ADDITIONAL INVESTIGATION AND RESPONSE ACTION PLAN

Former Scherer Bros. Lumber
Minneapolis, Minnesota

Prepared for:

Minneapolis Park and Recreation Board

October 6, 2010

ADDITIONAL INVESTIGATION AND RESPONSE ACTION PLAN FORMER SCHERER BROS. LUMBER MINNEAPOLIS, MINNESOTA

(Peer #20074)

Prepared for:

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

Peer Engineering, Inc. (Peer) was retained by the Minneapolis Park and Recreation Board (MPRB) to prepare this Response Action Plan (RAP) for the former Scherer Bros Lumber Co. property located at 900 Sibley Street NE, 9 Ninth Avenue NE, and 15 Eighth Avenue NE, Minneapolis, Minnesota (the Site). The MPRB has purchased the Site and plans to redevelop the western portion of the Site as parkland. This document is being submitted to facilitate redevelopment of the Site in a manner consistent with Minnesota Pollution Control Agency (MPCA) Voluntary Investigation & Cleanup (VIC) Program guidelines.

This RAP document outlines the necessary steps to manage contaminated and potentially contaminated soils, and other environmental issues affecting future Site redevelopment.

2.0 BACKGROUND

The Site is composed of three addresses totaling approximately 11.3 acres in size. The Site is bounded by 10th Avenue NE and commercial and industrial property to the north, Sibley Street to the east, 8th Avenue NE to the south and the Mississippi River to the west, as indicated on **Figure 1**.

The Site was owned and occupied by Scherer Bros. Lumber Company until it was purchased by the MPRB in June 2010. A summary of previous investigations and a work plan for the additional investigation were provided to the MPCA VIC Program in a letter dated August 9, 2010.

3.0 ADDITIONAL INVESTIGATION

A description of the additional investigation and associated documentation is provided in the following sections. Methods and procedures are presented in **Appendix A**.

The additional investigation included the following:

- Completion of twelve push probe soil borings (SP-1 through SP -12) to depths ranging from 7 to 12 feet below ground surface (bgs).
- Collection of soil samples from the soil borings for organic vapor monitoring, classification and possible laboratory analysis.
- Laboratory analysis of select soil samples.

3.1 FIELD INVESTIGATION

The soil boring locations are shown on **Figure 2**. The boring locations were selected to further assess the extent of previously identified contamination.

Prior to the start of investigation activities, Peer's drilling subcontractor, Bergerson Caswell, Inc. (Bergerson) of Maple Plain, Minnesota notified the Gopher One-Call System to clear public utilities at the Site. The Site owner cleared private utilities at the Site.

Twelve push probe soil borings (SP-1 through SP-12) were advanced at the Site on September 8, 2010 by Bergerson using a hydraulic push-probe rig. The soil borings were completed to depths ranging from 7 to 12 feet bgs.

Soil samples were collected continuously to the termination depth of each soil boring. The soil samples were screened in the field for organic vapors using a photoionization detector (PID) equipped with a 10.6 eV lamp and were examined for evidence of potential contamination including odors, staining or debris. Soil samples were selected for laboratory analysis based on visual observations and PID screening results, and to further assess the extent of previously identified areas of contamination. Soil boring logs are included in **Appendix B**.

All sampling equipment was decontaminated prior to use to reduce the risk of potential cross-contamination. Upon completion, the soil borings were abandoned in accordance with Minnesota Department of Health (MDH) regulations.

3.2 ANALYTICAL TESTING

Selected soil and ground water samples collected during the additional investigation were submitted to Pace Analytical Services, Inc. (Pace) for analytical testing. The samples were analyzed for a combination of the following parameters:

- Diesel Range Organics (DRO) using the WDNR Method.
- Volatile Organic Compounds (VOCs) using Environmental Protection Agency (EPA) Method 8260.
- Polynuclear Aromatic Hydrocarbons (PAHs) using EPA Method 8270.
- Total Resource Conservation and Recovery Act (RCRA) Metals using various EPA Methods.
- Toxicity Characteristic Leach Procedure (TCLP) lead using EPA methods 1311/6010.

Fourteen soil samples were submitted for laboratory analyses. The soil analytical results are presented in **Table 1.** Laboratory results from previous investigations are included in **Tables 2, 3 and 4**. For comparison purposes, the tables also list the Recreational Soil Reference Values (Rec-SRVs) and Industrial Soil Reference Values (I-SRVs) and Tier 1 Soil Leaching Values (SLVs) established by the MPCA. A copy of the laboratory analytical report and chain-of-custody forms for the soil samples are included in **Appendix C**.

4.0 RESPONSE ACTION PLAN

4.1 REDEVELOPMENT DESCRIPTION

Development plans are currently being prepared. At this time, the anticipated park development project will include the portion of the Site located west of the vacated Water Street and following general elements:

- Demolition of the two existing open sided sheds.
- Removal and disposal of asphalt surface and granular underlayment.
- Removal and disposal of contaminated soil necessary to meet MPCA Rec-SRVs.
- Removal and disposal of concrete and wood fill materials and on-Site relocation of unregulated fill to obtain the desired final grade.
- Re-grading, riverbank stabilization, storm water management, and covering the park area with a minimum of 6 inches of organic fill (topsoil).
- Landscaping and construction of asphalt walk/bike paths and possible at-grade park structures.

4.2 PROPOSED RESPONSE ACTIONS

The following categories of environmental response actions will be to be completed at the Site to facilitate redevelopment:

- Completing limited additional pre-cleanup soil investigation to further define the extent and magnitude of impacted soil.
- Environmental monitoring during all significant Site excavation activities that have the potential to disturb contaminated fill soils and/or buried debris.
- Segregating and coordinating the disposition of contaminated materials.
- Implementing a Construction Contingency Plan during development to address potential unexpected contamination.

The following sections provide additional information pertaining to the proposed response actions. Field methods and procedures are described in **Appendix A**.

4.3 ADDITIONAL INVESTIGATION

Additional soil borings will be completed in the following locations (see Areas on Figure 2) to further define the extent and magnitude of contaminated soil:

Location (Depth)	Contaminant of Concern	Analyses
Area 1 (1′-3′)	Arsenic	RCRA metals
Area 3 (2′-4′)	Lead	RCRA metals
Area 4 (7′-9′)	Lead	RCRA metals, TCLP lead
Area 5 (7′-9′)	BaP equivalents	PAHs

It is expected that two to five soil borings will be completed in each these areas to depths of 4 to 12 feet bgs, and that depth stratified soil samples from the borings will be collected for laboratory analyses. Based on the total lead results, some of the samples may also be analyzed for leachable lead using the Toxicity Characteristic Leaching Procedure (TCLP) to assist with disposal characterization for the lead-impacted soil. The results of the additional soil borings will be provided to the MPCA prior to the start of development-related excavation activities. If TCLP analyses identify hazardous concentrations, a work plan for stabilization will also be provided to the MPCA.

4.4 ENVIRONMENTAL MONITORING, SAMPLING AND TESTING

Overview

Preliminary park development plans include lowering the ground surface elevation by approximately 3 feet, which will require the removal of approximately 20,000 cubic yards of materials. Based on the Phase II Investigation results, an estimated 7,000 to 8,000 cubic yards of contaminated fill soil will be excavated and removed for redevelopment of the Site as parkland. The estimated quantities of contaminated materials are summarized below:

Location (Area)	**Estimated Thickness**	**Estimated Volume (**ft^2)	**Estimated Volume** (yd^3)
Area 1 (11,000 ft^2)	2 ft	22,000	820
Area 2 (36,000 ft^2)	4 ft	144,000	5,350
Area 3 (2,500 ft^2)	3 ft	7,500	280
Area 4 (2,000 ft^2)	3 ft	6,000	230
Area 5 (2,000 ft^2)	3 ft	6,000	230
Other/10%Contingency			690
Estimated Total Volume of Contaminated Materials			7,600

In addition, an estimated 8,000 to 11,000 cubic yards of asphalt/parking surface, wood, limestone and concrete will also be removed to access the contamination and for grading purposes. An additional 1,000 to 5,000 cubic yards of unregulated fill will be stockpiled and later replaced on the eastern portion of the Site to increase the grade above the 100 year flood elevation.

Environmental Monitoring

An environmental professional will perform full time environmental monitoring during all significant development-related soil excavation activities to identify/segregate potentially contaminated materials (e.g., fill soils, debris) and ensure they are managed appropriately. Contaminated materials will be segregated from clean materials using a combination of visual observations, odors, organic vapor screening results, and existing analytical testing results from the previous investigations. During monitoring, the excavated materials will be observed continuously by the environmental professional

for physical evidence of significant contamination (e.g., debris, staining or discoloration, or chemical odors), and screened for organic vapors using a photoionization detector (PID) equipped with a 10.6 eV lamp. The PID will be calibrated to an isobutylene standard to read in parts per million (ppm) benzene.

Sampling and Analytical Testing

Sampling and analytical testing will be performed as necessary during RAP implementation. The two primary types of sampling and analytical testing include:

1. Excavated contaminated materials for disposal facility characterization (if needed).

2. Characterization of excavated materials from locations and/or soil types not previously characterized.

It is expected that the soil laboratory data from the previous investigations will be adequate to obtain disposal facility approvals for the project. If required by the selected disposal facility, additional sampling and analytical testing will be completed.

Any clean fill imported to the Site will be sampled and tested to ensure the materials are clean and suitable for use. Prior to placement, additional information regarding the fill source will be obtained to verify the source of the imported soil and determine appropriate sampling and testing requirements. If the imported soil consists of native material from a previously undeveloped property, then a minimum of one sample of the soil will be collected for laboratory analysis of VOCs, PAHs and RCRA metals. Additional samples will be collected for laboratory analysis if multiple import sources are used, or if an import source is from a previously developed property. The imported soil will be considered suitable for use on the Site if the results are below residential SRVs for all parameters.

4.5 SEGREGATION AND DISPOSAL OF CONTAMINATED MATERIALS

Contaminated materials segregated by environmental monitoring will be loaded onto trucks and transported to a permitted local facility for disposal as industrial waste and/or alternative daily cover depending on its composition and specific disposal facility requirements. All temporary stockpiles used to stage contaminated materials during RAP implementation will be placed on and covered with plastic sheeting and secured with clean soil or other suitable materials. All contaminated material truckloads removed from the Site will be accompanied by a disposal manifest. MPCA VIC staff will be notified of the specific disposal facilities to be used for the project once they have been determined.

The asphalt parking surface and underlayment, wood, concrete and limestone debris materials will be segregated and targeted for recycling or disposal at a demolition waste landfill.

Areas or layers of clean material encountered during the contaminated fill soil excavation process will be segregated and targeted for on-site beneficial reuse. To be considered for on-site reuse, the soil must be geotechnically suitable for its intended use, have no elevated PID readings, and be free of indications of potential contamination including staining, odors or debris.

4.6 CONSTRUCTION CONTINGENCY PLAN

The Construction Contingency Plan outlined in this section will be implemented during development to address unanticipated significant contamination. When the environmental professional is not present on-site, it will be the responsibility of the owner and contractor to ensure that appropriate response actions are carried out in accordance with this section. Specifically, if any unanticipated significant contamination is encountered, excavation activities will cease until the situation has been properly assessed and a plan of action is developed. Potential contingency events could include encountering previously unknown tanks, drums, wells, oily substances, and/or suspect asbestos containing materials (ACMs). The following steps will be taken if such contingency events occur:

1. The situation will be assessed by the environmental professional to determine the nature of the issue and the potential risks involved. The MPCA VIC staff assigned to the project will be notified of the potential issue, as appropriate.

2. Samples of the suspect contaminated materials will be collected for laboratory analysis as appropriate. The analytical parameters will be selected based on the nature of the suspected contamination and input by the MPCA. Further actions will depend on the test results and discussions with MPCA staff.

3. If suspect ACM are identified, samples of the suspect materials will be collected by a licensed asbestos inspector and tested for asbestos. The need for further actions (e.g., Emissions Control Plan) related to asbestos will be dependent upon the test results.

4. All findings will be incorporated into the RAP Implementation Report prepared for the Site.

Contact information related to RAP implementation and construction contingencies is provided in **Section 6.0**.

Construction dewatering is not anticipated to be required for this project because ground water occurs at depth of at least 10 feet bgs. If perched ground water or storm water accumulates in the construction excavations in sufficient quantities, a Metropolitan Council Environmental Services (MCES) permit for discharge of water to the sanitary sewer will be considered. Sampling and monitoring will be conducted as required by the MCES permit.

5.0 RAP IMPLEMENTATION REPORT

Following completion of response actions for the redevelopment, a RAP Implementation Report will be prepared and submitted to the MPCA VIC Program. At a minimum, the RAP Implementation Report will include the following:

- Overview of the environmental response actions performed.
- Locations and volumes of contaminated soil and debris excavated and disposed.
- Environmental monitoring procedures and results.
- Documentation for final disposition of contaminated soil and debris (including manifests or load tickets).
- Documentation of imported fill sources and associated analytical testing results.
- Descriptions and documentation related to any contingency actions completed during construction.
- Photographic documentation.

6.0 SITE RESPONSIBILITIES AND COORDINATION

6.1 RESPONSIBILITY OF INVOLVED PARTIES

Specific responsibilities of the parties involved in the redevelopment of the Site include:

Minneapolis Park and Recreation Board (MPRB)

The MPRB will be the owner and master developer of the Site at the time of RAP implementation. The MPRB contact is:

Contact: Mr. Nick Eoloff
Address: Minneapolis Park and Recreation Board
2117 West River Road
Minneapolis, MN 55411
Phone: (612) 340-6465

Peer Engineering, Inc.

Peer is the Environmental Consultant for the MPRB and will be responsible for environmental monitoring and sampling, contaminated media characterization for disposal, documentation and reporting of all environmental activities in connection with the impacted soil. The Consultant's contacts include:

Contact: Mr. Robert J. Rykken, P.E., P.G., Senior Engineer
Mr. Steve Jansen, M.S., P.G., President
Address: Peer Engineering, Inc.
7615 Golden Triangle Drive, Suite N
Eden Prairie, MN 55344
Phone: (952) 831-3341

Minnesota Pollution Control Agency

The MPCA VIC Program has authority over all environmental response actions and is responsible for all review and approval of environmental activities performed at the property. The MPCA VIC Program contacts are:

Contacts:	Ms. Lynne Grigor
	Ms. Patrice Jensen
Address:	Minnesota Pollution Control Agency
	MPCA VIC Program
	520 Lafayette Road
	St. Paul, MN 55155
Phone:	(651) 757-2399 – Ms. Grigor
	(651) 757-2465 – Ms. Jensen

6.2 PROJECT COORDINATION

The MPRB and Peer will coordinate with the general contractor regarding the construction schedule. Peer will conduct environmental monitoring and sampling on behalf of the MPRB to help ensure that any contaminated materials encountered as part of redevelopment activities are properly identified and managed. Peer will communicate with the MPRB, MPCA VIC staff, and other interested parties as necessary regarding the environmental monitoring results and any necessary environmental actions.

7.0 TRAINING AND SITE SAFETY

Environmental professionals involved in monitoring and sampling activities will be required to meet the training requirements of 29 CFR 1920.120. Specifically, each person will have completed an OSHA certified 40-Hour Hazardous Waste Operations and Emergency Response (HAZWOPER) safety course. In addition, they will have experience in directing contaminated material excavation and be competent in proper screening and sampling procedures. Peer will prepare a Site Safety and Health Plan (SSHP) that addresses monitoring and sampling activities completed by its personnel.

Personnel involved with general construction activities will not be required to have special training or certificates. However, all contractor personnel and individuals who are involved with the handling and moving of potentially contaminated or known contaminated soil are required by OSHA to meet the training requirements of 29 CFR 1910.120, including the 40-hour HAZWOPER training and a current 8-hour refresher course. Personnel assisting with asbestos and lead-based paint abatement will have appropriate asbestos and lead credentials.

8.0 PROJECT SCHEDULE

It is currently anticipated that RAP implementation will commence during the Spring of 2011. Although specific completion dates for the development and RAP implementation are not known at this time, the following general scheduling considerations will apply to the environmental activities specified in this document:

- Materials sampled for analytical testing will be transported to the laboratory within one day of collection.

- Laboratory analytical results for further characterization of removed materials will be available approximately ten working days after sample submittal. If warranted rush (24 to 48 hour) laboratory analysis will be conducted.

- Excavated contaminated or potentially contaminated materials will be stockpiled onsite at a designated location the same day they are excavated or as soon thereafter as feasible.

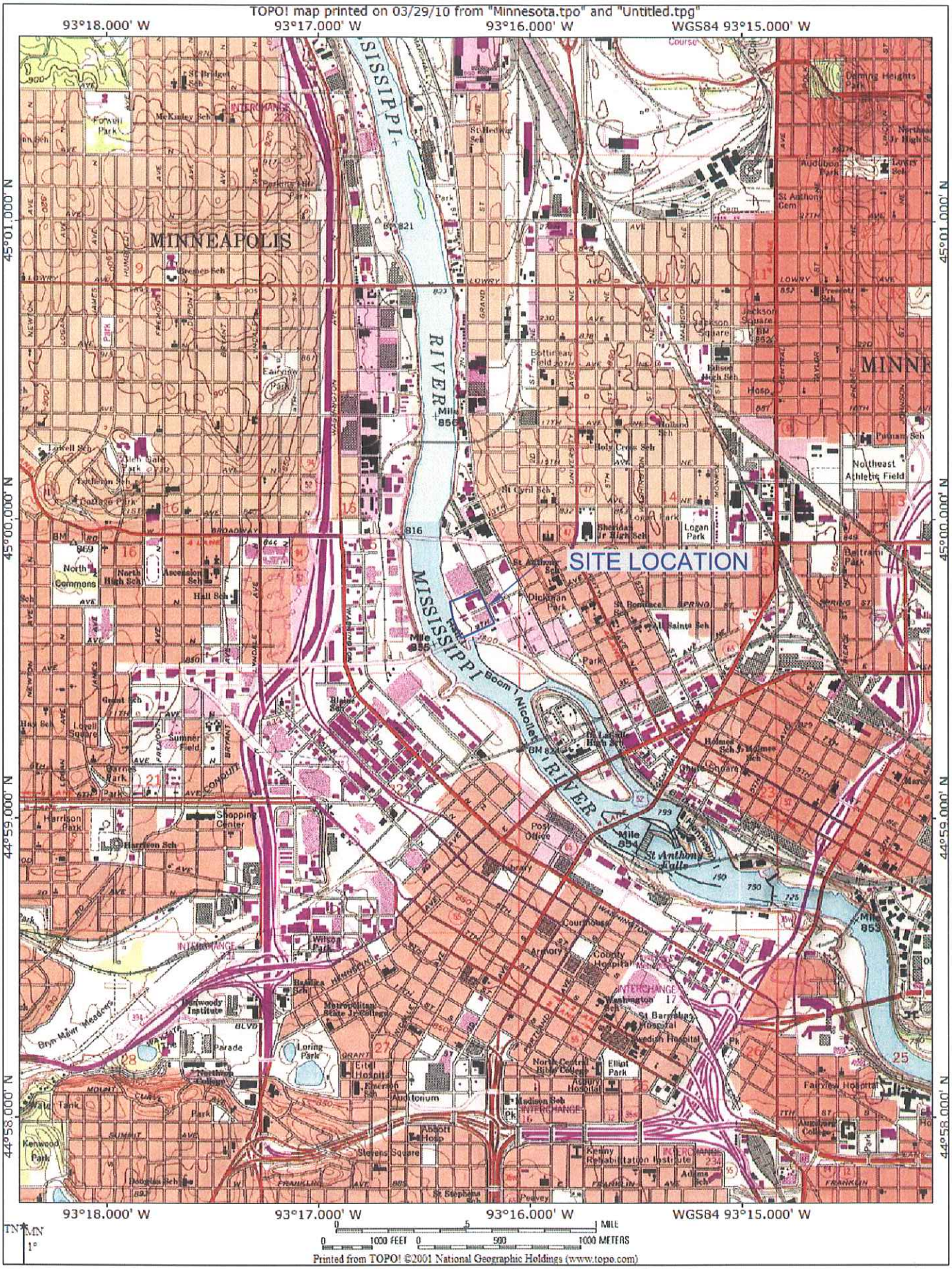
- For previously characterized contamination, preapproval to dispose of contaminated materials at a designated treatment/disposal facility will be obtained prior to excavation. If preapproval is not obtained, excavated contaminated materials will be stored onsite until appropriate analytical results have been received, waste characterization has been completed and the materials have been accepted for treatment/disposal at an offsite facility.

- Confirmation laboratory analytical results will be available within ten working days after the sample is submitted to the laboratory.

- The RAP Implementation Report will be submitted to the MPCA approximately four to six weeks following completion of response actions.

The MPCA will be notified of the schedule for the proposed additional pre-cleanup investigation described in **Section 3** prior to its implementation.

