrations will be plotted (on the y axis) against the corresponding soil metal concentrations (X-axis), and a line or curve will be fitted through the plotted points. Individual plots will be generated for each COC, and the specific metal groundwater cleanup standard will be marked on the Y-axis. The SSL is derived from the plot, and represents the extrapolated soil concentration at the groundwater cleanup standard.

A technical memorandum will be prepared summarizing the results of the field sampling, lab analysis and validation, and data evaluation. The memo shall include all boring logs, laboratory data packages, and data/calculations supporting the SSL evaluation.

## 6.0 Schedule

Mobilization, fieldwork and Draft Report Preparation can be completed in 145 calendar days from regulator approval of the SSL Work Plan. The expected duration of individual tasks are provided as follows:

- Subcontractor bid/procurement, mobilization and field sampling - 40 days
- Lab Analysis and data validation - 45 days
- Prepare Draft SSL and submit to USEPA/NJDEP - 60 days

TABLE 1  
MAYWOOD SSL SAMPLING PLAN

Boring ID	Boring Surface Elevation (Feet MSL)	Excavation Limit Elevation (Feet MSL)	Sample Interval (Feet MSL) (1)	Sample Interval (Feet BGS) (1)
A-1	61	52	52 - 50	9 - 11
A-2	57	51	51 - 49	6 - 8
A-3	58	56	56 - 54	2 - 4
A-4	63	58	58 - 56	5 - 7
A-5	60	58	58 - 56	2 - 4
A-6	61	56	56 - 54	5 - 7
A-7	60.5	56.5	56.5 - 54.5	4 - 6
B-1	61	48	48 - 46	13 - 15
B-2	56	54	54 - 52	2 - 4
B-3	59	51	51 - 49	8 - 10
B-4	61	48	48 - 46	13 - 15
B-5	62	48	48 - 46	14 - 16
B-6	59	51	51 - 49	8 - 10
C-1	57	46	46 - 44	11 - 13
C-2	56	49.5	49.5 - 47.5	6.5 - 8.5
C-3	55	49	49 - 47	6 - 8
C-4	55	52	52 - 50	3 - 5
C-5	54	49	49 - 47	5 - 7
C-6	57	46	46 - 44	11 - 13

Legend:

(1) Sample will be collected at the listed interval, or top of native soil, whichever is greater.  
NA - Not Applicable not within excavation

TABLE 2  
ANALYTICAL METHODS AND SAMPLE NUMBERS

Sample Item	Media	Method	Field Samples	Rinse Blanks	Duplicates	USACE Splits	Comments
TAL Metals + Li/Boron	Soil	SW-846 Method 6010B/7471/7470 (mercury (aq.))	18	5 (aqueous)	2	2	
SPLP - TAL Metals + Li/Boron	Soil	1312/SW-846 Method 6010B/7471	18	NA	NA	NA	SPLP is run in triplicate. No duplicate QA/QC sample is proposed.
Soil pH	Soil	SW-846 Method 9045C	18	NA	2	NA	
Total Organic Carbon	Soil	Lloyd Kahn Method	18	NA	2	NA	
Soil Moisture	Soil	SW-2540B	18	NA	2	NA	
Grain Size Analysis - Mechanical & Hydrometer	Soil	D422-63	18	NA	NA	NA	