FIGURES



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SiteLocation.dwg

Peer Engineering

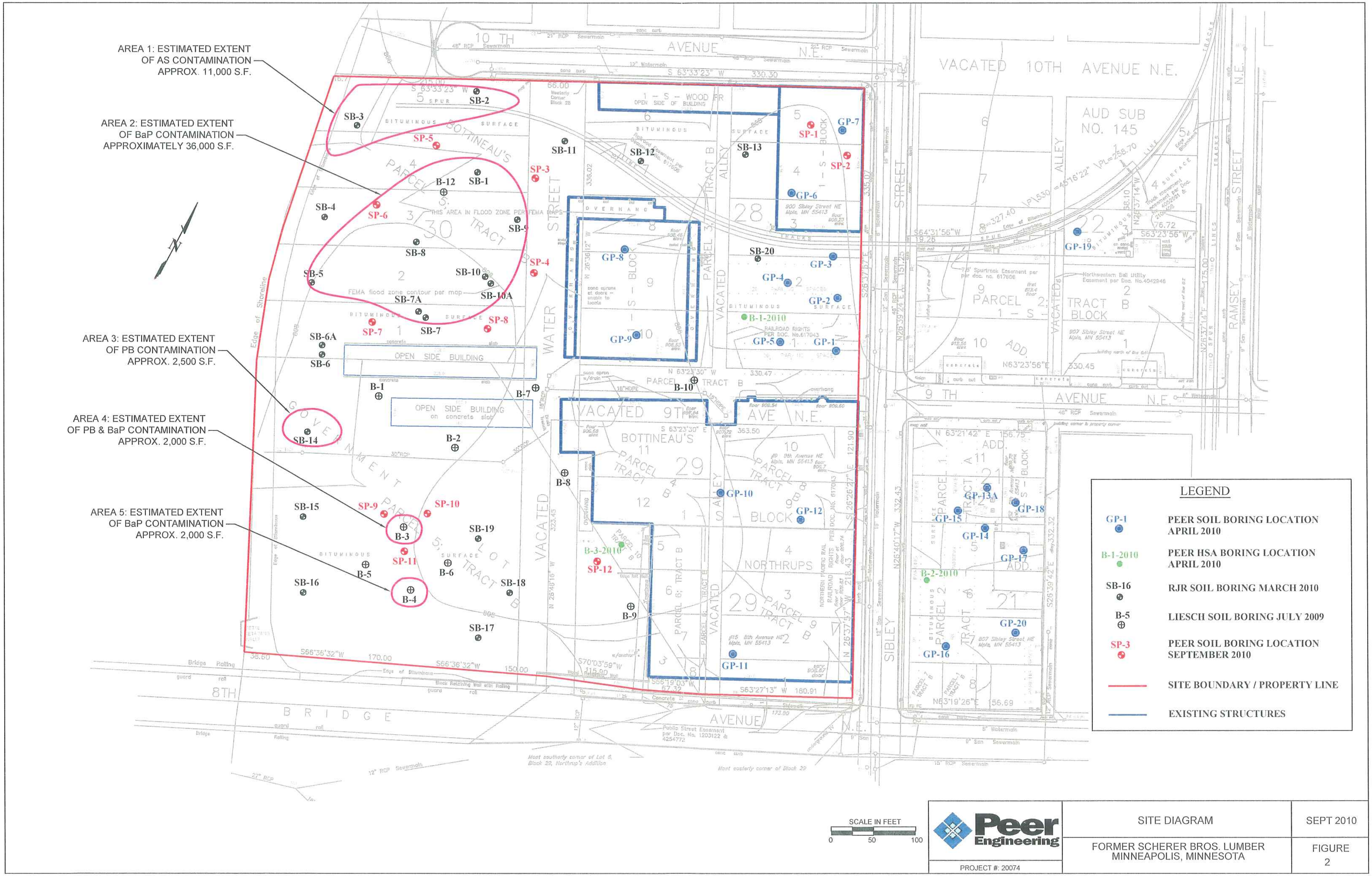
PROJECT #: 20074

SITE LOCATION MAP

OCT 2010

FORMER SCHERER BROS. LUMBER
MINNEAPOLIS, MINNESOTA

FIGURE
1


AREA 1: ESTIMATED EXTENT OF AS CONTAMINATION APPROX. 11,000 S.F.
AREA 2: ESTIMATED EXTENT OF BaP CONTAMINATION APPROXIMATELY 36,000 S.F.
AREA 3: ESTIMATED EXTENT OF PB CONTAMINATION APPROX. 2,500 S.F.
AREA 4: ESTIMATED EXTENT OF PB & BaP CONTAMINATION APPROX. 2,000 S.F.
AREA 5: ESTIMATED EXTENT OF BaP CONTAMINATION APPROX. 2,000 S.F.
LEGEND
GP-1 PEER SOIL BORING LOCATION APRIL 2010
B-1-2010 PEER HSA BORING LOCATION APRIL 2010
SB-16 RJR SOIL BORING MARCH 2010
B-5 LIESCH SOIL BORING JULY 2009
SP-3 PEER SOIL BORING LOCATION SEPTEMBER 2010
SITE BOUNDARY / PROPERTY LINE
EXISTING STRUCTURES
SCALE IN FEET
0 50 100
Peer Engineering
PROJECT #: 20074
SITE DIAGRAM
FORMER SCHERER BROS. LUMBER
MINNEAPOLIS, MINNESOTA
SEPT 2010
FIGURE 2

TABLES

Table 1
Soil Analytical Results - Peer - September 2010
Scherer Bros Lumber Property
Minneapolis, Minnesota

Compound/Parameter	CAS No.	Recreational Soil Reference Value (SRV)	Industrial Soil Reference Value (SRV)	Tier I Soil Leaching Value (SLV)	Sample Identifier and Date Collected													
					SP-1 (3-4')	SP-2 (0.5-5')	SP-3 (0.5-2')	SP-4 (0.5-2')	SP-5 (0.5-4')	SP-6 (0.5-4')	SP-6 (4-7')	SP-7 (0.5-2')	SP-8 (3.5-5.5')	SP-9 (0.5-4')	SP-10 (4-8')	SP-11 (0.5-4')	SP-11 (4-8')	SP-12 (0.5-4')
					9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010	9/8/2010
Volatile Organic Compounds (VOCs) reported in mg/kg																		
Chloroform	67-66-3	7	4	0.17	0.166	NA	ND (0.0511)	NA	ND (0.0537)	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	19	22	0.14	0.358	NA	ND (0.0511)	NA	ND (0.0537)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	24	28	7.5	ND (0.251)	NA	ND (0.204)	NA	0.462	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	260	305	6.4	ND (0.0627)	NA	0.0725	NA	ND (0.0537)	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	28	33	0.27	0.0711	NA	ND (0.0511)	NA	ND (0.0537)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	82	46	0.14	13.6	NA	ND (0.0511)	NA	ND (0.0537)	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	95-63-6	20	25	NA	ND (0.0627)	NA	0.101	NA	ND (0.0537)	NA	NA	NA	NA	NA	NA	NA	NA	NA
All other reported VOCs	NE	Various	Various	Various	ND	NA	ND	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polynuclear Aromatic Hydrocarbons (PAHs) reported in mg/kg																		
Acenaphthene	83-32-9	1,860	5,260	50	ND (0.124)	0.434	0.108	0.472	0.186	ND (0.216)	0.256	ND (0.0548)	ND (0.0107)	ND (0.108)	NA	0.327	NA	4.89
Acenaphthylene	208-96-8	NE	NE	NE	0.394	0.15	ND (0.105)	0.129	ND (0.110)	ND (0.216)	ND (0.116)	0.0783	ND (0.0107)	ND (0.108)	NA	ND (0.267)	NA	ND (1.06)
Anthracene	120-12-7	10,000	45,400	942	0.427	0.974	ND (0.105)	0.554	0.114	0.241	0.525	0.0766	0.0128	ND (0.108)	NA	0.58	NA	10.2
Benzo(a)anthracene	56-55-3	[c]	[c]	[c]	3.45	2.59	0.268	0.762	0.663	1.01	1.06	0.242	0.0597	0.236	NA	1.33	NA	20.9
Benzo(a)pyrene	50-32-8	[c]	[c]	[c]	4.88	2.27	0.378	1.02	0.813	1.5	0.957	0.304	0.0669	0.258	NA	1.19	NA	20.3
Benzo(b)fluoranthene	205-99-2	[c]	[c]	[c]	5.34	3	0.486	1.26	1.11	2.18	1.25	0.413	0.102	0.344	NA	1.64	NA	23.9
Benzo(g,h,i)perylene	191-24-2	NE	NE	NE	7.1	1.69	0.537	0.975	0.937	1.94	0.783	0.336	0.057	0.361	NA	0.97	NA	14.4
Benzo(k)fluoranthene	207-08-9	[c]	[c]	[c]	2.1	1.05	0.158	0.342	0.411	0.786	0.444	0.138	0.034	ND (0.108)	NA	0.586	NA	8.43
Chrysene	218-01-9	[c]	[c]	[c]	3.29	2.54	0.436	0.862	0.746	1.32	1.15	0.285	0.0687	0.35	NA	1.74	NA	19
Dibenz(a,h)anthracene	53-70-3	[c]	[c]	[c]	1.44	0.162	ND (0.105)	ND (0.107)	ND (0.110)	ND (0.216)	ND (0.116)	ND (0.0548)	ND (0.0107)	ND (0.108)	NA	ND (0.267)	NA	1.08
Fluoranthene	206-44-0	1,290	6,800	295	2.21	5.83	0.45	1.55	1.2	1.51	3.04	0.376	0.0851	0.397	NA	3.76	NA	45.6
Fluorene	86-73-7	1,200	4,120	47	ND (0.124)	0.416	0.114	0.239	0.113	ND (0.216)	0.195	ND (0.0548)	ND (0.0107)	ND (0.108)	NA	0.277	NA	5.11
Indeno(1,2,3-cd)pyrene	193-39-5	[c]	[c]	[c]	4.61	1.35	0.29	0.684	0.698	1.48	0.621	0.224	0.0466	0.201	NA	0.8	NA	11.5
Naphthalene	91-20-3	24	28	7.5	ND (0.124)	0.368	0.266	ND (0.107)	0.541	ND (0.216)	ND (0.116)	0.0579	0.0678	ND (0.108)	NA	ND (0.267)	NA	ND (1.06)
Phenanthrene	85-01-8	NE	NE	NE	0.81	4.57	0.268	1.57	0.527	0.827	2.18	0.202	0.0644	0.205	NA	2.31	NA	33.3
Pyrene	129-00-0	1,060	5,800	272	2.73	5.16	0.605	1.82	1.13	1.57	2.5	0.398	0.0858	0.385	NA	2.97	NA	48.9
BaP Equivalent [c]	NE	2	3	10.2	7.27	3.19	0.503	1.33	1.11	2.06	1.31	0.41	0.092	0.4	NA	1.64	NA	27.57
Metals reported in mg/kg																		
Arsenic, Total	7440-38-2	11	20	15.1	16.3	31.2	7.2	8.8	9.2	6.8	9.2	6.7	6.6	8.5	9.9	6.7	10.5	17.1
Barium, Total	7440-39-3	1,100	18,000	842	201	396	36	69.2	63.9	50.1	99.7	104	43.1	46.9	114	74.2	88.6	81.9
Cadmium, Total	7440-43-9	35	200	4.4	1.8	1.3	ND (0.047)	ND (0.038)	1.1	0.74	0.8	0.47	ND (0.038)	ND (0.047)	0.52	0.42	ND (0.045)	1.8
Chromium, Total [d]	7440-47-3	60,000/120[d]	100,000/650 [d]	1,000,000/18 [d]	26.2	12.3	8.2	5.5	9.8	8.3	12.5	9.1	7.7	12.3	11.6	10.3	12.5	12.3
Lead, Total	7439-92-1	300	700	525	677	153	25.9	29.1	180	62.6	31.7	46.5	23.6	28.9	231	66.5	118	482
Mercury, Total	7439-97-6	1.2	1.5	1.6	0.27	0.2	0.047	0.16	0.14	0.4	0.082	0.12	0.1	0.16	0.43	0.22	0.58	0.24
Selenium, Total	7782-49-2	200	1,300	1.5	1.6	1.5	ND (0.70)	ND (0.58)	ND (0.56)	ND (0.69)	1.3	ND (0.61)	0.57	ND (0.71)	ND (0.66)	1.1	ND (0.67)	ND (0.67)
Silver, Total	7440-22-4	200	1,300	3.9	ND (0.58)	ND (0.47)	ND (0.47)	ND (0.38)	ND (0.37)	ND (0.46)	ND (0.46)	ND (0.41)	ND (0.38)	ND (0.47)	ND (0.44)	ND (0.4)	ND (0.45)	ND (0.45)
Other Parameters reported in mg/kg																		
Diesel Range Organics (DRO)	NE	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	769
Gasoline Range Organics (GRO)	NE	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other Parameters reported in mg/L																		
TCLP Lead [e]	NE	NE	NE	NE	Pending	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Pending
TCLP Mercury [f]	NE	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NOTES:
mg/kg = Milligrams per kilogram.
mg/L = Milligrams per liter.
NA = Sample not analyzed for this parameter.
ND = Not detected at or above the laboratory reporting limit indicated in parentheses.
NE = Regulatory limit not established for this parameter.
* = High boiling point hydrocarbons are present in the sample.
[c] = Benzo(a)pyrene (BaP) equivalent is a calculated value based on the weighted concentration and toxicity of the following compounds: benzo(a)anthracene, benzo(b)fluranthene, benzo(k)fluoranthene, benzo(a)pyrene, chyrsene, dibenz(a,h)anthracene, and indeno (1,2,3-cd)pyrene.
[d] = Reported result(s) is total chromium, regulatory limits for chromium III and chromium VI are provided.
[e] = Hazardous Waste Criteria for TCLP Lead is 5.0 mg/L.
[f] = Hazardous Waste Criteria for TCLP Mercury is 0.2 mg/L.

Exceeds Recreational SRV
Exceeds Tier I SLV
Exceeds Recreational and Industrial SRVs
Exceeds Recreational SRV and Tier I SLV
Exceeds Recreational and Industrial SRVs and Tier I SLV

Table 2
Soil Analytical Results - Peer - April 2010
Scherer Bros Lumber Property
Minneapolis, Minnesota

Compound/Parameter	CAS No.	Recreational Soil Reference Value (SRV)	Industrial Soil Reference Value (SRV)	Tier I Soil Leaching Value (SLV)	Sample Identifier and Date Collected											
					GP-1 (2-4')	GP-2 (2-4')	GP-3 (1-4')	GP-4 (2-4')	GP-5 (1-3')	GP-6 (1-4')	GP-7 (1-4')	GP-9 (0.5-2')	GP-10 (0.5-2')	GP-11 (0.5-2')	B-3-2010 (1-2')	Trip Blank
					4/22/2010	4/22/2010	4/22/2010	4/22/2010	4/22/2010	4/22/2010	4/22/2010	4/22/2010	4/22/2010	4/22/2010	4/28/2010	4/28/2010
Volatile Organic Compounds (VOCs) reported in mg/kg																
Chloroform	67-66-3	7	4	0.17	NA	NA	NA	NA	NA	NA	0.123	NA	NA	NA	NA	ND (0.05)
cis-1,2-Dichloroethene	156-59-2	19	22	0.14	NA	NA	NA	NA	NA	NA	0.288	NA	NA	NA	NA	ND (0.05)
Naphthalene	91-20-3	24	28	7.5	NA	NA	NA	NA	NA	NA	ND (0.266)	NA	NA	NA	NA	ND (0.2)
Toluene	108-88-3	260	305	6.4	NA	NA	NA	NA	NA	NA	ND (0.0665)	NA	NA	NA	NA	ND (0.05)
trans-1,2-Dichloroethene	156-60-5	28	33	0.27	NA	NA	NA	NA	NA	NA	ND (0.0665)	NA	NA	NA	NA	ND (0.05)
Trichloroethene	79-01-6	82	46	0.14	NA	NA	NA	NA	NA	NA	12.9	NA	NA	NA	NA	ND (0.05)
1,2,4-Trimethylbenzene	95-63-6	20	25	NA	NA	NA	NA	NA	NA	NA	ND (0.0665)	NA	NA	NA	NA	ND (0.05)
All other reported VOCs	NE	Various	Various	Various	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND
Polynuclear Aromatic Hydrocarbons (PAHs) reported in mg/kg																
Acenaphthene	83-32-9	1,860	5,260	50	ND (0.554)	ND (0.116)	1.48	ND (0.064)	ND (0.0113)	0.111	0.233	0.449	ND (0.0617)	0.156	0.526	NA
Acenaphthylene	208-96-8	NE	NE	NE	0.121	ND (0.116)	0.195	ND (0.064)	0.115	0.0977	ND (0.135)	0.441	0.155	0.0648	0.222	NA
Anthracene	120-12-7	10,000	45,400	942	ND (0.554)	0.321	4.33	ND (0.064)	0.025	0.341	0.983	2.6	0.109	0.483	ND (0.0544)	NA
Benzo(a)anthracene	56-55-3	[c]	[c]	[c]	0.573	0.769	10.4	0.266	0.0733	1.11	4.33	7.9	0.553	1.23	0.702	NA
Benzo(a)pyrene	50-32-8	[c]	[c]	[c]	0.590	0.684	7.33	0.238	0.0682	0.875	3.35	5.21	0.683	0.987	0.477	NA
Benzo(b)fluoranthene	205-99-2	[c]	[c]	[c]	0.763	1.020	10.1	0.376	0.112	1.62	4.28	7.03	1.1	1.64	0.813	NA
Benzo(g,h,i)perylene	191-24-2	NE	NE	NE	0.273	0.246	5.17	0.212	0.0524	0.45	1.08	1.86	0.522	0.54	0.271	NA
Benzo(k)fluoranthene	207-08-9	[c]	[c]	[c]	0.286	0.436	3.39	0.146	0.0413	0.46	1.43	3.06	0.401	0.532	0.217	NA
Chrysene	218-01-9	[c]	[c]	[c]	0.461	0.616	7.58	0.214	0.0724	0.989	3.18	5.49	0.468	1.01	0.434	NA
Dibenz(a,h)anthracene	53-70-3	[c]	[c]	[c]	0.103	ND (0.116)	1.58	ND (0.064)	0.0149	0.147	0.374	0.752	0.144	0.175	0.0821	NA
Fluoranthene	206-44-0	1,290	6,800	295	0.456	1.450	18.5	0.371	0.129	1.81	6.2	14.9	0.641	2.29	1.09	NA
Fluorene	86-73-7	1,200	4,120	47	ND (0.554)	ND (0.116)	1.27	ND (0.064)	ND (0.0113)	0.122	0.219	0.622	ND (0.0617)	0.139	0.579	NA
Indeno(1,2,3-cd)pyrene	193-39-5	[c]	[c]	[c]	0.260	0.223	4.05	0.175	0.046	0.44	0.991	1.97	0.422	0.495	0.225	NA
Naphthalene	91-20-3	24	28	7.5	ND (0.554)	0.135	0.208	ND (0.064)	ND (0.0113)	0.103	0.2	ND (0.109)	0.0673	0.0701	0.816	NA
Phenanthrene	85-01-8	NE	NE	NE	0.184	1.140	15.5	0.31	0.127	1.62	3.06	7.08	0.317	1.75	1.74	NA
Pyrene	129-00-0	1,060	5,800	272	0.622	1.230	17.3	0.32	0.0813	1.26	7.96	12.5	0.552	1.85	1.33	NA
BaP Equivalent [c]	NE	2	3	10.2	0.840	0.935	11.085	0.336	0.105	1.330	4.694	7.682	1.016	1.485	0.723	NA
Metals reported in mg/kg																
Arsenic, Total	7440-38-2	11	20	15.1	6.4	15.3	5.1	11.6	7.7	7.7	27.6	8	10	21.2	8	NA
Barium, Total	7440-39-3	1,100	18,000	842	65.1	109	120	129	74.6	174	304	71.1	78.3	106	161	NA
Cadmium, Total	7440-43-9	35	200	4.4	0.86	2.7	17.8	2.5	0.86	0.75	3	ND (0.050)	1.3	3.3	0.74	NA
Chromium, Total [d]	7440-47-3	60,000/120[d]	100,000/650 [d]	1,000,000/18 [d]	8.4	12.6	8.9	14	9.3	17.2	17	11.3	8	11.5	9.8	NA
Lead, Total	7439-92-1	300	700	525	28.9	155	34.8	36.1	97.3	119	2,120	24.7	119	135	92.5	NA
Mercury, Total	7439-97-6	1.2	1.5	1.6	0.05	0.26	0.07	0.11	0.063	0.19	0.69	0.04	0.25	0.14	0.11	NA
Selenium, Total	7782-49-2	200	1,300	1.5	1.4	2.1	1.1	2.2	1.5	1.3	4.7	1.1	2	2.8	3.5	NA
Silver, Total	7440-22-4	200	1,300	3.9	ND (0.50)	ND (0.48)	ND (0.71)	ND (0.51)	ND (0.47)	ND (0.44)	ND (0.58)	ND (0.50)	ND (0.54)	ND (0.52)	ND (0.38)	NA
Other Parameters reported in mg/kg																
Diesel Range Organics (DRO)	NE	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1130*	NA
Gasoline Range Organics (GRO)	NE	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other Parameters reported in mg/L																
TCLP Lead [e]	NE	NE	NE	NE	NA	NA	NA	NA	NA	NA	0.43	NA	NA	NA	NA	NA
TCLP Mercury [f]	NE	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NOTES:
mg/kg = Milligrams per kilogram.
mg/L = Milligrams per liter.
NA = Sample not analyzed for this parameter.
ND = Not detected at or above the laboratory reporting limit indicated in parentheses.
NE = Regulatory limit not established for this parameter.
* = High boiling point hydrocarbons are present in the sample.
[c] = Benzo(a)pyrene (BaP) equivalent is a calculated value based on the weighted concentration and toxicity of the following compounds: benzo(a)anthracene, benzo(b)fluranthene, benzo(k)fluoranthene, benzo(a)pyrene, chyrsene, dibenz(a,h)anthracene, and indeno (1,2,3-cd)pyrene.
[d] = Reported result(s) is total chromium, regulatory limits for chromium III and chromium VI are provided.
[e] = Hazardous Waste Criteria for TCLP Lead is 5.0 mg/L.
[f] = Hazardous Waste Criteria for TCLP Mercury is 0.2 mg/L.

Exceeds Recreational SRV
Exceeds Tier I SLV
Exceeds Recreational and Industrial SRVs
Exceeds Recreational SRV and Tier I SLV
Exceeds Recreational and Industrial SRVs and Tier I SLV

Table 3
Soil Analytical Results - RJR Borings
Scherer Bros Lumber Property
Minneapolis, Minnesota

Compound/Parameter	CAS No.	Recreational Soil Reference Value (SRV)	Industrial Soil Reference Value (SRV)	Tier I Soil Leaching Value (SLV)	Sample Identifier and Date Collected												
					SB-1 (1-3')	SB-2 (1-3')	SB-3 (1-2.5')	SB-3 (5-6')	SB-4 (0.5-2')	SB-4 (6-8')	SB-5 (2-4')	SB-6 (3-4')	SB-7 (5-7')	SB-8 (1-3')	SB-8 (6.5-8')	SB-9 (1-2')	SB-10 (2-3')
					3/1/2010	3/1/2010	3/1/2010	3/1/2010	3/1/2010	3/1/2010	3/1/2010	3/1/2010	3/1/2010	3/1/2010	3/1/2010	3/1/2010	3/1/2010
Volatile Organic Compounds (VOCs) reported in mg/kg																	
Chloroform	67-66-3	7	4	0.17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	19	22	0.14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	24	28	7.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	260	305	6.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	28	33	0.27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	82	46	0.14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	95-63-6	20	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
All other reported VOCs	NE	Various	Various	Various	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polynuclear Aromatic Hydrocarbons (PAHs) reported in mg/kg																	
Acenaphthene	83-32-9	1,860	5,260	50	ND (1.6)	ND (0.36)	ND (0.73)	ND (0.39)	ND (0.35)	ND (0.39)	ND (0.37)	ND (0.69)	2.6	3.1	ND (0.46)	39	2
Acenaphthylene	208-96-8	NE	NE	NE	ND (1.6)	ND (0.36)	ND (0.73)	ND (0.39)	ND (0.35)	ND (0.39)	ND (0.37)	ND (0.69)	ND (1.8)	ND (1.8)	ND (0.46)	ND (14)	ND (1.9)
Anthracene	120-12-7	10,000	45,400	942	2.6	ND (0.36)	ND (0.73)	ND (0.39)	0.42	ND (0.39)	0.64	ND (0.69)	5.2	4.6	ND (0.46)	75	7.8
Benzo(a)anthracene	56-55-3	[c]	[c]	[c]	8.8	ND (0.36)	1.2	ND (0.39)	0.8	ND (0.39)	2.9	ND (0.69)	11	7	ND (0.46)	74	12
Benzo(a)pyrene	50-32-8	[c]	[c]	[c]	7.4	ND (0.36)	1.2	ND (0.39)	0.89	0.63	2.5	ND (0.69)	11	11	ND (0.46)	76	13
Benzo(b)fluoranthene	205-99-2	[c]	[c]	[c]	9.4	ND (0.36)	1.8	ND (0.39)	0.9	1	2.7	ND (0.69)	11	11	ND (0.46)	79	14
Benzo(g,h,i)perylene	191-24-2	NE	NE	NE	4.2	ND (0.36)	1.5	ND (0.39)	0.77	0.69	1.3	ND (0.69)	6.9	7.1	ND (0.46)	40	7.4
Benzo(k)fluoranthene	207-08-9	[c]	[c]	[c]	4.1	ND (0.36)	0.9	ND (0.39)	0.48	ND (0.39)	1.3	ND (0.69)	4.7	4.6	ND (0.46)	36	5.9
Chrysene	218-01-9	[c]	[c]	[c]	8.6	ND (0.36)	1.5	ND (0.39)	0.9	0.58	2.9	ND (0.69)	10	7.3	ND (0.46)	68	12
Dibenz(a,h)anthracene	53-70-3	[c]	[c]	[c]	ND (1.6)	ND (0.36)	ND (0.73)	ND (0.39)	ND (0.35)	ND (0.39)	0.45	ND (0.69)	2	2.1	ND (0.46)	ND (14)	2.3
Fluoranthene	206-44-0	1,290	6,800	295	27	ND (0.36)	1.9	ND (0.39)	2.6	0.44	5.2	ND (0.69)	20	13	0.53	190	27
Fluorene	86-73-7	1,200	4,120	47	ND (1.6)	ND (0.36)	ND (0.73)	ND (0.39)	ND (0.35)	ND (0.39)	ND (0.37)	ND (0.69)	2.3	3.4	ND (0.46)	47	3.2
Indeno(1,2,3-cd)pyrene	193-39-5	[c]	[c]	[c]	4.6	ND (0.36)	1.2	ND (0.39)	0.51	0.63	1.3	ND (0.69)	6.7	6.7	ND (0.46)	41	7.6
Naphthalene	91-20-3	24	28	7.5	ND (1.6)	ND (0.36)	ND (0.73)	ND (0.39)	0.55	ND (0.39)	ND (0.37)	ND (0.69)	ND (1.8)	ND (1.8)	ND (0.46)	ND (14)	ND (1.9)
Phenanthrene	85-01-8	NE	NE	NE	8.1	ND (0.36)	0.79	ND (0.39)	1.4	ND (0.39)	1.4	ND (0.69)	15	11	ND (0.46)	190	20
Pyrene	129-00-0	1,060	5,800	272	13	ND (0.36)	1.2	ND (0.39)	3.5	ND (0.39)	4.8	ND (0.69)	17	13	ND (0.46)	140	21
BaP Equivalent [c]	NE	2	3	10.2	10.18	ND	1.73	ND	1.17	ND	3.6	ND	15.56	15.18	ND	99.68	18.36
Metals reported in mg/kg																	
Arsenic, Total	7440-38-2	11	20	15.1	16	14	24	3	3.5	9.4	3.5	3.4	4.4	3	17	3.3	7.5
Barium, Total	7440-39-3	1,100	18,000	842	25	57	120	59	60	84	52	41	70	46	820	41	70
Cadmium, Total	7440-43-9	35	200	4.4	14	32	1.4	ND (0.29)	0.39	0.85	0.35	ND (0.26)	0.35	ND (0.27)	2.3	0.31	0.59
Chromium, Total [d]	7440-47-3	60,000/120[d]	100,000/650 [d]	1,000,000/18 [d]	16	9	18	10	14	19	11	8.7	8.7	12	19	19	9.5
Lead, Total	7439-92-1	300	700	525	940	120	180	24	23	170	41	11	52	41	1,000	64	69
Mercury, Total	7439-97-6	1.2	1.5	1.6	8	ND (0.11)	0.74	ND (0.12)	0.19	0.17	0.15	ND (0.11)	0.14	0.15	0.16	0.15	0.19
Selenium, Total	7782-49-2	200	1,300	1.5	1.8	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.1)	1.8	ND (1.1)	ND (1.1)
Silver, Total	7440-22-4	200	1,300	3.9	ND (0.32)	ND (0.27)	ND (0.27)	ND (0.29)	ND (0.27)	ND (0.29)	ND (0.28)	ND (0.26)	ND (0.28)	ND (0.27)	0.95	ND (0.27)	ND (0.27)
Other Parameters reported in mg/kg																	
Diesel Range Organics (DRO)	NE	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gasoline Range Organics (GRO)	NE	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other Parameters reported in mg/L																	
TCLP Lead [e]	NE	NE	NE	NE	0.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.21	NA	NA
TCLP Mercury [f]	NE	NE	NE	NE	ND (0.015)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NOTES:
mg/kg = Milligrams per kilogram.
mg/L = Milligrams per liter.
NA = Sample not analyzed for this parameter.
ND = Not detected at or above the laboratory reporting limit indicated in parentheses.
NE = Regulatory limit not established for this parameter.
* = High boiling point hydrocarbons are present in the sample.
[c] = Benzo(a)pyrene (BaP) equivalent is a calculated value based on the weighted concentration and toxicity of the following compounds: benzo(a)anthracene, benzo(b)fluranthene, benzo(k)fluoranthene, benzo(a)pyrene, chyrsene, dibenz(a,h)anthracene, and indeno (1,2,3-cd)pyrene.
[d] = Reported result(s) is total chromium, regulatory limits for chromium III and chromium VI are provided.
[e] = Hazardous Waste Criteria for TCLP Lead is 5.0 mg/L.
[f] = Hazardous Waste Criteria for TCLP Mercury is 0.2 mg/L.

Exceeds Recreational SRV
Exceeds Tier I SLV
Exceeds Recreational and Industrial SRVs
Exceeds Recreational SRV and Tier I SLV
Exceeds Recreational and Industrial SRVs and Tier I SLV

Table 3
Soil Analytical Results - RJR Borings
Scherer Bros Lumber Property
Minneapolis, Minnesota

Compound/Parameter	CAS No.	Recreational Soil Reference Value (SRV)	Industrial Soil Reference Value (SRV)	Tier I Soil Leaching Value (SLV)	Sample Identifier and Date Collected								
					SB-11 (2.5-4')	SB-12 (1-2.5')	SB-13 (1-2.5')	SB-14 (2-4')	SB-15 (6-8')	SB-16 (1-3')	SB-17 (1-2.5')	SB-19 (2-4')	SB-20 (1-2')
					3/2/2010	3/2/2010	3/2/2010	3/2/2010	3/2/2010	3/2/2010	3/2/2010	3/2/2010	3/2/2010
Volatile Organic Compounds (VOCs) reported in mg/kg													
Chloroform	67-66-3	7	4	0.17	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	19	22	0.14	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	24	28	7.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	108-88-3	260	305	6.4	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	28	33	0.27	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	82	46	0.14	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	95-63-6	20	25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
All other reported VOCs	NE	Various	Various	Various	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polynuclear Aromatic Hydrocarbons (PAHs) reported in mg/kg													
Acenaphthene	83-32-9	1,860	5,260	50	ND (0.45)	ND (0.42)	ND (0.38)	ND (0.36)	ND (0.37)	ND (0.35)	ND (0.37)	ND (0.35)	ND (0.39)
Acenaphthylene	208-96-8	NE	NE	NE	ND (0.45)	ND (0.42)	ND (0.38)	ND (0.36)	ND (0.37)	ND (0.35)	ND (0.37)	ND (0.35)	ND (0.39)
Anthracene	120-12-7	10,000	45,400	942	ND (0.45)	ND (0.42)	ND (0.38)	ND (0.36)	ND (0.37)	ND (0.35)	ND (0.37)	**0.42**	ND (0.39)
Benzo(a)anthracene	56-55-3	[c]	[c]	[c]	**0.9**	ND (0.42)	ND (0.38)	ND (0.36)	**0.57**	ND (0.35)	ND (0.37)	**1.3**	**0.8**
Benzo(a)pyrene	50-32-8	[c]	[c]	[c]	**0.71**	ND (0.42)	ND (0.38)	ND (0.36)	**0.57**	ND (0.35)	ND (0.37)	**1.2**	**1.6**
Benzo(b)fluoranthene	205-99-2	[c]	[c]	[c]	**0.86**	ND (0.42)	ND (0.38)	ND (0.36)	**0.62**	ND (0.35)	ND (0.37)	**1.1**	**1.5**
Benzo(g,h,i)perylene	191-24-2	NE	NE	NE	**0.71**	ND (0.42)	ND (0.38)	ND (0.36)	**0.38**	ND (0.35)	ND (0.37)	**0.69**	**1.5**
Benzo(k)fluoranthene	207-08-9	[c]	[c]	[c]	ND (0.45)	ND (0.42)	ND (0.38)	ND (0.36)	ND (0.37)	ND (0.35)	ND (0.37)	**0.56**	**0.55**
Chrysene	218-01-9	[c]	[c]	[c]	**0.92**	ND (0.42)	ND (0.38)	ND (0.36)	**0.55**	ND (0.35)	ND (0.37)	**1.2**	**0.96**
Dibenz(a,h)anthracene	53-70-3	[c]	[c]	[c]	ND (0.45)	ND (0.42)	ND (0.38)	ND (0.36)	ND (0.37)	ND (0.35)	ND (0.37)	ND (0.35)	ND (0.39)
Fluoranthene	206-44-0	1,290	6,800	295	**1.5**	ND (0.42)	**0.53**	ND (0.36)	**1.5**	0.41	ND (0.37)	**2.8**	**1**
Fluorene	86-73-7	1,200	4,120	47	ND (0.45)	ND (0.42)	ND (0.38)	ND (0.36)	ND (0.37)	ND (0.35)	ND (0.37)	ND (0.35)	ND (0.39)
Indeno(1,2,3-cd)pyrene	193-39-5	[c]	[c]	[c]	**0.49**	ND (0.42)	ND (0.38)	ND (0.36)	ND (0.37)	ND (0.35)	ND (0.37)	**0.62**	**1.4**
Naphthalene	91-20-3	24	28	7.5	ND (0.45)	ND (0.42)	ND (0.38)	ND (0.36)	ND (0.37)	ND (0.35)	ND (0.37)	ND (0.35)	ND (0.39)
Phenanthrene	85-01-8	NE	NE	NE	**0.87**	ND (0.42)	**0.59**	ND (0.36)	**0.97**	ND (0.35)	ND (0.37)	**1.4**	**0.68**
Pyrene	129-00-0	1,060	5,800	272	**1.2**	ND (0.42)	ND (0.38)	ND (0.36)	**0.76**	**0.37**	ND (0.37)	**2.3**	**0.89**
BaP Equivalent [c]	NE	2	3	10.2	**0.94**	ND	ND	ND	**0.69**	ND	ND	**1.57**	**2.03**
Metals reported in mg/kg													
Arsenic, Total	7440-38-2	11	20	15.1	**8.7**	**2.7**	**7.9**	**5.5**	**3.3**	**3.1**	**3.5**	**3.8**	**4.8**
Barium, Total	7440-39-3	1,100	18,000	842	**130**	**84**	**130**	**130**	**44**	**39**	**78**	**58**	**320**
Cadmium, Total	7440-43-9	35	200	4.4	**1**	ND (0.32)	**0.33**	**0.49**	ND (0.28)	ND (0.27)	ND (0.28)	**0.28**	**1.7**
Chromium, Total [d]	7440-47-3	60,000/120[d]	100,000/650 [d]	1,000,000/18 [d]	**15**	**19**	**10**	**15**	**8.5**	**9.8**	**9.6**	**11**	**12**
Lead, Total	7439-92-1	300	700	525	**310**	**5**	**39**	**500**	**74**	**95**	**34**	**46**	**180**
Mercury, Total	7439-97-6	1.2	1.5	1.6	**0.24**	ND (0.12)	**0.13**	**0.4**	**0.28**	ND (0.11)	ND (0.11)	**0.13**	ND (0.12)
Selenium, Total	7782-49-2	200	1,300	1.5	ND (1.4)	ND (1.3)	ND (1.1)	ND (1.0)	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)
Silver, Total	7440-22-4	200	1,300	3.9	ND (0.34)	ND (0.32)	**0.38**	ND (0.26)	ND (0.28)	ND (0.28)	ND (0.28)	ND (0.28)	ND (0.3)
Other Parameters reported in mg/kg													
Diesel Range Organics (DRO)	NE	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gasoline Range Organics (GRO)	NE	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other Parameters reported in mg/L													
TCLP Lead [e]	NE	NE	NE	NE	NA	NA	NA	**0.12**	NA	NA	NA	NA	NA
TCLP Mercury [f]	NE	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA

NOTES:
mg/kg = Milligrams per kilogram.
mg/L = Milligrams per liter.
NA = Sample not analyzed for this parameter.
ND = Not detected at or above the laboratory reporting limit indicated in parentheses.
NE = Regulatory limit not established for this parameter.
* = High boiling point hydrocarbons are present in the sample.
[c] = Benzo(a)pyrene (BaP) equivalent is a calculated value based on the weighted concentration and toxicity of the following compounds: benzo(a)anthracene, benzo(b)fluranthene, benzo(k)fluoranthene, benzo(a)pyrene, chyrsene, dibenz(a,h)anthracene, and indeno (1,2,3-cd)pyrene.
[d] = Reported result(s) is total chromium, regulatory limits for chromium III and chromium VI are provided.
[e] = Hazardous Waste Criteria for TCLP Lead is 5.0 mg/L.
[f] = Hazardous Waste Criteria for TCLP Mercury is 0.2 mg/L.

Exceeds Recreational SRV
Exceeds Tier I SLV
Exceeds Recreational and Industrial SRVs
Exceeds Recreational SRV and Tier I SLV
Exceeds Recreational and Industrial SRVs and Tier I SLV

Table 4
Soil Analytical Results - Liesch - July 2009
Scherer Bros Lumber Property
Minneapolis, Minnesota

Compound/Parameter	CAS No.	Recreational Soil Reference Value (SRV)	Industrial Soil Reference Value (SRV)	Tier I Soil Leaching Value (SLV)	Sample Identifier and Date Collected												
					B-1 (12-14') 7/09	B-2 (6-8') 7/09	B-3 (7-9') 7/09	B-4 (7-9') 7/09	B-5 (4-6') 7/09	B-6 (2-4') 7/09	B-7 (1-3') 7/09	B-8 (3-5') 7/09	B-9 (3-5') 7/09	B-10 (4-6') 7/09	B-10 (9-10') 7/09	B-11 (12-13') 7/09	B-12 (11-13') 7/09
Volatile Organic Compounds (VOCs) reported in mg/kg																	
Chloroform	67-66-3	7	4	0.17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	156-59-2	19	22	0.14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	91-20-3	24	28	7.5	ND	ND	0.432	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	108-88-3	260	305	6.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	156-60-5	28	33	0.27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	79-01-6	82	46	0.14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	95-63-6	20	25	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
All other reported VOCs	NE	Various	Various	Various	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Polynuclear Aromatic Hydrocarbons (PAHs) reported in mg/kg																	
Acenaphthene	83-32-9	1,860	5,260	50	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	208-96-8	NE	NE	NE	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	120-12-7	10,000	45,400	942	NA	NA	2.2	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	56-55-3	[c]	[c]	[c]	NA	NA	3.2	2.3	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	50-32-8	[c]	[c]	[c]	NA	NA	4.2	2.7	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	205-99-2	[c]	[c]	[c]	NA	NA	6	3.9	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	191-24-2	NE	NE	NE	NA	NA	3.7	2.3	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	207-08-9	[c]	[c]	[c]	NA	NA	1.9	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	218-01-9	[c]	[c]	[c]	NA	NA	3.6	2.4	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	53-70-3	[c]	[c]	[c]	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	206-44-0	1,290	6,800	295	NA	NA	6.3	4.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	86-73-7	1,200	4,120	47	NA	NA	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	193-39-5	[c]	[c]	[c]	NA	NA	2.9	1.8	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	91-20-3	24	28	7.5	NA	NA	0.432	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	85-01-8	NE	NE	NE	ND	ND	8.5	3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	129-00-0	1,060	5,800	272	NA	NA	6	4	NA	NA	NA	NA	NA	NA	NA	NA	NA
BaP Equivalent [c]	NE	2	3	10.2	NA	NA	5.36	3.52	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals reported in mg/kg																	
Arsenic, Total	7440-38-2	11	20	15.1	1.4	7.7	1	5.5	6.6	9.5	9.2	3.3	8.9	4.2	10.1	1.9	1.3
Barium, Total	7440-39-3	1,100	18,000	842	25.7	75.8	35.5	132	85.5	74.7	252	39.7	170	49.9	115	11	58.9
Cadmium, Total	7440-43-9	35	200	4.4	0.12	0.32	0.46	0.41	0.33	0.26	0.14	0.55	1.4	0.66	0.077	0.29	0.12
Chromium, Total [d]	7440-47-3	60,000/120[d]	100,000/650 [d]	1,000,000/18 [d]	9.4	10.7	12.3	18.9	20.1	17	11.9	9.9	14.4	9.1	17.6	9.9	10.2
Lead, Total	7439-92-1	300	700	525	22.5	53.8	10,300	158	88.7	53.2	503	13.2	389	3.9	8	1.8	5.8
Mercury, Total	7439-97-6	1.2	1.5	1.6	0.038	ND	0.21	0.54	0.11	0.07	0.082	ND	0.32	ND	0.032	ND	0.052
Selenium, Total	7782-49-2	200	1,300	1.5	1.4	0.91	ND	ND	0.72	1.8	ND	0.9	1.7	1.1	2.3	ND	0.58
Silver, Total	7440-22-4	200	1,300	3.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Other Parameters reported in mg/kg																	
Diesel Range Organics (DRO)	NE	NE	NE	NE	28	186	449	65	396	69.6	49.4	26	319	ND	ND	ND	ND
Gasoline Range Organics (GRO)	NE	NE	NE	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Other Parameters reported in mg/L																	
TCLP Lead [e]	NE	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TCLP Mercury [f]	NE	NE	NE	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NOTES:
mg/kg = Milligrams per kilogram.
mg/L = Milligrams per liter.
NA = Sample not analyzed for this parameter.
ND = Not detected at or above the laboratory reporting limit indicated in parentheses.
NE = Regulatory limit not established for this parameter.
* = High boiling point hydrocarbons are present in the sample.
[c] = Benzo(a)pyrene (BaP) equivalent is a calculated value based on the weighted concentration and toxicity of the following compounds: benzo(a)anthracene, benzo(b)fluranthene, benzo(k)fluoranthene, benzo(a)pyrene, chyrsene, dibenz(a,h)anthracene, and indeno (1,2,3-cd)pyrene.
[d] = Reported result(s) is total chromium, regulatory limits for chromium III and chromium VI are provided.
[e] = Hazardous Waste Criteria for TCLP Lead is 5.0 mg/L.
[f] = Hazardous Waste Criteria for TCLP Mercury is 0.2 mg/L.