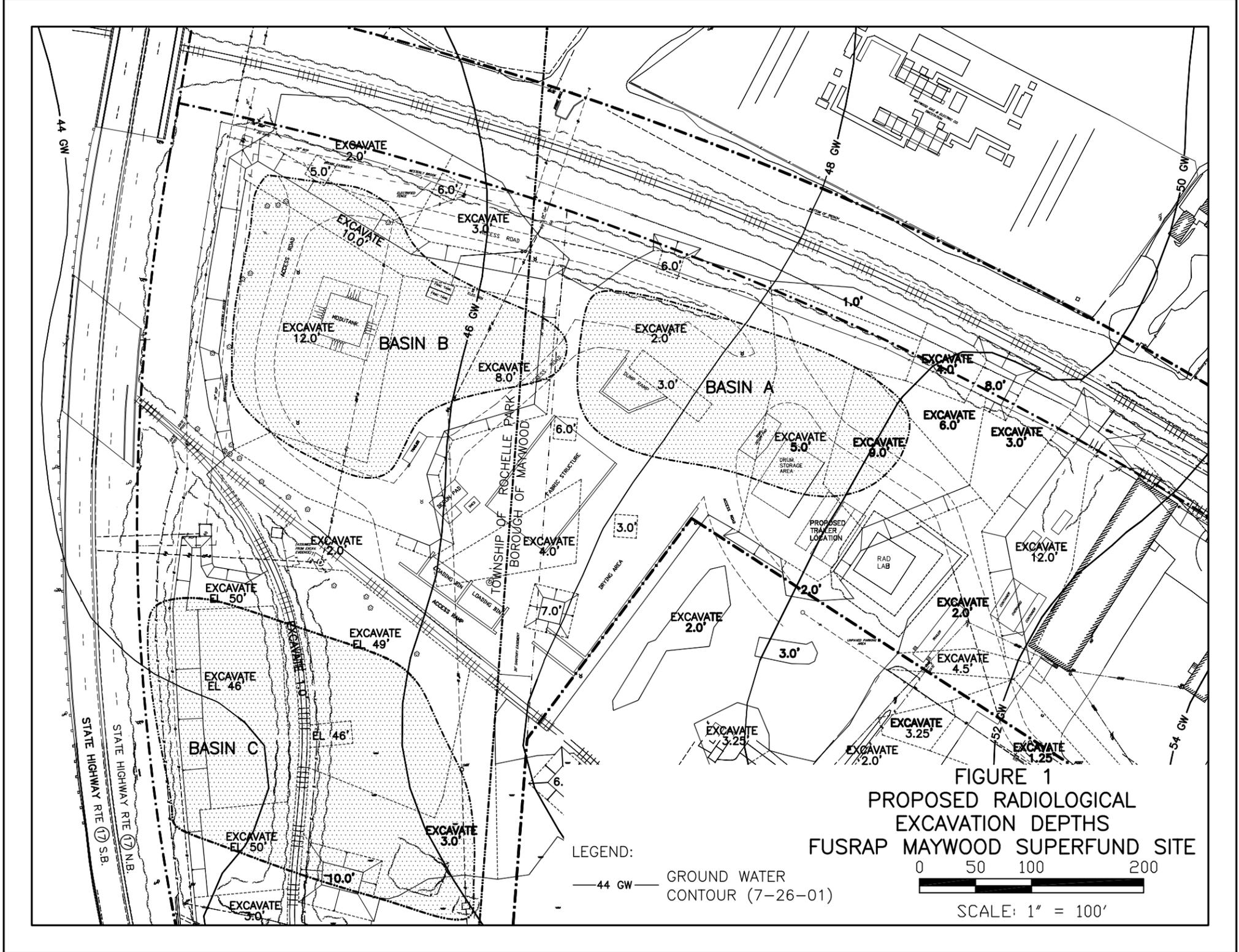


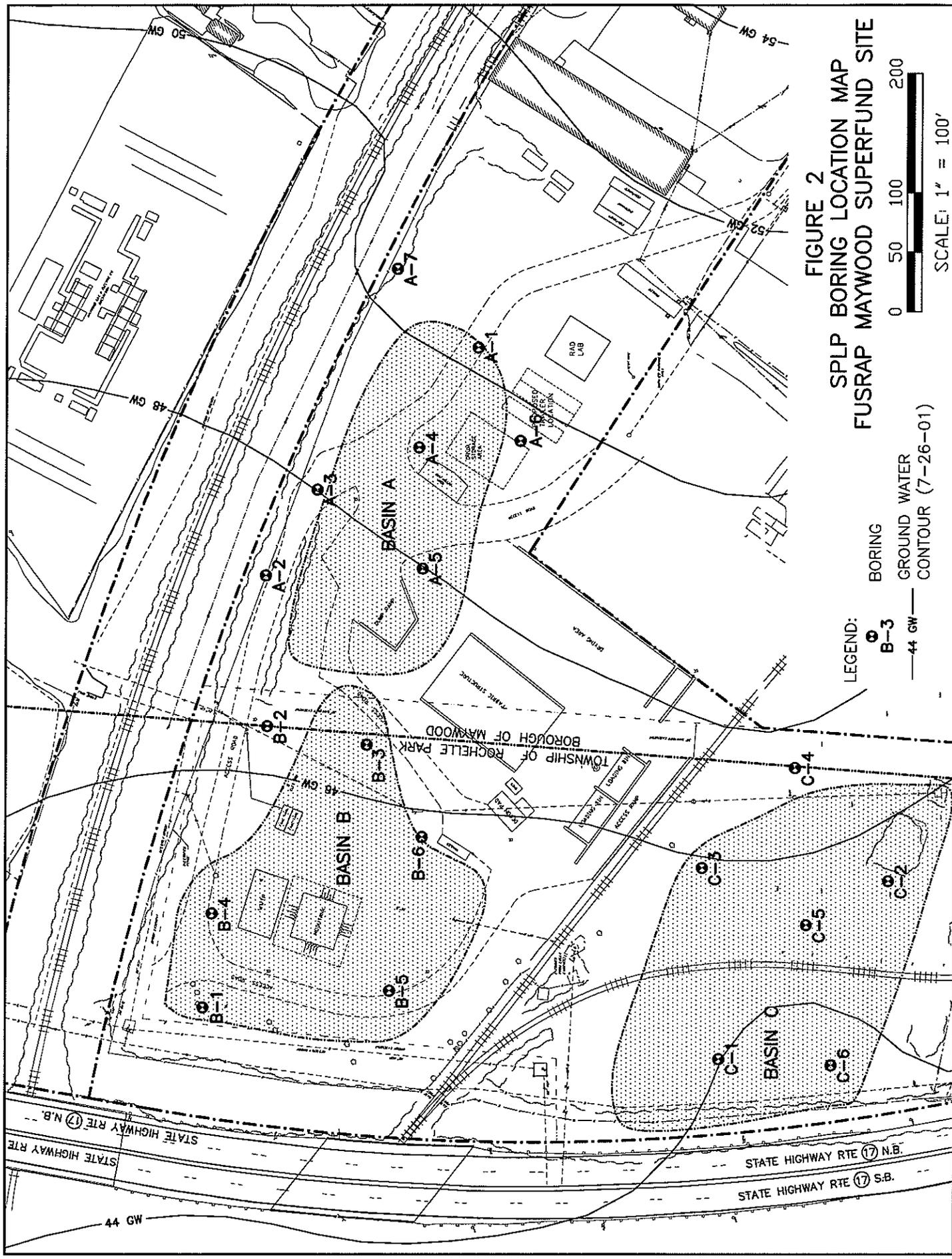
FIGURE 1  
 PROPOSED RADIOLOGICAL  
 EXCAVATION DEPTHS  
 FUSRAP MAYWOOD SUPERFUND SITE



SCALE: 1" = 100'

LEGEND:  
 — 44 GW — GROUND WATER  
 CONTOUR (7-26-01)





**FIGURE 2**  
**SPLP BORING LOCATION MAP**  
**FUSRAP MAYWOOD SUPERFUND SITE**

**LEGEND:**  
 ○ B-3 BORING  
 ○ 44 GW GROUND WATER CONTOUR (7-26-01)  
 ——— 48 GW  
 ——— 50 GW  
 ——— 52 GW  
 ——— 54 GW



SCALE: 1" = 100'



**APPENDIX A**

**SYNOPTIC WATER LEVEL DATA FOR MISS OVERBURDEN MONITORING  
WELLS  
2001 TO 2003  
AND  
FIGURE DEPICTING MISS OVERBURDEN WELL LOCATIONS**

TABLE A-1  
 WATER LEVEL ELEVATIONS FOR OVERBURDEN MONITORING WELLS LOCATED WITHIN THE MISS  