Exceeds Recreational SRV
Exceeds Tier I SLV
Exceeds Recreational and Industrial SRVs
Exceeds Recreational SRV and Tier I SLV
Exceeds Recreational and Industrial SRVs and Tier I SLV

APPENDIX A

Standard Operating Procedure 110
Field Notes

Purpose

Complete and accurate field notes are essential to the success of both small and large projects. They allow project managers to reconstruct the exact sequence of events and manage data efficiently and accurately.

Required Equipment

- Field Report form and other appropriate field forms as necessary
- Tape measure
- Graph paper or photocopy of existing map for site diagram (optional)

Procedures

1. Fill out a Field Report form for each day in the field. Include any significant correspondence with the client or contractors and a summary of the work completed. Be sure to get the name and affiliation of all site visitors using correct spelling. Obtain business cards if possible.
2. Use as much detail as possible when documenting data on the standard forms (e.g. Boring or Sampling Probe logs, Monitoring Well Sampling Data form, Survey Level Notes form). Details which are not documented in the field can lead to gaps in the final report.
3. Draw a good site map using accurate measurements or revise a photocopy of an existing site map. A good site map will include:

    - Site boundaries (or features such as street curbs, fence lines etc. that can later be related to site boundaries)
    - Street names or other references that can be related to a site location map
    - Boring and well locations with dimensions to site landmarks
    - Major structures with dimensions
    - North arrow
    - Scale

- Date
- Initials of field person

4. When you get back to the office, organize your notes and data. Then place the Field Report form on top of the rest of your notes and staple them together. If necessary, make a photocopy of forms that require word processing.

5. Put the stapled field notes into a file folder that is clearly labeled as containing field notes for the project.

Standard Operating Procedure 130
Spatial Data Collection and Reporting

Purpose

Spatial data are world-wide coordinates used to accurately identify the location of properties, physical features, and the locations at which samples were collected. Spatial data can be determined by a variety of methods including the interpolation of maps and air photos using paper, electronic, or web-based sources. Spatial data can also be generated in the field with hand-held GPS receivers. As of this writing, the preferred method to collect spatial data is by interpolation of online air photos on a website maintained by the Minnesota Department of Administration, Land Management Information Center. In some situations the spatial data may be collected with a hand-held GPS receiver by Peer field staff during the investigation.

Several Minnesota regulatory programs including the MPCA Petroleum Remediation program, Superfund and Emergency Response Section, Voluntary Investigation and Cleanup program, Site Assessment program and Emergency Response require the collection and reporting of spatial data for specific features for all projects. The data are also required on the VIC application form. The specific features to be identified for each program vary and are provided below:

Petroleum Remediation Program

- Site location (either middle of site, entrance to site, or main gate)
- Tank basin locations (former and current)
- Monitoring wells

Other Listed MPCA Programs

- Site location (either middle of site, entrance to site, or main gate).
- Soil borings (hollow stem auger or push probe)
- Monitoring wells (do not include temporary wells in borings) and Piezometers
- Surface samples
- Test pits and trenches
- Sediment samples
- Soil gas samples
- Air samples

Optional Equipment

- GPS Receiver – Mobile Mapper CE

Field Data Collection Procedure

1. Follow SOP #110 to prepare an accurate field map.
2. If available, use the GPS receiver to collect coordinates of site objects and sample locations. Be sure to verify the location of objects in the field.

Office Data Management Procedure

The person who conducted the field sampling should identify the points in the office (Step 1 below) since they will be most familiar with the site and site landmarks as they appear on an aerial photo.

1. Open the North Star Mapper website at:

   http://www.lmic.state.mn.us/chouse/northstarmapper.html

   Click on the tab that says "Start Mapping". A new window will open.

   a. Navigate to the appropriate city or county.

   b. Setup the screen

      i. Turn off (remove check)

         1. Boundaries
         2. Parks & Forests
         3. Land Characteristics

      ii. Turn on (check)

         1. Twin Cities Air Photos 2004 (best) or
         2. Statewide Air Photos 2003 (OK)

      iii. Click on Refresh Map

c. Use the zoom in command (magnifier with a "+") to get to the investigation area.

d. Set the scale to 1:500 or a larger scale if the site is large.

e. Use the pan command (hand) to center the investigation area in the window.

f. Carefully position the tip of the cursor over the estimated location of an item to identify (as listed on page 1). Then copy the latitude and longitude on the Spatial Data Collection Sheet. Copy the number as provided to six decimal places.

2. Complete the appropriate MPCA form or spreadsheet.

   a. Petroleum Remediation – Spatial Data Reporting Form (1-03a)

   b. Other programs – Spatial Reporting Spreadsheet – Form c-s4-04 (located in Peer/Forms/MPCA PRP and VIC folder).

      i. Fill out the ID number and Site Name along with the latitude and longitude from step 1.f.

      ii. For each of the sample locations select the appropriate station type, name of the station, latitude, longitude and date the data was collected. If the station is a well, complete the elevation information and unique well number fields.

3. Include a hard copy of the form or spreadsheet with your report.

4. For non-petroleum programs, submit a copy of the spreadsheet file to the MPCA project manager.

Standard Operating Procedure 211
Field Log Preparation

Purpose

Logs of individual borings completed in the field are the basis for printed logs and written field reports. Collecting the right information in the field is key to accurate and informative logs and reports.

Required Equipment

- Blank log form (boring, sampling probe, trench, etc.) or field notebook.

Procedure

1. A day or two before the field work, review the written scope of work with the project manager. The scope should define the boring numbering scheme, boring locations, depths, sample intervals, and types of samples to be collected. Make sure that all required field equipment is prepared and in good working condition.

2. In the field, identify the boring locations with the drilling subcontractor. Discuss the sampling procedures to ensure they meet the scope of work. In particular, discuss sample intervals and water sampling, if appropriate.

3. The drilling subcontractor will collect soil samples from the sample intervals and provide the samples to the field technician. The field technician is responsible for making field observations of the soil, screening soil samples for volatile organic vapors, and collecting soil or water samples for laboratory analysis.

4. If the material at the surface is less than six inches thick, indicate the material at the surface of the borehole (e.g., 4" concrete, asphalt, grass, gravel, etc.) in the Remarks section of the log form.

5. On the log form, indicate (in feet) the sample interval and recovery for each split spoon or probe sleeve provided by the subcontractor.

6. Collect a sample of the soil from each two-foot interval (or less) for organic vapor screening in the field (Peer SOP 212). Record the results of the vapor screening on the log form.

7. As soil samples are collected in the field, a visual identification and description will be completed as described below. Portions of the *Standard Practice for Description and Identification of Soils* (ASTM D2488-93) were used to prepare this SOP and soil descriptions should follow that document as applicable.

When visually describing soils in the field, the following information should be provided at a minimum. Field technicians capable of more-detailed and correct descriptions are encouraged to provide additional detail.

Prepare the soil description **in the order shown**.

a. A description of the main soil group within the sample (e.g., silty sand, clay, silt, etc.).

b. Optional. If coarse-grained soil (i.e., sand or gravel), include a brief description of the predominant particle grain size(s) (e.g., fine, medium, coarse).

c. Optional. If fine grained soil (i.e., clay or silt), describe the consistency based on finger pressure (e.g., very soft = thumb will penetrate soil more than 1 inch, soft = thumb will penetrate soil about 1 inch, firm = thumb will penetrate soil about ¼ inch, hard = thumb will not indent soil, but thumbnail will easily make a mark, very hard = thumbnail will not indent soil).

d. If another soil group is present in the sample describe its concentration with an adjective based on the percentages present within the sample (i.e., trace = < 5%, few = 5 to 10%, little = 10 to 25%, some = 30 to 45 %).

e. Describe the overall moisture of the soil sample using the terms dry, moist, or wet (do not use the term "saturated").

f. Describe the color of the main soil group (e.g., brown, gray, etc.).

g. Be sure to note the presence of any unusual occurrences (e.g., bricks, glass, debris, petroleum odor). Include the specific depth interval of the occurrence of unique material in the description or in the Remarks.

h. If the soil material is fill or probable fill, note in parenthesis [e.g., (fill), (probable fill)].

The following are examples of correct visual soil classifications:

- *Silty sand, fine to medium grained, with few gravel, moist, dark brown.*
- *Sandy clay with trace gravel, soft, wet, gray, petroleum odor (fill).*

8. If and when ground water is encountered, note the depth to water in the log.

9. As samples are collected for laboratory analysis (see Peer SOP 215, SOP 321, or SOP 322) note the sample name, analyses requested and time collected in the Remarks section. For example:

- *SP-1(8-10') DRO, GRO, VOCs @ 10:15*
- *SP-1 DRO, VOCs @ 10:45*

10. At the termination of the borehole record the final boring depth and the material used to backfill the borehole. Note if the borehole met refusal.

Standard Operating Procedure 212
Organic Vapor Screening

Purpose

Use this procedure to obtain a fast, general measurement of volatile organic compounds in soil.

Safety Equipment

- Wear nitrile gloves to reduce the incidence of skin contact with potentially contaminated soil and to reduce the risk of cross-contamination.

- Refer to the site-specific Health and Safety Plan for other safety concerns and applicable personal protective equipment.

Required Equipment

- Photoionization detector (PID) equipped with a 10.6 eV lamp (use an 11.8 eV lamp only if required by a site-specific sampling and analysis plan)

- PID calibration equipment

- One quart sealable bags, or soil jars, lids and aluminum foil

- Appropriate log forms or note pad for field notes

- Sharpie or permanent marker

Procedure

1. Select a PID on the afternoon before the field work is scheduled and charge the battery overnight by plugging in the adapter. As the PIDs have no battery gauge, failure to recharge the battery may leave you with a discharged battery and an unusable PID.

2. Calibrate the PID upon arrival at the site or prior to leaving the office. Record all pertinent information on the calibration record located in the case of each PID and record the calibration on the Field Report form.

3. With a gloved hand, fill a dedicated sealable bag or soil jar approximately half full with soil to be screened. Refer to the site-specific sampling and analysis plan or work plan for appropriate sample container. Manually break up the soil clumps within the bag. Seal the bag, or cover the opening of the soil jar with aluminum foil and screw on a lid. Use a marker to write the sample identifier and depth on the bag or jar lid.

4. Shake the sealed bag or soil jar for approximately 15 seconds, then allow the soil to volatilize for at least 10 minutes in an atmosphere of at least 70°F. On cold days it may be necessary place the bag or soil jar inside a heated room or vehicle.

5. After headspace development, shake the sample for another 15 seconds.

6. Complete organic vapor screening within approximately 20 minutes of sample collection. If using soil jars, remove the lid. Pierce the aluminum foil or plastic bag with the probe of the PID. Record the highest meter response within a time period of two to five seconds.

7. Discard the soil samples on-site and dispose of used bags, soil jars, foil, and lids as trash.

Standard Operating Procedure 219
Calibration and Verification of a MiniRAE Lite PID

Purpose

Use this procedure to calibrate and verify that the response of the PID to a known concentration of an organic gas (isobutylene) is correct.

Safety Equipment

- Refer to the site-specific Health and Safety Plan for other safety concerns and applicable personal protective equipment.

Required Equipment

- Rae Systems model MiniRae Lite photoionization detector (PID) equipped with a 10.6 eV lamp
- 100 ppm isobutylene gas cylinder, associated flow regulator, and poly tubing assembly to connect the gas cylinder to the PID
- Photoionization Detector Calibration Record

Procedure

Calibration and verification of the PID is best completed at the job site, however calibration in the office on the day of the work is acceptable.

1. Screw on the probe tip assembly.

2. Push the MODE key (top, middle button) to turn the instrument on. The instrument performs self-tests. When tests are complete, display will read "Ready…Start Sampling?"

3. To start calibration, hold down the MODE key and the N/- key simultaneously for approximately 5 seconds until you see the "Password" screen.

4. No password is needed to calibrate the instrument. To start the calibration press the MODE key. "Calibration" screen is visible with the "Zero Calib" highlighted.

5. Press the Y\+ key to select the "Zero Calib"

6. Be sure the PID is in "zero" / fresh air. Press the Y\+ key to start the zero gas calibration. Zeroing calibration starts a 30-second countdown.

7. When zeroing is completed the screen says "Zeroing is done! Reading = 0.0 ppm". After 5 seconds the screen will return to the Calibration screen and "Span Calib" will be highlighted.

8. Press the Y\+ key to select the "Span Calib".

9. The screen will say "C. Gas = Isobutene. Span = 100 ppm. Please apply gas 1". Attach the calibration gas to the probe with the poly tubing and turn on the gas by pressing in and turning the valve. The calibration process starts immediately and starts a 30 second countdown.

10. When the instrument has completed its automatic calibration the screen displays "Span Gas 1 Complete" and the reading in ppm is displayed. The reading should be close to 100 ppm. After 5 seconds the display returns to the Calibration screen.

11. Close the calibration gas valve and disconnect the tubing to the gas source.

12. Push MODE key to exit out of the calibration and return to the "Ready…Start Sampling?" screen.

13. Press the Y\+ key to start sampling.

14. Calibration Verification. With the gas source attached to the PID with the poly tubing, open the valve on the calibration gas and check to make sure the instrument reading equals the calibration gas concentration (100 ppm). If the zero air or calibration gas reading varies more the 2 ppm from the expected reading, repeat the calibration starting at step 3.

15. Record the date and time of the calibration or verification on the Calibration Record sheet along with the test status.

16. If the calibration does not complete normally, or if the instrument will not produce the expected reading during the calibration verification, note the failure and attempted remedy on the Calibration Record. After attempting a remedy, repeat the calibration from Step #3. If the calibration does not produce the expected result contact the office to obtain instructions for other potential remedies or to obtain a replacement photoionization detector. Do not use a PID that does not calibrate properly.

Standard Operating Procedure 223
Soil Sampling – Sampling Probe

Purpose

Use a sampling probe to collect soil samples for field screening and laboratory analysis.

Safety Equipment

- Steel-toed boots
- Ear plugs (recommended)
- Wear a dedicated pair of nitrile gloves for each sample to reduce the risk of potential cross-contamination between samples and to reduce the incidence of skin contact with the soil.

Required Equipment

- Measuring tape
- Sampling Probe Log forms

Procedure

1. Ensure all field equipment is clean before starting.
2. Determine the appropriate sample location and identification prior to sampling. Use a tape measure to determine the distance (within 1 foot) from site landmarks. Identify the sampling probe location with the letters "SP-" (or other specified identifier) followed by a number unique to that site. Begin with number 1 and sequentially assign numbers for all sampling probes advanced at the site.
3. Advance the probe to the desired sampling depth.
4. A sampling probe is driven into the soil by a hydraulic hammer and ram. The length and inside diameter of the sampler used is determined by the sampling depths or intervals desired. The standard sampler has a length of either two feet (1 inch diameter) or four feet (2 inch diameter).
5. The probe operator will bring the sampler to the surface and remove the inner plastic tube. Record the length (in feet) of sample recovery (length of soil column) in the tube.
6. Cut the tube open lengthwise for sample removal. Use a gloved hand to transfer the soil from the tube directly into a sample container as described in SOP 215 –

Collecting Soil Samples for Laboratory Analysis. If there is a soil change within the tube, a sample should be taken of each stratum and note its location in your notes.

7. Record the sample identifier, depth, and time of sample collection on the sample container. Examples of properly labeled samples are: SP-1 (6") or SP-2 (8-10'). Record pertinent information about the sample location and write a description of the soil samples recovered in Sampling Probe Log form using SOP 211 – Field Soil Classification.

8. Be sure the probe operator decontaminates the sampler between samples to minimize cross contamination using a brush in a detergent and water wash, followed by a clean water rinse. A new plastic tube is used for each sample.

9. Discard gloves and use new gloves for the next sample interval.

Standard Operating Procedure 227
Soil Stockpile Sampling

Purpose

The purpose of a stockpile sample is to characterize the content of a potentially contaminated soil stockpile.

Safety Equipment

- Wear nitrile gloves to reduce the incidence of skin contact with contaminated soil and to reduce the risk of cross contamination.

- Consult the site-specific Health and Safety Plan for appropriate personal protective equipment.

Required Equipment

- Soil cup(s)

- One-gallon sealable bag or stainless steel bowl and aluminum foil

- Note pad for field notes

- Wood stake or wire flag and permanent marker

- Laboratory sample containers and clean cooler with ice

Procedure

1. Determine the appropriate sample identification prior to sampling. Label a wood stake or wire flag with the sample number and leave it in the pile; this will reduce potential confusion when it comes time to move the stockpile.

2. Determine the appropriate number of composite samples needed to adequately define the stockpile and the number of equal volume samples (i.e., aliquots) needed to make up each composite sample. This information as well as

information regarding required analysis should be written in the proposal or site-specific work plan.

3. Try to select sample locations in a random fashion to collect an unbiased, representative sample.

4. Scrape off the exposed surface or dig in a few inches to get a fresh surface to sample.

5. Use a soil cup to measure an equal volume of soil for each aliquot location. If volatile organic analyses are required be sure to get soil that has not been exposed to the air. Mark each sample location on a map and/or mark each location with a flag. If "surprising" analytical results are discovered this will aid in potential segregation of more contaminated parts of the pile.

6. If only inorganic analyses are to be completed, place all aliquots into a gallon-sized sealable bag. If semi-volatile or DRO analyses are required, place the aliquots in a clean stainless steel bowl lined with aluminum foil. After all aliquots have been placed into the bag or bowl, mix the soil. Proper and complete mixing is essential when taking a composite sample; it will ensure that all aliquots are represented equally in the final analysis.

7. Fill appropriately labeled laboratory sample containers with the composited soil using a gloved hand as described in SOP 215 – Collecting Soil Samples for Laboratory Analysis.

Standard Operating Procedure 570
Debris Stockpile Sampling

Purpose

To obtain an accurate description and a representative sample of a debris pile for disposal characterization.

Safety Equipment

- Nitrile gloves to reduce the incidence of skin contact and to reduce the risk of potential cross contamination
- Safety glasses
- Other personal protective equipment may be necessary depending on site specific conditions

Required Equipment

- Laboratory sample containers and clean cooler
- Hammer or maul
- Electric drill with core bit, extension cord and generator (if necessary)
- Field notes

Procedure

1. Prior to sampling the stockpile, determine the necessary number of samples to adequately characterize the pile. Refer to the site-specific work plan for samples-to-volume requirements. Also, determine the sample identifier.

2. Examine the debris stockpile from all sides. Estimate the volume of the pile. List the different kinds of debris the pile is comprised of (i.e., metal, wood, plastic, glass, concrete, rocks, soil, etc.), and relative percentage of each by weight in the field notes.

3. Based on the size of the pile and the debris percentage estimates, choose a representative portion of each debris type for sample collection. Try to choose the debris in a random fashion to achieve non-biased stockpile characterization.

4. If metal objects are present in the pile, it may be appropriate to sample them separately in a manner consistent with SOP 510 - Surface Wipe Sampling.

5. Using the required tools, collect samples which represent the entire relative percentage of the individual materials by weight based on your debris percentage observations. Concrete should be chipped with a hammer. Wood and plastic should be drilled or cut. Soil and small rocks should be scooped.

6. Place the sample into a dedicated sample container. Carefully shake or tumble the container to mix the sample.

7. Decontaminate the sampling tools by washing them with an Alconox/water solution followed by a clean water rinse between samples.

Standard Operating Procedure 610
Sample Preservation

Purpose

Sample preservation techniques are intended to prevent substantial alteration of the chemical species present in the sample at the moment it was collected.

Required Equipment

- Clean cooler with temperature blank bottle
- Ice or frozen cold packs
- Sample containers with media

Procedure

1. Immediately after media collection, all sample containers will be placed in a clean cooler under ice, to thermally preserve the samples. The cooler must also contain a temperature blank bottle, also kept under the ice.

2. The sample containers will be kept in an environment that is between 0° and 4° Celsius until the laboratory receives the samples. The sample custodian must ensure that some ice remains in the cooler and that excess water from melted ice is drained.

3. In addition, chemical preservatives may be added to individual samples depending on the analytical methods required. In general, the laboratory will supply pre-preserved sample containers for the project and only laboratory-grade preservatives will be used.

Standard Operating Procedure 620
Chain of Custody Procedures

Purpose

The purpose of following chain of custody procedures is to maintain the quality of all samples during collection, transportation, and storage prior to analysis. Chain of custody documentation serves three main purposes:

1. Communication of analytical instructions from Peer to the analytical laboratory.
2. Permanent record of samples provided to the laboratory.
3. Documentation that samples were handled only by authorized personnel and were not available for tampering prior to analysis.

Procedure

Field personnel will complete sample labels and chain of custody forms to be used for tracking samples.

Sample Container Labels

1. Each sample will be assigned a unique identification number that will be affixed to a label on the sample container.
2. Additional information such as sampling location, date and time of collection, and person who collected the sample will also be included on the sample labels.
3. Labeled sample containers, a temperature blank bottle, and ice will be included in each cooler to be shipped to the laboratory.

Chain of Custody Form(s)

If multiple coolers are required to contain all samples from one sampling location, a separate chain of custody form will be prepared for each cooler. At a minimum, the chain of custody form will include the following information:

- Client or project name, or unique identifier, if confidential
- Sample collector's name and signature
- Peer's mailing address and phone number
- Name of project manager or person who will receive data
- Analytical laboratory's name and city

- Description of each sample including
  - Unique identifier and matrix (solid, aqueous, etc.)
  - Date and time of collection
  - Type of analysis required
- Temperature blank listed as a sample
- Dated and timed signatures of persons involved in chain of possession
- Date and method of shipment

Completion of Field Personnel Responsibility

Record all pertinent information about the samples on the field sampling forms or in the field logbook. Upon completion of the chain of custody forms, field personnel will sign the chain of custody forms along with the date and time.

If the field personnel will transfer the custody of the samples to someone other than the laboratory, affix a custody tape to the cooler to prevent the lid from opening. Write the time, date, and initials on the custody tape.

Sample Custody

Each time the custody of a sample or group of samples is transferred, a signature, date, and time will be entered onto the chain of custody form. A sample will be considered to be in custody if it is in any one of the following states:

1. In actual physical possession
2. In view, after being in physical possession
3. In physical possession and locked up so that no one can tamper with it
4. In a secured area such as a locked storage shed or locked vehicle, restricted to authorized personnel

NOTE: While samples are in an individual's custody, they are to ensure that the cooler containing the samples has ice or a frozen cold pack.

Standard Operating Procedure 630
Sample Shipping – Peer or Local Carrier

Purpose

Proper packaging methods and shipment of samples by Peer or a local carrier will:

- Minimize the potential for sample breakage, leakage, or cross contamination.
- Provide a clear record of sample custody from collection to analysis.

Safety Equipment

Wear clean nitrile gloves when handling coolers or sample containers to reduce the incidence of skin contact with contaminants.

Required Equipment

- Coolers or similar shipping containers
- Ice or cold packs
- Temperature blank bottle
- Sample containers with media
- Sealable plastic bags
- Protective wrapping and packaging materials
- Paper towels
- Chain of custody forms

Procedure

1. Verify that each sample container has been labeled with unique sample identification. The sample identification should also correspond to the chain of custody record that will accompany the sample to the laboratory (see SOP 620 Chain of Custody Procedures).

2. Ensure that a temperature blank bottle is in each cooler and included on the chain of custody form.

3. Any dirt on the outside of sample containers should be wiped clean with a paper towel.

4. Optionally, place sample containers inside of sealable plastic bags to reduce the potential for cross contamination or breakage during sample transport. If necessary, protective material should be placed between sample containers to prevent breakage during transport.

5. Reusable cold packs or ice placed in sealable plastic bags should be distributed over the top of the samples. Frozen cold packs or ice must remain in the cooler until the samples reach the laboratory.

6. Place the chain of custody record on top of or inside the cooler.

7. The filled cooler and completed chain of custody form must be delivered to the laboratory before the close of the next business day after sample collection (never longer than 72 hours). One of the following methods will be used:

    a. The sampling technician will personally deliver the samples to the laboratory.

    b. The sampling technician will bring the samples to the Peer office for later pickup by laboratory representative or bonded courier. The technician may either contact the laboratory directly to arrange pickup or transfer custody of the samples to the Peer receptionist. If custody is transferred to the receptionist, the receptionist will contact the laboratory and maintain responsibility for the sample custody, sample condition, and timely pickup.

APPENDIX B

BORING LOG

Boring No.: SP-1

Project: Former Scherer Bros. Property

Contractor/Crew: Bergerson	Date Started: 9/8/10	Date Completed: 9/8/10	
Drilling Method: Sampling Probe	Elevation (ft): 0	Total Depth (ft): 8	Depth to Water (ft):

Depth (ft)	Sample Interval	PID (ppm)	Description	Profile	Remarks, Lab Samples, etc.
0	--	--	Asphalt		
2	0.5-3'	<1	Silty sand, fine to medium, trace gravel, some ash/slag debris, some concrete debris, moist, dark brown		
4	3-4'	4	Silty sand with little clay, fine to medium, some ash/slag, moist, black		SP-1 (3-4') VOC, PAH, Metals
6	4-8'	<1	Sand, fine, moist, tan		
8			End of Boring at 8'		
10					
12					
14					
16					

BORING LOG

Peer Engineering

Boring No.: SP-2

Project: Former Scherer Bros. Property

Contractor/Crew: Bergerson	Date Started: 9/8/10	Date Completed: 9/8/10	
Drilling Method: Sampling Probe	Elevation (ft): 0	Total Depth (ft): 8	Depth to Water (ft):

Depth (ft)	Sample Interval	PID (ppm)	Description	Profile	Remarks, Lab Samples, etc.
0	--	--	Asphalt		
2	0.5-5'	<1	Silty sand, fine to medium, some ash/slag/brick/concrete debris, moist, black/dark brown		SP-2 (0.5-5') PAH, Metals
4					
6	5-8'	<1	Sand, fine to medium, moist, tan		
			Sand, fine to medium, wet, brown		
8			End of Boring at 8'		
10					
12					
14					
16					

Peer Project Number: 20074 | Peer Personnel: BLR |

Peer Engineering

BORING LOG

Boring No.: SP-3

Project: Former Scherer Bros. Property

Contractor/Crew: Bergerson	Date Started: 9/8/10	Date Completed: 9/8/10	
Drilling Method: Sampling Probe	Elevation (ft): 0	Total Depth (ft): 8	Depth to Water (ft):

Depth (ft)	Sample Interval	PID (ppm)	Description	Profile	Remarks, Lab Samples, etc.
0	--	--	Asphalt		Slight odor 0-2'
	0.5-2'	19	Sand, fine to medium, trace gravel, moist, dark brown		SP-3 (0.5-2') VOC, Metals, PAH
2	2-4'	<1	Silty clayey sand, fine, little peat, moist, black		
4	4-6'	<1	Sand, little clay, fine, moist, green/gray		
6	6-8'	<1	Sand, fine to coarse, trace gravel, wet, gray/brown		
8			End of Boring at 8'		
10					
12					
14					
16					

BORING LOG

Peer Engineering

Boring No.: SP-4

Project: Former Scherer Bros. Property

Contractor/Crew: Bergerson	Date Started: 9/8/10	Date Completed: 9/8/10	
Drilling Method: Sampling Probe	Elevation (ft): 0	Total Depth (ft): 8	Depth to Water (ft):

Depth (ft)	Sample Interval	PID (ppm)	Description	Profile	Remarks, Lab Samples, etc.
0	--	--	Asphalt		
	0.5-2'	2	Sand, medium, trace gravel, some slag/wood/brick debris, moist, black		SP-4 (0.5-2') PAH, Metals
2	2-4'	<1	Silty clayey sand, fine, trace wood debris, moist, black		
4			Sand, fine, moist, green/gray		
6	4-8'	<1	Sand, medium to coarse, some gravel, trace cobble, wet, brown		
8			End of Boring at 8'		
10					
12					
14					
16					

BORING LOG

Peer Engineering

Boring No.: SP-5

Project: Former Scherer Bros. Property

Contractor/Crew: Bergerson	Date Started: 9/8/10	Date Completed: 9/8/10	
Drilling Method: Sampling Probe	Elevation (ft): 0	Total Depth (ft): 8	Depth to Water (ft):

Depth (ft)	Sample Interval	PID (ppm)	Description	Profile	Remarks, Lab Samples, etc.
0	--	--	Asphalt		
	--		Sand, fine to medium, moist, brown		
2	0.5-4'	5	Silty sand, fine to medium, some brick/wood/concrete debris, moist, dark brown/black		Slight odor SP-5 (0.5-4') VOC, PAH, Metals
4					
6	4-8'	<1	Sand, medium, moist, black		
8			End of Boring at 8'		
10					
12					
14					
16					

BORING LOG

Peer Engineering

Boring No.: SP-6

Project: Former Scherer Bros. Property

Contractor/Crew: Bergerson	Date Started: 9/8/10	Date Completed: 9/8/10	
Drilling Method: Sampling Probe	Elevation (ft): 0	Total Depth (ft): 8	Depth to Water (ft):

Depth (ft)	Sample Interval	PID (ppm)	Description	Profile	Remarks, Lab Samples, etc.
0	--	--	Asphalt		
			Sand, fine to medium, moist, brown		
2	0.5-4'	<1	Silty sand, fine to medium, some brick and concrete debris, moist, dark brown/black		SP-6 (0.5-4') PAH, Metals
4					
	4-7'	<1	Clayey sand, fine, moist, black		SP-6 (4-7') PAH, Metals
6					
	--	--	Sand, fine, moist, light gray		Brick debris 6-7'
8			End of Boring at 8'		
10					
12					
14					
16					

Peer Engineering

BORING LOG

Boring No.: SP-7

Project: Former Scherer Bros. Property

Contractor/Crew: Bergerson	Date Started: 9/8/10	Date Completed: 9/8/10	
Drilling Method: Sampling Probe	Elevation (ft): 0	Total Depth (ft): 7	Depth to Water (ft):

Depth (ft)	Sample Interval	PID (ppm)	Description	Profile	Remarks, Lab Samples, etc.
0	--	--	Asphalt		
	0.5-2'	<1	Sand, fine, moist, trace cobble, trace brick debris, black		SP-7 (0.5-2') PAH, Metals
2	2-4'	<1			
4			Sand, fine to medium, trace brick debris, moist, brown		
	4-7'	--			
6					Sandstone at bottom of sample
			End of Boring at 7'		
8					
10					
12					
14					
16					

BORING LOG

Peer Engineering

Boring No.: SP-8

Project: Former Scherer Bros. Property

Contractor/Crew: Bergerson	Date Started: 9/8/10	Date Completed: 9/8/10	
Drilling Method: Sampling Probe	Elevation (ft): 0	Total Depth (ft): 8	Depth to Water (ft):

Depth (ft)	Sample Interval	PID (ppm)	Description	Profile	Remarks, Lab Samples, etc.
0	--		Asphalt		
2	0.5-3.5'	<1	Sand, fine, trace gravel, trace sandstone, moist, brown		Concrete layer/slag layer debris @ 3.5'
4	3.5-5.5'	<1	Sand, fine, trace gravel, moist, brown		SP-8 (3.5-5.5') PAH, Metals
6	5.5-6'	<1	Sand with little clay, fine, wood and slag debris, black		
	6-8'	<1	Clayey sand, very fine, moist, green/gray		
8			End of Boring at 8'		
10					
12					
14					
16					

BORING LOG

Boring No.: SP-9

Project: Former Scherer Bros. Property

Contractor/Crew: Bergerson	Date Started: 9/8/10	Date Completed: 9/8/10	
Drilling Method: Sampling Probe	Elevation (ft): 0	Total Depth (ft): 12	Depth to Water (ft):

Depth (ft)	Sample Interval	PID (ppm)	Description	Profile	Remarks, Lab Samples, etc.
0	--		Asphalt		
2	0.5-4'	<1	Sand, fine to medium, trace gravel and cobbles, trace slag debris, layer of concrete debris, dark brown		SP-9 (0.5-4') PAH, Metals
4					
6	4-8'	<1	Sand, fine to medium, mostly sandstone and some concrete, moist, dark brown		
8					
10	8-11'	<1	Sand, fine to medium, mostly sandstone and cobbles, moist, brown		
12	11-12'	<1	Sand, fine to medium, mostly cobbles, wet, red		
			End of Boring at 12'		
14					
16					

Peer Engineering

BORING LOG

Boring No.: SP-10

Project: Former Scherer Bros. Property

Contractor/Crew: Bergerson	Date Started: 9/8/10	Date Completed: 9/8/10	
Drilling Method: Sampling Probe	Elevation (ft): 0	Total Depth (ft): 12	Depth to Water (ft):

Depth (ft)	Sample Interval	PID (ppm)	Description	Profile	Remarks, Lab Samples, etc.
0	--		Asphalt		
	0.5-2.5'	<1	Sand, fine to medium, trace gravel, moist, dark brown		
2					
	--	--	Sandstone and red cobbles		
	3-3.5'	<1	Silty sand, fine, trace slag debris, moist, black		
	--	--	Concrete debris		
4					
	4-8'	<1	Silty sand, little clay, fine to medium, trace gravel, trace brick/slag debris, dark brown		SP-10 (4-8') Metals
6					
8					
	8-12'	<1	Silty clayey sand, very fine, some cobbles, wet, black		
10					
12			End of Boring at 12'		
14					
16					

BORING LOG

Peer Engineering

Boring No.: SP-11

Project: Former Scherer Bros. Property

Contractor/Crew: Bergerson	Date Started: 9/8/10	Date Completed: 9/8/10	
Drilling Method: Sampling Probe	Elevation (ft): 0	Total Depth (ft): 12	Depth to Water (ft):

Depth (ft)	Sample Interval	PID (ppm)	Description	Profile	Remarks, Lab Samples, etc.
0	--		Asphalt		
2	0.5-4'	<1			SP-11 (0.5-4') PAH, Metals
4			Sand, fine to medium, some cobbles and gravel, trace brick debris, some concrete debris, moist, black		Layer of debris 4-5'
6	4-8'	<1			SP-11 (4-8') Metals
8					
10	8-12'	<1	Silty sand, very fine to fine, trace cobble, wet, black		
12			End of Boring at 12'		
14					
16					

Peer Engineering

BORING LOG

Boring No.: SP-12

Project: Former Scherer Bros. Property

Contractor/Crew: Bergerson	Date Started: 9/8/10	Date Completed: 9/8/10	
Drilling Method: Sampling Probe	Elevation (ft): 0	Total Depth (ft): 8	Depth to Water (ft):

Depth (ft)	Sample Interval	PID (ppm)	Description	Profile	Remarks, Lab Samples, etc.
0	--		Asphalt		
2	0.5-4'	<1	Sand, fine, trace gravel and cobble, moist, dark brown		SP-12 (0.5-4') PAH, Metals, DRO
4	4-6'	<1	Sand, very fine, moist, black		
6	6-7.5'	<1	Clayey sand, very fine, moist, black		
8	--		Sand, fine to medium, wet, dark gray		
			End of Boring at 8'		
10					
12					
14					
16					

APPENDIX C

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

September 21, 2010

Ms. Becca Reason
Peer Engineering
7612 Golden Triangle Drive
Suite N
Eden Prairie, MN 55344

RE: Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Dear Ms. Reason:
Enclosed are the analytical results for sample(s) received by the laboratory on September 09, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Diane J. Anderson

Diane J. Anderson

diane.anderson@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
Alaska Certification #: UST-078
Alaska Certification #MN00064
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
EPA Region 8 Certification #: Pace
Florida/NELAP Certification #: E87605
Georgia Certification #: 959
Idaho Certification #: MN00064
Illinois Certification #: 200011
Iowa Certification #: 368
Kansas Certification #: E-10167
Louisiana Certification #: 03086
Louisiana Certification #: LA080009
Maine Certification #: 2007029
Maryland Certification #: 322
Michigan DEQ Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT CERT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New Mexico Certification #: Pace
New York Certification #: 11647
North Carolina Certification #: 530
North Dakota Certification #: R-036
North Dakota Certification #: R-036A
Ohio VAP Certification #: CL101
Oklahoma Certification #: D9921
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Tennessee Certification #: 02818
Texas Certification #: T104704192
Washington Certification #: C754
Wisconsin Certification #: 999407970

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10137689001	**SP-1 (3-4')**	Solid	09/08/10 00:00	09/09/10 16:10
10137689002	**SP-2 (0.5-5')**	Solid	09/08/10 00:00	09/09/10 16:10
10137689003	**SP-3 (0.5-2')**	Solid	09/08/10 00:00	09/09/10 16:10
10137689004	**SP-4 (0.5-2')**	Solid	09/08/10 00:00	09/09/10 16:10
10137689005	**SP-5 (0.5-4')**	Solid	09/08/10 00:00	09/09/10 16:10
10137689006	**SP-6 (0.5-4')**	Solid	09/08/10 00:00	09/09/10 16:10
10137689007	**SP-6 (4-7')**	Solid	09/08/10 00:00	09/09/10 16:10
10137689008	**SP-7 (0.5-2')**	Solid	09/08/10 00:00	09/09/10 16:10
10137689009	**SP-8 (3.5-5.5')**	Solid	09/08/10 00:00	09/09/10 16:10
10137689010	**SP-9 (0.5-4')**	Solid	09/08/10 00:00	09/09/10 16:10
10137689011	**SP-10 (4-8')**	Solid	09/08/10 00:00	09/09/10 16:10
10137689012	**SP-11 (0.5-4')**	Solid	09/08/10 00:00	09/09/10 16:10
10137689013	**SP-11 (4-8')**	Solid	09/08/10 00:00	09/09/10 16:10
10137689014	**SP-12 (0.5-4')**	Solid	09/08/10 00:00	09/09/10 16:10

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SAMPLE ANALYTE COUNT

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10137689001	**SP-1 (3-4')**	EPA 6010	IP	7
		EPA 7471	TEM	1
		% Moisture	JDL	1
		EPA 8270 by SIM	JRH	18
		EPA 8260	MJH	71
10137689002	**SP-2 (0.5-5')**	EPA 6010	IP	7
		EPA 7471	TEM	1
		% Moisture	JDL	1
		EPA 8270 by SIM	JRH	18
10137689003	**SP-3 (0.5-2')**	EPA 6010	IP	7
		EPA 7471	TEM	1
		% Moisture	JDL	1
		EPA 8270 by SIM	JRH	18
		EPA 8260	MJH	71
10137689004	**SP-4 (0.5-2')**	EPA 6010	IP	7
		EPA 7471	TEM	1
		% Moisture	JDL	1
		EPA 8270 by SIM	JRH	18
10137689005	**SP-5 (0.5-4')**	EPA 6010	IP	7
		EPA 7471	TEM	1
		% Moisture	JDL	1
		EPA 8270 by SIM	JRH	18
		EPA 8260	MJH	71
10137689006	**SP-6 (0.5-4')**	EPA 6010	IP	7
		EPA 7471	TEM	1
		% Moisture	JDL	1
		EPA 8270 by SIM	JRH	18
10137689007	**SP-6 (4-7')**	EPA 6010	IP	7
		EPA 7471	TEM	1
		% Moisture	JDL	1
		EPA 8270 by SIM	JRH	18
10137689008	**SP-7 (0.5-2')**	EPA 6010	IP	7
		EPA 7471	TEM	1
		% Moisture	JDL	1
		EPA 8270 by SIM	JRH	18
10137689009	**SP-8 (3.5-5.5')**	EPA 6010	IP	7
		EPA 7471	TEM	1

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SAMPLE ANALYTE COUNT

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		% Moisture	JDL	1
		EPA 8270 by SIM	JRH	18
10137689010	**SP-9 (0.5-4')**	EPA 6010	IP	7
		EPA 7471	TEM	1
		% Moisture	JDL	1
		EPA 8270 by SIM	JRH	18
10137689011	**SP-10 (4-8')**	EPA 6010	IP	7
		EPA 7471	TEM	1
		% Moisture	JDL	1
10137689012	**SP-11 (0.5-4')**	EPA 6010	IP	7
		EPA 7471	TEM	1
		% Moisture	JDL	1
		EPA 8270 by SIM	JRH	18
10137689013	**SP-11 (4-8')**	EPA 6010	IP	7
		EPA 7471	TEM	1
		% Moisture	JDL	1
10137689014	**SP-12 (0.5-4')**	WI MOD DRO	KL1	2
		EPA 6010	IP	7
		EPA 7471	TEM	1
		% Moisture	JDL	1
		EPA 8270 by SIM	JRH	18