 2001 - 2003

Measurement Date	B3BW19S	MISS01AA	MISS02A	MISS05A	MISS06A	MISS07A	MW-25S	OVPW-1S	OVPZ-17
02/07/2001	45.24	47.60	53.98	47.41	48.76	48.48	NI	NI	NI
04/30/2001	45.08	47.89	53.40	47.43	47.90	46.87	NI	NI	NI
07/26/2001	43.33	44.76	50.47	44.26	45.24	46.37	NI	45.65	45.05
11/21/2001	42.58	43.92	49.43	43.18	43.69	46.19	NI	NG	NG
12/20/2001	42.79	44.09	49.78	43.41	45.49	46.82	46.43	45.21	44.26
03/07/2002	43.11	44.68	50.53	43.67	46.08	47.20	NG	NG	NG
05/07/2002	44.77	47.93	52.27	46.39	48.46	47.35	NG	NG	NG
08/26/2002	42.86	44.40	49.07	43.65	45.61	46.40	NG	NG	NG
11/20/2002	45.94	48.80	52.67	47.85	49.39	48.80	NG	NG	NG
03/12/2003	46.34	48.30	54.92	48.35	49.26	49.13	NG	NG	NG
05/23/2003	44.31	47.60	52.33	45.65	46.86	46.55	NG	NG	NG