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ANALYTICAL RESULTS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Sample: SP-1 (3-4') **Lab ID: 10137689001** Collected: 09/08/10 00:00 Received: 09/09/10 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**16.3**	mg/kg	0.58	1	09/15/10 11:26	09/15/10 19:18	7440-38-2	M1
Barium	**201**	mg/kg	0.58	1	09/15/10 11:26	09/15/10 19:18	7440-39-3	M1
Cadmium	**1.8**	mg/kg	0.058	1	09/15/10 11:26	09/15/10 19:18	7440-43-9	
Chromium	**26.2**	mg/kg	0.58	1	09/15/10 11:26	09/15/10 19:18	7440-47-3	
Lead	**677**	mg/kg	0.35	1	09/15/10 11:26	09/15/10 19:18	7439-92-1	P6
Selenium	**1.6**	mg/kg	0.87	1	09/15/10 11:26	09/15/10 19:18	7782-49-2	M1
Silver	ND	mg/kg	0.58	1	09/15/10 11:26	09/15/10 19:18	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.27**	mg/kg	0.024	1	09/15/10 11:59	09/16/10 10:18	7439-97-6	M1
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**19.1**	%	0.10	1		09/15/10 00:00		
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
Acenaphthene	ND	ug/kg	124	10	09/10/10 11:26	09/16/10 21:25	83-32-9	
Acenaphthylene	**394**	ug/kg	124	10	09/10/10 11:26	09/16/10 21:25	208-96-8	
Anthracene	**427**	ug/kg	124	10	09/10/10 11:26	09/16/10 21:25	120-12-7	
Benzo(a)anthracene	**3450**	ug/kg	124	10	09/10/10 11:26	09/16/10 21:25	56-55-3	
Benzo(a)pyrene	**4880**	ug/kg	618	50	09/10/10 11:26	09/17/10 11:35	50-32-8	
Benzo(b)fluoranthene	**5340**	ug/kg	618	50	09/10/10 11:26	09/17/10 11:35	205-99-2	
Benzo(g,h,i)perylene	**7100**	ug/kg	618	50	09/10/10 11:26	09/17/10 11:35	191-24-2	
Benzo(k)fluoranthene	**2100**	ug/kg	618	50	09/10/10 11:26	09/17/10 11:35	207-08-9	
Chrysene	**3290**	ug/kg	124	10	09/10/10 11:26	09/16/10 21:25	218-01-9	
Dibenz(a,h)anthracene	**1440**	ug/kg	124	10	09/10/10 11:26	09/16/10 21:25	53-70-3	
Fluoranthene	**2210**	ug/kg	124	10	09/10/10 11:26	09/16/10 21:25	206-44-0	
Fluorene	ND	ug/kg	124	10	09/10/10 11:26	09/16/10 21:25	86-73-7	
Indeno(1,2,3-cd)pyrene	**4610**	ug/kg	618	50	09/10/10 11:26	09/17/10 11:35	193-39-5	
Naphthalene	ND	ug/kg	124	10	09/10/10 11:26	09/16/10 21:25	91-20-3	
Phenanthrene	**810**	ug/kg	124	10	09/10/10 11:26	09/16/10 21:25	85-01-8	
Pyrene	**2730**	ug/kg	124	10	09/10/10 11:26	09/16/10 21:25	129-00-0	
2-Fluorobiphenyl (S)	45	%	39-125	10	09/10/10 11:26	09/16/10 21:25	321-60-8	D4
Terphenyl-d14 (S)	58	%	30-150	10	09/10/10 11:26	09/16/10 21:25	1718-51-0	
8260 MSV 5030 Med Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B							
Acetone	ND	ug/kg	627	1	09/13/10 08:06	09/14/10 11:28	67-64-1	
Allyl chloride	ND	ug/kg	251	1	09/13/10 08:06	09/14/10 11:28	107-05-1	
Benzene	ND	ug/kg	25.1	1	09/13/10 08:06	09/14/10 11:28	71-43-2	
Bromobenzene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	108-86-1	
Bromochloromethane	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	74-97-5	
Bromodichloromethane	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	75-27-4	
Bromoform	ND	ug/kg	502	1	09/13/10 08:06	09/14/10 11:28	75-25-2	
Bromomethane	ND	ug/kg	627	1	09/13/10 08:06	09/14/10 11:28	74-83-9	L3
2-Butanone (MEK)	ND	ug/kg	627	1	09/13/10 08:06	09/14/10 11:28	78-93-3	
n-Butylbenzene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	104-51-8	

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ANALYTICAL RESULTS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Sample: SP-1 (3-4') **Lab ID: 10137689001** Collected: 09/08/10 00:00 Received: 09/09/10 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Med Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B							
sec-Butylbenzene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	135-98-8	
tert-Butylbenzene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	98-06-6	
Carbon tetrachloride	ND	ug/kg	251	1	09/13/10 08:06	09/14/10 11:28	56-23-5	
Chlorobenzene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	108-90-7	
Chloroethane	ND	ug/kg	627	1	09/13/10 08:06	09/14/10 11:28	75-00-3	L3
Chloroform	**166**	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	67-66-3	
Chloromethane	ND	ug/kg	251	1	09/13/10 08:06	09/14/10 11:28	74-87-3	
2-Chlorotoluene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	95-49-8	
4-Chlorotoluene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	251	1	09/13/10 08:06	09/14/10 11:28	96-12-8	
Dibromochloromethane	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	106-93-4	
Dibromomethane	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	75-71-8	
1,1-Dichloroethane	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	75-34-3	
1,2-Dichloroethane	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	107-06-2	
1,1-Dichloroethene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	75-35-4	
cis-1,2-Dichloroethene	**358**	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	156-59-2	
trans-1,2-Dichloroethene	**71.1**	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	156-60-5	
Dichlorofluoromethane	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	75-43-4	
1,2-Dichloropropane	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	78-87-5	
1,3-Dichloropropane	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	142-28-9	
2,2-Dichloropropane	ND	ug/kg	251	1	09/13/10 08:06	09/14/10 11:28	594-20-7	
1,1-Dichloropropene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/kg	251	1	09/13/10 08:06	09/14/10 11:28	60-29-7	
Ethylbenzene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	251	1	09/13/10 08:06	09/14/10 11:28	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	98-82-8	
p-Isopropyltoluene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	99-87-6	
Methylene Chloride	ND	ug/kg	251	1	09/13/10 08:06	09/14/10 11:28	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	627	1	09/13/10 08:06	09/14/10 11:28	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	1634-04-4	
Naphthalene	ND	ug/kg	251	1	09/13/10 08:06	09/14/10 11:28	91-20-3	
n-Propylbenzene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	103-65-1	
Styrene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	79-34-5	
Tetrachloroethene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	127-18-4	
Tetrahydrofuran	ND	ug/kg	627	1	09/13/10 08:06	09/14/10 11:28	109-99-9	
Toluene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	87-61-6	

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ANALYTICAL RESULTS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Sample: SP-1 (3-4') **Lab ID: 10137689001** Collected: 09/08/10 00:00 Received: 09/09/10 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Med Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B							
1,2,4-Trichlorobenzene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	79-00-5	
Trichloroethene	**13600**	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	79-01-6	
Trichlorofluoromethane	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	62.7	1	09/13/10 08:06	09/14/10 11:28	108-67-8	
Vinyl chloride	ND	ug/kg	25.1	1	09/13/10 08:06	09/14/10 11:28	75-01-4	
Xylene (Total)	ND	ug/kg	188	1	09/13/10 08:06	09/14/10 11:28	1330-20-7	
Dibromofluoromethane (S)	109	%	69-127	1	09/13/10 08:06	09/14/10 11:28	1868-53-7	
1,2-Dichloroethane-d4 (S)	108	%	67-125	1	09/13/10 08:06	09/14/10 11:28	17060-07-0	
Toluene-d8 (S)	107	%	75-144	1	09/13/10 08:06	09/14/10 11:28	2037-26-5	
4-Bromofluorobenzene (S)	114	%	75-132	1	09/13/10 08:06	09/14/10 11:28	460-00-4	

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ANALYTICAL RESULTS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Sample: SP-2 (0.5-5') **Lab ID: 10137689002** Collected: 09/08/10 00:00 Received: 09/09/10 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**31.2**	mg/kg	0.47	1	09/15/10 11:26	09/15/10 19:36	7440-38-2	
Barium	**396**	mg/kg	0.47	1	09/15/10 11:26	09/15/10 19:36	7440-39-3	
Cadmium	**1.3**	mg/kg	0.047	1	09/15/10 11:26	09/15/10 19:36	7440-43-9	
Chromium	**12.3**	mg/kg	0.47	1	09/15/10 11:26	09/15/10 19:36	7440-47-3	
Lead	**153**	mg/kg	0.28	1	09/15/10 11:26	09/15/10 19:36	7439-92-1	
Selenium	**1.5**	mg/kg	0.71	1	09/15/10 11:26	09/15/10 19:36	7782-49-2	
Silver	ND	mg/kg	0.47	1	09/15/10 11:26	09/15/10 19:36	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.20**	mg/kg	0.024	1	09/15/10 11:59	09/16/10 10:22	7439-97-6	
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**15.1**	%	0.10	1		09/15/10 00:00		
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
Acenaphthene	**434**	ug/kg	118	10	09/10/10 11:26	09/17/10 11:53	83-32-9	
Acenaphthylene	**150**	ug/kg	118	10	09/10/10 11:26	09/17/10 11:53	208-96-8	
Anthracene	**974**	ug/kg	118	10	09/10/10 11:26	09/17/10 11:53	120-12-7	
Benzo(a)anthracene	**2590**	ug/kg	118	10	09/10/10 11:26	09/17/10 11:53	56-55-3	
Benzo(a)pyrene	**2270**	ug/kg	118	10	09/10/10 11:26	09/17/10 11:53	50-32-8	
Benzo(b)fluoranthene	**3000**	ug/kg	118	10	09/10/10 11:26	09/17/10 11:53	205-99-2	
Benzo(g,h,i)perylene	**1690**	ug/kg	118	10	09/10/10 11:26	09/17/10 11:53	191-24-2	
Benzo(k)fluoranthene	**1050**	ug/kg	118	10	09/10/10 11:26	09/17/10 11:53	207-08-9	
Chrysene	**2540**	ug/kg	118	10	09/10/10 11:26	09/17/10 11:53	218-01-9	
Dibenz(a,h)anthracene	**162**	ug/kg	118	10	09/10/10 11:26	09/17/10 11:53	53-70-3	
Fluoranthene	**5830**	ug/kg	236	20	09/10/10 11:26	09/17/10 12:10	206-44-0	
Fluorene	**416**	ug/kg	118	10	09/10/10 11:26	09/17/10 11:53	86-73-7	
Indeno(1,2,3-cd)pyrene	**1350**	ug/kg	118	10	09/10/10 11:26	09/17/10 11:53	193-39-5	
Naphthalene	**368**	ug/kg	118	10	09/10/10 11:26	09/17/10 11:53	91-20-3	
Phenanthrene	**4570**	ug/kg	236	20	09/10/10 11:26	09/17/10 12:10	85-01-8	
Pyrene	**5160**	ug/kg	236	20	09/10/10 11:26	09/17/10 12:10	129-00-0	
2-Fluorobiphenyl (S)	50	%	39-125	10	09/10/10 11:26	09/17/10 11:53	321-60-8	D4
Terphenyl-d14 (S)	62	%	30-150	10	09/10/10 11:26	09/17/10 11:53	1718-51-0	

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ANALYTICAL RESULTS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Sample: SP-3 (0.5-2') **Lab ID: 10137689003** Collected: 09/08/10 00:00 Received: 09/09/10 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**7.2**	mg/kg	0.47	1	09/15/10 11:26	09/15/10 19:56	7440-38-2	
Barium	**36.0**	mg/kg	0.47	1	09/15/10 11:26	09/15/10 19:56	7440-39-3	
Cadmium	ND	mg/kg	0.047	1	09/15/10 11:26	09/15/10 19:56	7440-43-9	
Chromium	**8.2**	mg/kg	0.47	1	09/15/10 11:26	09/15/10 19:56	7440-47-3	
Lead	**25.9**	mg/kg	0.28	1	09/15/10 11:26	09/15/10 19:56	7439-92-1	
Selenium	ND	mg/kg	0.70	1	09/15/10 11:26	09/15/10 19:56	7782-49-2	
Silver	ND	mg/kg	0.47	1	09/15/10 11:26	09/15/10 19:56	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.047**	mg/kg	0.019	1	09/15/10 11:59	09/16/10 10:26	7439-97-6	
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**5.0**	%	0.10	1		09/15/10 00:00		
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
Acenaphthene	**108**	ug/kg	105	10	09/10/10 11:26	09/17/10 12:28	83-32-9	
Acenaphthylene	ND	ug/kg	105	10	09/10/10 11:26	09/17/10 12:28	208-96-8	
Anthracene	ND	ug/kg	105	10	09/10/10 11:26	09/17/10 12:28	120-12-7	
Benzo(a)anthracene	**268**	ug/kg	105	10	09/10/10 11:26	09/17/10 12:28	56-55-3	
Benzo(a)pyrene	**378**	ug/kg	105	10	09/10/10 11:26	09/17/10 12:28	50-32-8	
Benzo(b)fluoranthene	**486**	ug/kg	105	10	09/10/10 11:26	09/17/10 12:28	205-99-2	
Benzo(g,h,i)perylene	**537**	ug/kg	105	10	09/10/10 11:26	09/17/10 12:28	191-24-2	
Benzo(k)fluoranthene	**158**	ug/kg	105	10	09/10/10 11:26	09/17/10 12:28	207-08-9	
Chrysene	**436**	ug/kg	105	10	09/10/10 11:26	09/17/10 12:28	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	105	10	09/10/10 11:26	09/17/10 12:28	53-70-3	
Fluoranthene	**450**	ug/kg	105	10	09/10/10 11:26	09/17/10 12:28	206-44-0	
Fluorene	**114**	ug/kg	105	10	09/10/10 11:26	09/17/10 12:28	86-73-7	
Indeno(1,2,3-cd)pyrene	**290**	ug/kg	105	10	09/10/10 11:26	09/17/10 12:28	193-39-5	
Naphthalene	**266**	ug/kg	105	10	09/10/10 11:26	09/17/10 12:28	91-20-3	
Phenanthrene	**268**	ug/kg	105	10	09/10/10 11:26	09/17/10 12:28	85-01-8	
Pyrene	**605**	ug/kg	105	10	09/10/10 11:26	09/17/10 12:28	129-00-0	
2-Fluorobiphenyl (S)	56	%	39-125	10	09/10/10 11:26	09/17/10 12:28	321-60-8	D4
Terphenyl-d14 (S)	55	%	30-150	10	09/10/10 11:26	09/17/10 12:28	1718-51-0	
8260 MSV 5030 Med Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B							
Acetone	ND	ug/kg	511	1	09/13/10 08:06	09/14/10 15:34	67-64-1	
Allyl chloride	ND	ug/kg	204	1	09/13/10 08:06	09/14/10 15:34	107-05-1	
Benzene	ND	ug/kg	20.4	1	09/13/10 08:06	09/14/10 15:34	71-43-2	
Bromobenzene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	108-86-1	
Bromochloromethane	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	74-97-5	
Bromodichloromethane	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	75-27-4	
Bromoform	ND	ug/kg	409	1	09/13/10 08:06	09/14/10 15:34	75-25-2	
Bromomethane	ND	ug/kg	511	1	09/13/10 08:06	09/14/10 15:34	74-83-9	L3
2-Butanone (MEK)	ND	ug/kg	511	1	09/13/10 08:06	09/14/10 15:34	78-93-3	
n-Butylbenzene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	104-51-8	

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ANALYTICAL RESULTS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Sample: SP-3 (0.5-2') **Lab ID: 10137689003** Collected: 09/08/10 00:00 Received: 09/09/10 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Med Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B							
sec-Butylbenzene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	135-98-8	
tert-Butylbenzene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	98-06-6	
Carbon tetrachloride	ND	ug/kg	204	1	09/13/10 08:06	09/14/10 15:34	56-23-5	
Chlorobenzene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	108-90-7	
Chloroethane	ND	ug/kg	511	1	09/13/10 08:06	09/14/10 15:34	75-00-3	L3
Chloroform	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	67-66-3	
Chloromethane	ND	ug/kg	204	1	09/13/10 08:06	09/14/10 15:34	74-87-3	
2-Chlorotoluene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	95-49-8	
4-Chlorotoluene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	204	1	09/13/10 08:06	09/14/10 15:34	96-12-8	
Dibromochloromethane	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	106-93-4	
Dibromomethane	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	75-71-8	
1,1-Dichloroethane	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	75-34-3	
1,2-Dichloroethane	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	107-06-2	
1,1-Dichloroethene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	156-60-5	
Dichlorofluoromethane	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	75-43-4	
1,2-Dichloropropane	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	78-87-5	
1,3-Dichloropropane	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	142-28-9	
2,2-Dichloropropane	ND	ug/kg	204	1	09/13/10 08:06	09/14/10 15:34	594-20-7	
1,1-Dichloropropene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/kg	204	1	09/13/10 08:06	09/14/10 15:34	60-29-7	
Ethylbenzene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	204	1	09/13/10 08:06	09/14/10 15:34	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	98-82-8	
p-Isopropyltoluene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	99-87-6	
Methylene Chloride	ND	ug/kg	204	1	09/13/10 08:06	09/14/10 15:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	511	1	09/13/10 08:06	09/14/10 15:34	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	1634-04-4	
Naphthalene	ND	ug/kg	204	1	09/13/10 08:06	09/14/10 15:34	91-20-3	
n-Propylbenzene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	103-65-1	
Styrene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	79-34-5	
Tetrachloroethene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	127-18-4	
Tetrahydrofuran	ND	ug/kg	511	1	09/13/10 08:06	09/14/10 15:34	109-99-9	
Toluene	**72.5**	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	87-61-6	

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ANALYTICAL RESULTS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Sample: SP-3 (0.5-2') **Lab ID: 10137689003** Collected: 09/08/10 00:00 Received: 09/09/10 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Med Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B							
1,2,4-Trichlorobenzene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	79-00-5	
Trichloroethene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	79-01-6	
Trichlorofluoromethane	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	76-13-1	
1,2,4-Trimethylbenzene	**101**	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	51.1	1	09/13/10 08:06	09/14/10 15:34	108-67-8	
Vinyl chloride	ND	ug/kg	20.4	1	09/13/10 08:06	09/14/10 15:34	75-01-4	
Xylene (Total)	ND	ug/kg	153	1	09/13/10 08:06	09/14/10 15:34	1330-20-7	
Dibromofluoromethane (S)	70	%	69-127	1	09/13/10 08:06	09/14/10 15:34	1868-53-7	
1,2-Dichloroethane-d4 (S)	109	%	67-125	1	09/13/10 08:06	09/14/10 15:34	17060-07-0	
Toluene-d8 (S)	108	%	75-144	1	09/13/10 08:06	09/14/10 15:34	2037-26-5	
4-Bromofluorobenzene (S)	111	%	75-132	1	09/13/10 08:06	09/14/10 15:34	460-00-4	

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ANALYTICAL RESULTS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Sample: SP-4 (0.5-2') **Lab ID: 10137689004** Collected: 09/08/10 00:00 Received: 09/09/10 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**8.8**	mg/kg	0.38	1	09/15/10 11:26	09/15/10 20:03	7440-38-2	
Barium	**69.2**	mg/kg	0.38	1	09/15/10 11:26	09/15/10 20:03	7440-39-3	
Cadmium	ND	mg/kg	0.038	1	09/15/10 11:26	09/15/10 20:03	7440-43-9	
Chromium	**5.5**	mg/kg	0.38	1	09/15/10 11:26	09/15/10 20:03	7440-47-3	
Lead	**29.1**	mg/kg	0.23	1	09/15/10 11:26	09/15/10 20:03	7439-92-1	
Selenium	ND	mg/kg	0.58	1	09/15/10 11:26	09/15/10 20:03	7782-49-2	
Silver	ND	mg/kg	0.38	1	09/15/10 11:26	09/15/10 20:03	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.16**	mg/kg	0.021	1	09/15/10 11:59	09/16/10 10:28	7439-97-6	
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**6.3**	%	0.10	1		09/15/10 00:00		
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
Acenaphthene	**472**	ug/kg	107	10	09/10/10 11:26	09/17/10 12:46	83-32-9	
Acenaphthylene	**129**	ug/kg	107	10	09/10/10 11:26	09/17/10 12:46	208-96-8	
Anthracene	**554**	ug/kg	107	10	09/10/10 11:26	09/17/10 12:46	120-12-7	
Benzo(a)anthracene	**762**	ug/kg	107	10	09/10/10 11:26	09/17/10 12:46	56-55-3	
Benzo(a)pyrene	**1020**	ug/kg	107	10	09/10/10 11:26	09/17/10 12:46	50-32-8	
Benzo(b)fluoranthene	**1260**	ug/kg	107	10	09/10/10 11:26	09/17/10 12:46	205-99-2	
Benzo(g,h,i)perylene	**975**	ug/kg	107	10	09/10/10 11:26	09/17/10 12:46	191-24-2	
Benzo(k)fluoranthene	**342**	ug/kg	107	10	09/10/10 11:26	09/17/10 12:46	207-08-9	
Chrysene	**862**	ug/kg	107	10	09/10/10 11:26	09/17/10 12:46	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	107	10	09/10/10 11:26	09/17/10 12:46	53-70-3	
Fluoranthene	**1550**	ug/kg	107	10	09/10/10 11:26	09/17/10 12:46	206-44-0	
Fluorene	**239**	ug/kg	107	10	09/10/10 11:26	09/17/10 12:46	86-73-7	
Indeno(1,2,3-cd)pyrene	**684**	ug/kg	107	10	09/10/10 11:26	09/17/10 12:46	193-39-5	
Naphthalene	ND	ug/kg	107	10	09/10/10 11:26	09/17/10 12:46	91-20-3	
Phenanthrene	**1570**	ug/kg	107	10	09/10/10 11:26	09/17/10 12:46	85-01-8	
Pyrene	**1820**	ug/kg	107	10	09/10/10 11:26	09/17/10 12:46	129-00-0	
2-Fluorobiphenyl (S)	63	%	39-125	10	09/10/10 11:26	09/17/10 12:46	321-60-8	D4
Terphenyl-d14 (S)	70	%	30-150	10	09/10/10 11:26	09/17/10 12:46	1718-51-0	