NI - NOT INSTALLED AS OF THAT GAUGING ROUND  
 NG - NOT GAUGED  
 NGVD - NATIONAL GEODETIC VERTICAL DATUM, 1929



LEGEND:

● MW-25D Overburden Monitoring Wells

A

FORMER RETENTION POND

D

FORMER RETENTION POND - REMEDIATED

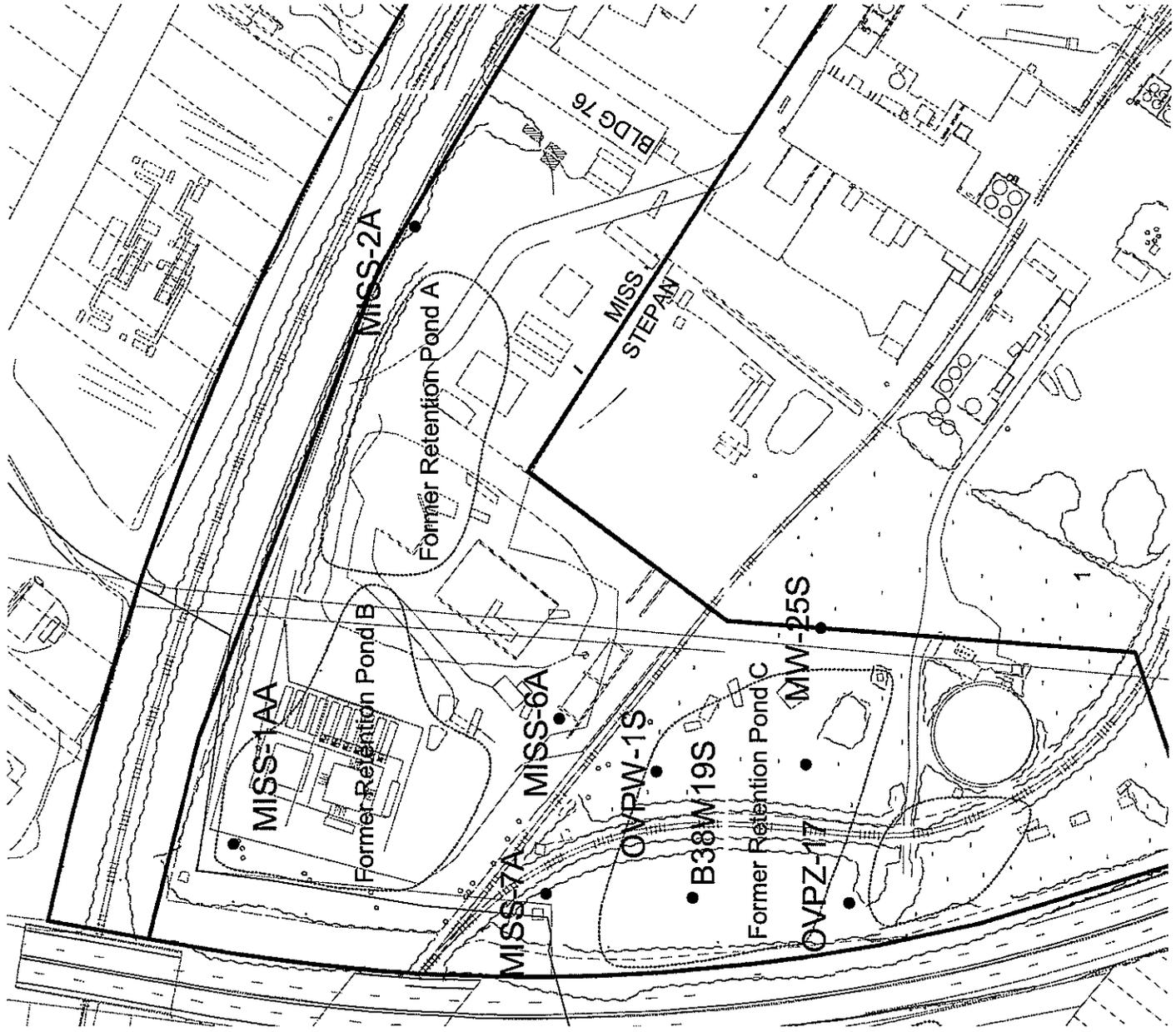


FIGURE A-1  
OVERBURDEN MONITORING WELLS  
ON THE MISS  
SPLP WORK PLAN

The Army Corps of Engineers  
Maywood Superfund Site

FUGRO  
Maywood Superfund Site