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ANALYTICAL RESULTS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Sample: SP-5 (0.5-4') **Lab ID: 10137689005** Collected: 09/08/10 00:00 Received: 09/09/10 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**9.2**	mg/kg	0.37	1	09/15/10 11:26	09/15/10 20:09	7440-38-2	
Barium	**63.9**	mg/kg	0.37	1	09/15/10 11:26	09/15/10 20:09	7440-39-3	
Cadmium	**1.1**	mg/kg	0.037	1	09/15/10 11:26	09/15/10 20:09	7440-43-9	
Chromium	**9.8**	mg/kg	0.37	1	09/15/10 11:26	09/15/10 20:09	7440-47-3	
Lead	**180**	mg/kg	0.22	1	09/15/10 11:26	09/15/10 20:09	7439-92-1	
Selenium	ND	mg/kg	0.56	1	09/15/10 11:26	09/15/10 20:09	7782-49-2	
Silver	ND	mg/kg	0.37	1	09/15/10 11:26	09/15/10 20:09	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.14**	mg/kg	0.020	1	09/15/10 11:59	09/16/10 10:29	7439-97-6	
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**9.5**	%	0.10	1		09/15/10 00:00		
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
Acenaphthene	**186**	ug/kg	110	10	09/10/10 11:26	09/17/10 13:03	83-32-9	
Acenaphthylene	ND	ug/kg	110	10	09/10/10 11:26	09/17/10 13:03	208-96-8	
Anthracene	**114**	ug/kg	110	10	09/10/10 11:26	09/17/10 13:03	120-12-7	
Benzo(a)anthracene	**663**	ug/kg	110	10	09/10/10 11:26	09/17/10 13:03	56-55-3	
Benzo(a)pyrene	**813**	ug/kg	110	10	09/10/10 11:26	09/17/10 13:03	50-32-8	
Benzo(b)fluoranthene	**1110**	ug/kg	110	10	09/10/10 11:26	09/17/10 13:03	205-99-2	
Benzo(g,h,i)perylene	**937**	ug/kg	110	10	09/10/10 11:26	09/17/10 13:03	191-24-2	
Benzo(k)fluoranthene	**411**	ug/kg	110	10	09/10/10 11:26	09/17/10 13:03	207-08-9	
Chrysene	**746**	ug/kg	110	10	09/10/10 11:26	09/17/10 13:03	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	110	10	09/10/10 11:26	09/17/10 13:03	53-70-3	
Fluoranthene	**1200**	ug/kg	110	10	09/10/10 11:26	09/17/10 13:03	206-44-0	
Fluorene	**113**	ug/kg	110	10	09/10/10 11:26	09/17/10 13:03	86-73-7	
Indeno(1,2,3-cd)pyrene	**698**	ug/kg	110	10	09/10/10 11:26	09/17/10 13:03	193-39-5	
Naphthalene	**541**	ug/kg	110	10	09/10/10 11:26	09/17/10 13:03	91-20-3	
Phenanthrene	**527**	ug/kg	110	10	09/10/10 11:26	09/17/10 13:03	85-01-8	
Pyrene	**1130**	ug/kg	110	10	09/10/10 11:26	09/17/10 13:03	129-00-0	
2-Fluorobiphenyl (S)	0	%	39-125	10	09/10/10 11:26	09/17/10 13:03	321-60-8	D4,S4
Terphenyl-d14 (S)	0	%	30-150	10	09/10/10 11:26	09/17/10 13:03	1718-51-0	S4
8260 MSV 5030 Med Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B							
Acetone	ND	ug/kg	537	1	09/13/10 08:06	09/14/10 11:48	67-64-1	
Allyl chloride	ND	ug/kg	215	1	09/13/10 08:06	09/14/10 11:48	107-05-1	
Benzene	ND	ug/kg	21.5	1	09/13/10 08:06	09/14/10 11:48	71-43-2	
Bromobenzene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	108-86-1	
Bromochloromethane	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	74-97-5	
Bromodichloromethane	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	75-27-4	
Bromoform	ND	ug/kg	430	1	09/13/10 08:06	09/14/10 11:48	75-25-2	
Bromomethane	ND	ug/kg	537	1	09/13/10 08:06	09/14/10 11:48	74-83-9	L3
2-Butanone (MEK)	ND	ug/kg	537	1	09/13/10 08:06	09/14/10 11:48	78-93-3	
n-Butylbenzene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	104-51-8	

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ANALYTICAL RESULTS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Sample: SP-5 (0.5-4') **Lab ID: 10137689005** Collected: 09/08/10 00:00 Received: 09/09/10 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Med Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B							
sec-Butylbenzene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	135-98-8	
tert-Butylbenzene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	98-06-6	
Carbon tetrachloride	ND	ug/kg	215	1	09/13/10 08:06	09/14/10 11:48	56-23-5	
Chlorobenzene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	108-90-7	
Chloroethane	ND	ug/kg	537	1	09/13/10 08:06	09/14/10 11:48	75-00-3	L3
Chloroform	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	67-66-3	
Chloromethane	ND	ug/kg	215	1	09/13/10 08:06	09/14/10 11:48	74-87-3	
2-Chlorotoluene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	95-49-8	
4-Chlorotoluene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	215	1	09/13/10 08:06	09/14/10 11:48	96-12-8	
Dibromochloromethane	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	106-93-4	
Dibromomethane	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	75-71-8	
1,1-Dichloroethane	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	75-34-3	
1,2-Dichloroethane	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	107-06-2	
1,1-Dichloroethene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	156-60-5	
Dichlorofluoromethane	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	75-43-4	
1,2-Dichloropropane	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	78-87-5	
1,3-Dichloropropane	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	142-28-9	
2,2-Dichloropropane	ND	ug/kg	215	1	09/13/10 08:06	09/14/10 11:48	594-20-7	
1,1-Dichloropropene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/kg	215	1	09/13/10 08:06	09/14/10 11:48	60-29-7	
Ethylbenzene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	215	1	09/13/10 08:06	09/14/10 11:48	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	98-82-8	
p-Isopropyltoluene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	99-87-6	
Methylene Chloride	ND	ug/kg	215	1	09/13/10 08:06	09/14/10 11:48	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	537	1	09/13/10 08:06	09/14/10 11:48	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	1634-04-4	
Naphthalene	**462**	ug/kg	215	1	09/13/10 08:06	09/14/10 11:48	91-20-3	
n-Propylbenzene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	103-65-1	
Styrene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	79-34-5	
Tetrachloroethene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	127-18-4	
Tetrahydrofuran	ND	ug/kg	537	1	09/13/10 08:06	09/14/10 11:48	109-99-9	
Toluene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	87-61-6	

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ANALYTICAL RESULTS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Sample: SP-5 (0.5-4') **Lab ID: 10137689005** Collected: 09/08/10 00:00 Received: 09/09/10 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Med Level	Analytical Method: EPA 8260 Preparation Method: EPA 5035/5030B							
1,2,4-Trichlorobenzene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	79-00-5	
Trichloroethene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	79-01-6	
Trichlorofluoromethane	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	76-13-1	
1,2,4-Trimethylbenzene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	53.7	1	09/13/10 08:06	09/14/10 11:48	108-67-8	
Vinyl chloride	ND	ug/kg	21.5	1	09/13/10 08:06	09/14/10 11:48	75-01-4	
Xylene (Total)	ND	ug/kg	161	1	09/13/10 08:06	09/14/10 11:48	1330-20-7	
Dibromofluoromethane (S)	117	%	69-127	1	09/13/10 08:06	09/14/10 11:48	1868-53-7	
1,2-Dichloroethane-d4 (S)	119	%	67-125	1	09/13/10 08:06	09/14/10 11:48	17060-07-0	
Toluene-d8 (S)	116	%	75-144	1	09/13/10 08:06	09/14/10 11:48	2037-26-5	
4-Bromofluorobenzene (S)	120	%	75-132	1	09/13/10 08:06	09/14/10 11:48	460-00-4	

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ANALYTICAL RESULTS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Sample: SP-6 (0.5-4') **Lab ID: 10137689006** Collected: 09/08/10 00:00 Received: 09/09/10 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**6.8**	mg/kg	0.46	1	09/15/10 11:26	09/15/10 20:14	7440-38-2	
Barium	**50.1**	mg/kg	0.46	1	09/15/10 11:26	09/15/10 20:14	7440-39-3	
Cadmium	**0.74**	mg/kg	0.046	1	09/15/10 11:26	09/15/10 20:14	7440-43-9	
Chromium	**8.3**	mg/kg	0.46	1	09/15/10 11:26	09/15/10 20:14	7440-47-3	
Lead	**62.6**	mg/kg	0.28	1	09/15/10 11:26	09/15/10 20:14	7439-92-1	
Selenium	ND	mg/kg	0.69	1	09/15/10 11:26	09/15/10 20:14	7782-49-2	
Silver	ND	mg/kg	0.46	1	09/15/10 11:26	09/15/10 20:14	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.40**	mg/kg	0.020	1	09/15/10 11:59	09/16/10 10:30	7439-97-6	
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**7.3**	%	0.10	1		09/15/10 00:00		
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
Acenaphthene	ND	ug/kg	216	20	09/10/10 11:26	09/17/10 13:21	83-32-9	
Acenaphthylene	ND	ug/kg	216	20	09/10/10 11:26	09/17/10 13:21	208-96-8	
Anthracene	**241**	ug/kg	216	20	09/10/10 11:26	09/17/10 13:21	120-12-7	
Benzo(a)anthracene	**1010**	ug/kg	216	20	09/10/10 11:26	09/17/10 13:21	56-55-3	
Benzo(a)pyrene	**1500**	ug/kg	216	20	09/10/10 11:26	09/17/10 13:21	50-32-8	
Benzo(b)fluoranthene	**2180**	ug/kg	216	20	09/10/10 11:26	09/17/10 13:21	205-99-2	
Benzo(g,h,i)perylene	**1940**	ug/kg	216	20	09/10/10 11:26	09/17/10 13:21	191-24-2	
Benzo(k)fluoranthene	**786**	ug/kg	216	20	09/10/10 11:26	09/17/10 13:21	207-08-9	
Chrysene	**1320**	ug/kg	216	20	09/10/10 11:26	09/17/10 13:21	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	216	20	09/10/10 11:26	09/17/10 13:21	53-70-3	
Fluoranthene	**1510**	ug/kg	216	20	09/10/10 11:26	09/17/10 13:21	206-44-0	
Fluorene	ND	ug/kg	216	20	09/10/10 11:26	09/17/10 13:21	86-73-7	
Indeno(1,2,3-cd)pyrene	**1480**	ug/kg	216	20	09/10/10 11:26	09/17/10 13:21	193-39-5	
Naphthalene	ND	ug/kg	216	20	09/10/10 11:26	09/17/10 13:21	91-20-3	
Phenanthrene	**827**	ug/kg	216	20	09/10/10 11:26	09/17/10 13:21	85-01-8	
Pyrene	**1570**	ug/kg	216	20	09/10/10 11:26	09/17/10 13:21	129-00-0	
2-Fluorobiphenyl (S)	0	%	39-125	20	09/10/10 11:26	09/17/10 13:21	321-60-8	D3,S4
Terphenyl-d14 (S)	0	%	30-150	20	09/10/10 11:26	09/17/10 13:21	1718-51-0	S4

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ANALYTICAL RESULTS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Sample: SP-6 (4-7') **Lab ID: 10137689007** Collected: 09/08/10 00:00 Received: 09/09/10 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**9.2**	mg/kg	0.46	1	09/15/10 11:26	09/15/10 20:21	7440-38-2	
Barium	**99.7**	mg/kg	0.46	1	09/15/10 11:26	09/15/10 20:21	7440-39-3	
Cadmium	**0.80**	mg/kg	0.046	1	09/15/10 11:26	09/15/10 20:21	7440-43-9	
Chromium	**12.5**	mg/kg	0.46	1	09/15/10 11:26	09/15/10 20:21	7440-47-3	
Lead	**31.7**	mg/kg	0.28	1	09/15/10 11:26	09/15/10 20:21	7439-92-1	
Selenium	**1.3**	mg/kg	0.69	1	09/15/10 11:26	09/15/10 20:21	7782-49-2	
Silver	ND	mg/kg	0.46	1	09/15/10 11:26	09/15/10 20:21	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.082**	mg/kg	0.023	1	09/15/10 11:59	09/16/10 10:32	7439-97-6	
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**14.1**	%	0.10	1		09/15/10 00:00		
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
Acenaphthene	**256**	ug/kg	116	10	09/10/10 11:26	09/17/10 13:39	83-32-9	
Acenaphthylene	ND	ug/kg	116	10	09/10/10 11:26	09/17/10 13:39	208-96-8	
Anthracene	**525**	ug/kg	116	10	09/10/10 11:26	09/17/10 13:39	120-12-7	
Benzo(a)anthracene	**1060**	ug/kg	116	10	09/10/10 11:26	09/17/10 13:39	56-55-3	
Benzo(a)pyrene	**957**	ug/kg	116	10	09/10/10 11:26	09/17/10 13:39	50-32-8	
Benzo(b)fluoranthene	**1250**	ug/kg	116	10	09/10/10 11:26	09/17/10 13:39	205-99-2	
Benzo(g,h,i)perylene	**783**	ug/kg	116	10	09/10/10 11:26	09/17/10 13:39	191-24-2	
Benzo(k)fluoranthene	**444**	ug/kg	116	10	09/10/10 11:26	09/17/10 13:39	207-08-9	
Chrysene	**1150**	ug/kg	116	10	09/10/10 11:26	09/17/10 13:39	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	116	10	09/10/10 11:26	09/17/10 13:39	53-70-3	
Fluoranthene	**3040**	ug/kg	116	10	09/10/10 11:26	09/17/10 13:39	206-44-0	
Fluorene	**195**	ug/kg	116	10	09/10/10 11:26	09/17/10 13:39	86-73-7	
Indeno(1,2,3-cd)pyrene	**621**	ug/kg	116	10	09/10/10 11:26	09/17/10 13:39	193-39-5	
Naphthalene	ND	ug/kg	116	10	09/10/10 11:26	09/17/10 13:39	91-20-3	
Phenanthrene	**2180**	ug/kg	116	10	09/10/10 11:26	09/17/10 13:39	85-01-8	
Pyrene	**2500**	ug/kg	116	10	09/10/10 11:26	09/17/10 13:39	129-00-0	
2-Fluorobiphenyl (S)	50	%	39-125	10	09/10/10 11:26	09/17/10 13:39	321-60-8	D4
Terphenyl-d14 (S)	56	%	30-150	10	09/10/10 11:26	09/17/10 13:39	1718-51-0	

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ANALYTICAL RESULTS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Sample: SP-7 (0.5-2') **Lab ID: 10137689008** Collected: 09/08/10 00:00 Received: 09/09/10 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**6.7**	mg/kg	0.41	1	09/15/10 11:26	09/15/10 20:27	7440-38-2	
Barium	**104**	mg/kg	0.41	1	09/15/10 11:26	09/15/10 20:27	7440-39-3	
Cadmium	**0.47**	mg/kg	0.041	1	09/15/10 11:26	09/15/10 20:27	7440-43-9	
Chromium	**9.1**	mg/kg	0.41	1	09/15/10 11:26	09/15/10 20:27	7440-47-3	
Lead	**46.5**	mg/kg	0.25	1	09/15/10 11:26	09/15/10 20:27	7439-92-1	
Selenium	ND	mg/kg	0.61	1	09/15/10 11:26	09/15/10 20:27	7782-49-2	
Silver	ND	mg/kg	0.41	1	09/15/10 11:26	09/15/10 20:27	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.12**	mg/kg	0.022	1	09/15/10 11:59	09/16/10 10:33	7439-97-6	
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**8.8**	%	0.10	1		09/15/10 00:00		
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
Acenaphthene	ND	ug/kg	54.8	5	09/10/10 11:26	09/17/10 13:56	83-32-9	
Acenaphthylene	**78.3**	ug/kg	54.8	5	09/10/10 11:26	09/17/10 13:56	208-96-8	
Anthracene	**76.6**	ug/kg	54.8	5	09/10/10 11:26	09/17/10 13:56	120-12-7	
Benzo(a)anthracene	**242**	ug/kg	54.8	5	09/10/10 11:26	09/17/10 13:56	56-55-3	
Benzo(a)pyrene	**304**	ug/kg	54.8	5	09/10/10 11:26	09/17/10 13:56	50-32-8	
Benzo(b)fluoranthene	**413**	ug/kg	54.8	5	09/10/10 11:26	09/17/10 13:56	205-99-2	
Benzo(g,h,i)perylene	**336**	ug/kg	54.8	5	09/10/10 11:26	09/17/10 13:56	191-24-2	
Benzo(k)fluoranthene	**138**	ug/kg	54.8	5	09/10/10 11:26	09/17/10 13:56	207-08-9	
Chrysene	**285**	ug/kg	54.8	5	09/10/10 11:26	09/17/10 13:56	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	54.8	5	09/10/10 11:26	09/17/10 13:56	53-70-3	
Fluoranthene	**376**	ug/kg	54.8	5	09/10/10 11:26	09/17/10 13:56	206-44-0	
Fluorene	ND	ug/kg	54.8	5	09/10/10 11:26	09/17/10 13:56	86-73-7	
Indeno(1,2,3-cd)pyrene	**224**	ug/kg	54.8	5	09/10/10 11:26	09/17/10 13:56	193-39-5	
Naphthalene	**57.9**	ug/kg	54.8	5	09/10/10 11:26	09/17/10 13:56	91-20-3	
Phenanthrene	**202**	ug/kg	54.8	5	09/10/10 11:26	09/17/10 13:56	85-01-8	
Pyrene	**398**	ug/kg	54.8	5	09/10/10 11:26	09/17/10 13:56	129-00-0	
2-Fluorobiphenyl (S)	59	%	39-125	5	09/10/10 11:26	09/17/10 13:56	321-60-8	D3
Terphenyl-d14 (S)	59	%	30-150	5	09/10/10 11:26	09/17/10 13:56	1718-51-0	

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ANALYTICAL RESULTS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Sample: SP-8 (3.5-5.5') **Lab ID: 10137689009** Collected: 09/08/10 00:00 Received: 09/09/10 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**6.6**	mg/kg	0.38	1	09/15/10 11:26	09/15/10 20:33	7440-38-2	
Barium	**43.1**	mg/kg	0.38	1	09/15/10 11:26	09/15/10 20:33	7440-39-3	
Cadmium	ND	mg/kg	0.038	1	09/15/10 11:26	09/15/10 20:33	7440-43-9	
Chromium	**7.7**	mg/kg	0.38	1	09/15/10 11:26	09/15/10 20:33	7440-47-3	
Lead	**23.6**	mg/kg	0.23	1	09/15/10 11:26	09/15/10 20:33	7439-92-1	
Selenium	**0.57**	mg/kg	0.57	1	09/15/10 11:26	09/15/10 20:33	7782-49-2	
Silver	ND	mg/kg	0.38	1	09/15/10 11:26	09/15/10 20:33	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.10**	mg/kg	0.021	1	09/15/10 11:59	09/16/10 10:37	7439-97-6	
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**6.4**	%	0.10	1		09/15/10 00:00		
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
Acenaphthene	ND	ug/kg	10.7	1	09/13/10 09:38	09/16/10 11:59	83-32-9	
Acenaphthylene	ND	ug/kg	10.7	1	09/13/10 09:38	09/16/10 11:59	208-96-8	
Anthracene	**12.8**	ug/kg	10.7	1	09/13/10 09:38	09/16/10 11:59	120-12-7	
Benzo(a)anthracene	**59.7**	ug/kg	10.7	1	09/13/10 09:38	09/16/10 11:59	56-55-3	
Benzo(a)pyrene	**66.9**	ug/kg	10.7	1	09/13/10 09:38	09/16/10 11:59	50-32-8	
Benzo(b)fluoranthene	**102**	ug/kg	10.7	1	09/13/10 09:38	09/16/10 11:59	205-99-2	M1
Benzo(g,h,i)perylene	**57.0**	ug/kg	10.7	1	09/13/10 09:38	09/16/10 11:59	191-24-2	
Benzo(k)fluoranthene	**34.0**	ug/kg	10.7	1	09/13/10 09:38	09/16/10 11:59	207-08-9	
Chrysene	**68.7**	ug/kg	10.7	1	09/13/10 09:38	09/16/10 11:59	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	10.7	1	09/13/10 09:38	09/16/10 11:59	53-70-3	M1
Fluoranthene	**85.1**	ug/kg	10.7	1	09/13/10 09:38	09/16/10 11:59	206-44-0	
Fluorene	ND	ug/kg	10.7	1	09/13/10 09:38	09/16/10 11:59	86-73-7	
Indeno(1,2,3-cd)pyrene	**46.6**	ug/kg	10.7	1	09/13/10 09:38	09/16/10 11:59	193-39-5	
Naphthalene	**67.8**	ug/kg	10.7	1	09/13/10 09:38	09/16/10 11:59	91-20-3	M1
Phenanthrene	**64.4**	ug/kg	10.7	1	09/13/10 09:38	09/16/10 11:59	85-01-8	
Pyrene	**85.8**	ug/kg	10.7	1	09/13/10 09:38	09/16/10 11:59	129-00-0	
2-Fluorobiphenyl (S)	77	%	39-125	1	09/13/10 09:38	09/16/10 11:59	321-60-8	
Terphenyl-d14 (S)	85	%	30-150	1	09/13/10 09:38	09/16/10 11:59	1718-51-0	

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ANALYTICAL RESULTS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Sample: SP-9 (0.5-4') **Lab ID: 10137689010** Collected: 09/08/10 00:00 Received: 09/09/10 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**8.5**	mg/kg	0.47	1	09/15/10 11:26	09/15/10 20:40	7440-38-2	
Barium	**46.9**	mg/kg	0.47	1	09/15/10 11:26	09/15/10 20:40	7440-39-3	
Cadmium	ND	mg/kg	0.047	1	09/15/10 11:26	09/15/10 20:40	7440-43-9	
Chromium	**12.3**	mg/kg	0.47	1	09/15/10 11:26	09/15/10 20:40	7440-47-3	
Lead	**28.9**	mg/kg	0.28	1	09/15/10 11:26	09/15/10 20:40	7439-92-1	
Selenium	ND	mg/kg	0.71	1	09/15/10 11:26	09/15/10 20:40	7782-49-2	
Silver	ND	mg/kg	0.47	1	09/15/10 11:26	09/15/10 20:40	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.16**	mg/kg	0.020	1	09/15/10 11:59	09/16/10 10:39	7439-97-6	
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**7.5**	%	0.10	1		09/15/10 00:00		
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
Acenaphthene	ND	ug/kg	108	2	09/13/10 09:38	09/17/10 10:42	83-32-9	
Acenaphthylene	ND	ug/kg	108	2	09/13/10 09:38	09/17/10 10:42	208-96-8	
Anthracene	ND	ug/kg	108	2	09/13/10 09:38	09/17/10 10:42	120-12-7	
Benzo(a)anthracene	**236**	ug/kg	108	2	09/13/10 09:38	09/17/10 10:42	56-55-3	
Benzo(a)pyrene	**258**	ug/kg	108	2	09/13/10 09:38	09/17/10 10:42	50-32-8	
Benzo(b)fluoranthene	**344**	ug/kg	108	2	09/13/10 09:38	09/17/10 10:42	205-99-2	
Benzo(g,h,i)perylene	**361**	ug/kg	108	2	09/13/10 09:38	09/17/10 10:42	191-24-2	
Benzo(k)fluoranthene	ND	ug/kg	108	2	09/13/10 09:38	09/17/10 10:42	207-08-9	
Chrysene	**350**	ug/kg	108	2	09/13/10 09:38	09/17/10 10:42	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	108	2	09/13/10 09:38	09/17/10 10:42	53-70-3	
Fluoranthene	**397**	ug/kg	108	2	09/13/10 09:38	09/17/10 10:42	206-44-0	
Fluorene	ND	ug/kg	108	2	09/13/10 09:38	09/17/10 10:42	86-73-7	
Indeno(1,2,3-cd)pyrene	**201**	ug/kg	108	2	09/13/10 09:38	09/17/10 10:42	193-39-5	
Naphthalene	ND	ug/kg	108	2	09/13/10 09:38	09/17/10 10:42	91-20-3	
Phenanthrene	**205**	ug/kg	108	2	09/13/10 09:38	09/17/10 10:42	85-01-8	
Pyrene	**385**	ug/kg	108	2	09/13/10 09:38	09/17/10 10:42	129-00-0	
2-Fluorobiphenyl (S)	61	%	39-125	2	09/13/10 09:38	09/17/10 10:42	321-60-8	D3,P3
Terphenyl-d14 (S)	65	%	30-150	2	09/13/10 09:38	09/17/10 10:42	1718-51-0	

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ANALYTICAL RESULTS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Sample: SP-10 (4-8') **Lab ID: 10137689011** Collected: 09/08/10 00:00 Received: 09/09/10 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**9.9**	mg/kg	0.44	1	09/15/10 11:27	09/15/10 20:55	7440-38-2	
Barium	**114**	mg/kg	0.44	1	09/15/10 11:27	09/15/10 20:55	7440-39-3	
Cadmium	**0.52**	mg/kg	0.044	1	09/15/10 11:27	09/15/10 20:55	7440-43-9	
Chromium	**11.6**	mg/kg	0.44	1	09/15/10 11:27	09/15/10 20:55	7440-47-3	
Lead	**231**	mg/kg	0.27	1	09/15/10 11:27	09/15/10 20:55	7439-92-1	
Selenium	ND	mg/kg	0.66	1	09/15/10 11:27	09/15/10 20:55	7782-49-2	
Silver	ND	mg/kg	0.44	1	09/15/10 11:27	09/15/10 20:55	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.43**	mg/kg	0.021	1	09/15/10 11:59	09/16/10 10:40	7439-97-6	
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**13.7**	%	0.10	1		09/15/10 00:00		

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ANALYTICAL RESULTS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Sample: SP-11 (0.5-4') **Lab ID: 10137689012** Collected: 09/08/10 00:00 Received: 09/09/10 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**6.7**	mg/kg	0.40	1	09/15/10 11:27	09/15/10 21:01	7440-38-2	
Barium	**74.2**	mg/kg	0.40	1	09/15/10 11:27	09/15/10 21:01	7440-39-3	
Cadmium	**0.42**	mg/kg	0.040	1	09/15/10 11:27	09/15/10 21:01	7440-43-9	
Chromium	**10.3**	mg/kg	0.40	1	09/15/10 11:27	09/15/10 21:01	7440-47-3	
Lead	**66.5**	mg/kg	0.24	1	09/15/10 11:27	09/15/10 21:01	7439-92-1	
Selenium	**1.1**	mg/kg	0.59	1	09/15/10 11:27	09/15/10 21:01	7782-49-2	
Silver	ND	mg/kg	0.40	1	09/15/10 11:27	09/15/10 21:01	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.22**	mg/kg	0.019	1	09/15/10 11:59	09/16/10 10:41	7439-97-6	
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**6.3**	%	0.10	1		09/15/10 00:00		
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
Acenaphthene	**327**	ug/kg	267	5	09/13/10 09:38	09/17/10 10:59	83-32-9	
Acenaphthylene	ND	ug/kg	267	5	09/13/10 09:38	09/17/10 10:59	208-96-8	
Anthracene	**580**	ug/kg	267	5	09/13/10 09:38	09/17/10 10:59	120-12-7	
Benzo(a)anthracene	**1330**	ug/kg	267	5	09/13/10 09:38	09/17/10 10:59	56-55-3	
Benzo(a)pyrene	**1190**	ug/kg	267	5	09/13/10 09:38	09/17/10 10:59	50-32-8	
Benzo(b)fluoranthene	**1640**	ug/kg	267	5	09/13/10 09:38	09/17/10 10:59	205-99-2	
Benzo(g,h,i)perylene	**970**	ug/kg	267	5	09/13/10 09:38	09/17/10 10:59	191-24-2	
Benzo(k)fluoranthene	**586**	ug/kg	267	5	09/13/10 09:38	09/17/10 10:59	207-08-9	
Chrysene	**1740**	ug/kg	267	5	09/13/10 09:38	09/17/10 10:59	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	267	5	09/13/10 09:38	09/17/10 10:59	53-70-3	
Fluoranthene	**3760**	ug/kg	267	5	09/13/10 09:38	09/17/10 10:59	206-44-0	
Fluorene	**277**	ug/kg	267	5	09/13/10 09:38	09/17/10 10:59	86-73-7	
Indeno(1,2,3-cd)pyrene	**800**	ug/kg	267	5	09/13/10 09:38	09/17/10 10:59	193-39-5	
Naphthalene	ND	ug/kg	267	5	09/13/10 09:38	09/17/10 10:59	91-20-3	
Phenanthrene	**2310**	ug/kg	267	5	09/13/10 09:38	09/17/10 10:59	85-01-8	
Pyrene	**2970**	ug/kg	267	5	09/13/10 09:38	09/17/10 10:59	129-00-0	
2-Fluorobiphenyl (S)	44	%	39-125	5	09/13/10 09:38	09/17/10 10:59	321-60-8	D4,P3
Terphenyl-d14 (S)	58	%	30-150	5	09/13/10 09:38	09/17/10 10:59	1718-51-0	

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ANALYTICAL RESULTS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Sample: SP-11 (4-8') **Lab ID: 10137689013** Collected: 09/08/10 00:00 Received: 09/09/10 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**10.5**	mg/kg	0.45	1	09/15/10 11:27	09/15/10 21:07	7440-38-2	
Barium	**88.6**	mg/kg	0.45	1	09/15/10 11:27	09/15/10 21:07	7440-39-3	
Cadmium	ND	mg/kg	0.045	1	09/15/10 11:27	09/15/10 21:07	7440-43-9	
Chromium	**12.5**	mg/kg	0.45	1	09/15/10 11:27	09/15/10 21:07	7440-47-3	
Lead	**118**	mg/kg	0.27	1	09/15/10 11:27	09/15/10 21:07	7439-92-1	
Selenium	ND	mg/kg	0.67	1	09/15/10 11:27	09/15/10 21:07	7782-49-2	
Silver	ND	mg/kg	0.45	1	09/15/10 11:27	09/15/10 21:07	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.58**	mg/kg	0.021	1	09/15/10 11:59	09/16/10 10:43	7439-97-6	
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**8.3**	%	0.10	1		09/15/10 00:00		

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ANALYTICAL RESULTS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

Sample: SP-12 (0.5-4') **Lab ID: 10137689014** Collected: 09/08/10 00:00 Received: 09/09/10 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
WIDRO GCS	Analytical Method: WI MOD DRO Preparation Method: WI MOD DRO							
Diesel Range Organics	**769**	mg/kg	59.4	10	09/13/10 14:05	09/16/10 01:30		
n-Triacontane (S)	289	%	50-150	10	09/13/10 14:05	09/16/10 01:30		S5
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**17.1**	mg/kg	0.45	1	09/15/10 11:27	09/15/10 21:13	7440-38-2	
Barium	**81.9**	mg/kg	0.45	1	09/15/10 11:27	09/15/10 21:13	7440-39-3	
Cadmium	**1.8**	mg/kg	0.045	1	09/15/10 11:27	09/15/10 21:13	7440-43-9	
Chromium	**12.3**	mg/kg	0.45	1	09/15/10 11:27	09/15/10 21:13	7440-47-3	
Lead	**482**	mg/kg	0.27	1	09/15/10 11:27	09/15/10 21:13	7439-92-1	
Selenium	ND	mg/kg	0.67	1	09/15/10 11:27	09/15/10 21:13	7782-49-2	
Silver	ND	mg/kg	0.45	1	09/15/10 11:27	09/15/10 21:13	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.24**	mg/kg	0.020	1	09/15/10 11:59	09/16/10 10:44	7439-97-6	
Dry Weight	Analytical Method: % Moisture							
Percent Moisture	**5.3**	%	0.10	1		09/15/10 00:00		
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3550							
Acenaphthene	**4890**	ug/kg	1060	20	09/13/10 09:38	09/16/10 21:07	83-32-9	
Acenaphthylene	ND	ug/kg	1060	20	09/13/10 09:38	09/16/10 21:07	208-96-8	
Anthracene	**10200**	ug/kg	1060	20	09/13/10 09:38	09/16/10 21:07	120-12-7	
Benzo(a)anthracene	**20900**	ug/kg	1060	20	09/13/10 09:38	09/16/10 21:07	56-55-3	
Benzo(a)pyrene	**20300**	ug/kg	1060	20	09/13/10 09:38	09/16/10 21:07	50-32-8	
Benzo(b)fluoranthene	**23900**	ug/kg	1060	20	09/13/10 09:38	09/16/10 21:07	205-99-2	
Benzo(g,h,i)perylene	**14400**	ug/kg	1060	20	09/13/10 09:38	09/16/10 21:07	191-24-2	
Benzo(k)fluoranthene	**8430**	ug/kg	1060	20	09/13/10 09:38	09/16/10 21:07	207-08-9	
Chrysene	**19000**	ug/kg	1060	20	09/13/10 09:38	09/16/10 21:07	218-01-9	
Dibenz(a,h)anthracene	**1080**	ug/kg	1060	20	09/13/10 09:38	09/16/10 21:07	53-70-3	
Fluoranthene	**45600**	ug/kg	5280	100	09/13/10 09:38	09/17/10 11:17	206-44-0	
Fluorene	**5110**	ug/kg	1060	20	09/13/10 09:38	09/16/10 21:07	86-73-7	
Indeno(1,2,3-cd)pyrene	**11500**	ug/kg	1060	20	09/13/10 09:38	09/16/10 21:07	193-39-5	
Naphthalene	ND	ug/kg	1060	20	09/13/10 09:38	09/16/10 21:07	91-20-3	
Phenanthrene	**33300**	ug/kg	5280	100	09/13/10 09:38	09/17/10 11:17	85-01-8	
Pyrene	**48900**	ug/kg	5280	100	09/13/10 09:38	09/17/10 11:17	129-00-0	
2-Fluorobiphenyl (S)	0	%	39-125	20	09/13/10 09:38	09/16/10 21:07	321-60-8	D4,P3, S4
Terphenyl-d14 (S)	0	%	30-150	20	09/13/10 09:38	09/16/10 21:07	1718-51-0	S4

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QUALITY CONTROL DATA

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

QC Batch: OEXT/13776 Analysis Method: WI MOD DRO
QC Batch Method: WI MOD DRO Analysis Description: WIDRO GCS
Associated Lab Samples: 10137689014

METHOD BLANK: 852111 Matrix: Solid
Associated Lab Samples: 10137689014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organics	mg/kg	ND	5.0	09/15/10 23:19	
n-Triacontane (S)	%	81	50-150	09/15/10 23:19	

LABORATORY CONTROL SAMPLE & LCSD: 852112 852113

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Diesel Range Organics	mg/kg	80	70.4	79.7	88	100	70-120	12	20	
n-Triacontane (S)	%				85	87	50-150			

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QUALITY CONTROL DATA

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

QC Batch: MPRP/22277 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 10137689001, 10137689002, 10137689003, 10137689004, 10137689005, 10137689006, 10137689007, 10137689008, 10137689009, 10137689010, 10137689011, 10137689012, 10137689013, 10137689014

METHOD BLANK: 852302 Matrix: Solid
Associated Lab Samples: 10137689001, 10137689002, 10137689003, 10137689004, 10137689005, 10137689006, 10137689007, 10137689008, 10137689009, 10137689010, 10137689011, 10137689012, 10137689013, 10137689014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	0.45	09/15/10 19:09	
Barium	mg/kg	ND	0.45	09/15/10 19:09	
Cadmium	mg/kg	ND	0.045	09/15/10 19:09	
Chromium	mg/kg	ND	0.45	09/15/10 19:09	
Lead	mg/kg	ND	0.27	09/15/10 19:09	
Selenium	mg/kg	ND	0.67	09/15/10 19:09	
Silver	mg/kg	ND	0.45	09/15/10 19:09	

LABORATORY CONTROL SAMPLE: 852303

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	45.5	40.3	89	80-120	
Barium	mg/kg	45.5	44.2	97	80-120	
Cadmium	mg/kg	45.5	41.0	90	80-120	
Chromium	mg/kg	45.5	44.1	97	80-120	
Lead	mg/kg	45.5	41.7	92	80-120	
Selenium	mg/kg	45.5	37.0	81	80-120	
Silver	mg/kg	22.7	20.1	88	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 852304 852305

Parameter	Units	10137689001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	16.3	48.3	61.8	56.4	59.2	83	69	75-125	5	30	M1
Barium	mg/kg	201	48.3	61.8	410	179	433	-36	75-125	79	30	D6,M1
Cadmium	mg/kg	1.8	48.3	61.8	43.1	50.9	86	79	75-125	17	30	
Chromium	mg/kg	26.2	48.3	61.8	71.1	75.4	93	80	75-125	6	30	
Lead	mg/kg	677	48.3	61.8	4230	357	7370	-518	75-125	169	30	P6
Selenium	mg/kg	1.6	48.3	61.8	39.3	47.4	78	74	75-125	19	30	M1
Silver	mg/kg	ND	24.1	30.9	20.2	24.4	84	79	75-125	19	30	

MATRIX SPIKE SAMPLE: 852306

Parameter	Units	10137693002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	5.4	36.9	38.3	89	75-125	
Barium	mg/kg	21.8	36.9	61.0	106	75-125	
Cadmium	mg/kg	ND	36.9	32.6	88	75-125	

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QUALITY CONTROL DATA

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

MATRIX SPIKE SAMPLE: 852306

Parameter	Units	10137693002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chromium	mg/kg	5.9	36.9	42.9	100	75-125	
Lead	mg/kg	1.5	36.9	32.5	84	75-125	
Selenium	mg/kg	ND	36.9	30.1	82	75-125	
Silver	mg/kg	ND	18.5	16.0	87	75-125	

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QUALITY CONTROL DATA

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

QC Batch: MERP/4791 Analysis Method: EPA 7471
QC Batch Method: EPA 7471 Analysis Description: 7471 Mercury
Associated Lab Samples: 10137689001, 10137689002, 10137689003, 10137689004, 10137689005, 10137689006, 10137689007, 10137689008, 10137689009, 10137689010, 10137689011, 10137689012, 10137689013, 10137689014

METHOD BLANK: 851715 Matrix: Solid
Associated Lab Samples: 10137689001, 10137689002, 10137689003, 10137689004, 10137689005, 10137689006, 10137689007, 10137689008, 10137689009, 10137689010, 10137689011, 10137689012, 10137689013, 10137689014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.018	09/16/10 10:15	

LABORATORY CONTROL SAMPLE: 851716

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.47	0.52	111	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851717 851718

Parameter	Units	10137689001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	0.27	.56	.58	1.0	0.97	138	122	80-120	7	20	M1

MATRIX SPIKE SAMPLE: 851719

Parameter	Units	10137582007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	0.74	.55	1.1	64	80-120	M1

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QUALITY CONTROL DATA

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

QC Batch: MPRP/22349 Analysis Method: % Moisture
QC Batch Method: % Moisture Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 10137689001, 10137689002, 10137689003, 10137689004, 10137689005, 10137689006, 10137689007, 10137689008, 10137689009, 10137689010, 10137689011, 10137689012, 10137689013, 10137689014

SAMPLE DUPLICATE: 853702

Parameter	Units	10137666002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	10.4	9.8	6	30	

SAMPLE DUPLICATE: 853703

Parameter	Units	10137694001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	21.9	21.6	1	30	

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QUALITY CONTROL DATA

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

QC Batch: OEXT/13764 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3550 Analysis Description: 8270 Soild PAH by SIM MSSV
Associated Lab Samples: 10137689001, 10137689002, 10137689003, 10137689004, 10137689005, 10137689006, 10137689007, 10137689008

METHOD BLANK: 850949 Matrix: Solid
Associated Lab Samples: 10137689001, 10137689002, 10137689003, 10137689004, 10137689005, 10137689006, 10137689007, 10137689008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acenaphthene	ug/kg	ND	10.0	09/16/10 11:23	
Acenaphthylene	ug/kg	ND	10.0	09/16/10 11:23	
Anthracene	ug/kg	ND	10.0	09/16/10 11:23	
Benzo(a)anthracene	ug/kg	ND	10.0	09/16/10 11:23	
Benzo(a)pyrene	ug/kg	ND	10.0	09/16/10 11:23	
Benzo(b)fluoranthene	ug/kg	ND	10.0	09/16/10 11:23	
Benzo(g,h,i)perylene	ug/kg	ND	10.0	09/16/10 11:23	
Benzo(k)fluoranthene	ug/kg	ND	10.0	09/16/10 11:23	
Chrysene	ug/kg	ND	10.0	09/16/10 11:23	
Dibenz(a,h)anthracene	ug/kg	ND	10.0	09/16/10 11:23	
Fluoranthene	ug/kg	ND	10.0	09/16/10 11:23	
Fluorene	ug/kg	ND	10.0	09/16/10 11:23	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	10.0	09/16/10 11:23	
Naphthalene	ug/kg	ND	10.0	09/16/10 11:23	
Phenanthrene	ug/kg	ND	10.0	09/16/10 11:23	
Pyrene	ug/kg	ND	10.0	09/16/10 11:23	
2-Fluorobiphenyl (S)	%	78	39-125	09/16/10 11:23	
Terphenyl-d14 (S)	%	82	30-150	09/16/10 11:23	

LABORATORY CONTROL SAMPLE: 850950

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acenaphthene	ug/kg	33.3	25.9	78	50-125	
Acenaphthylene	ug/kg	33.3	25.1	75	51-125	
Anthracene	ug/kg	33.3	26.1	78	45-125	
Benzo(a)anthracene	ug/kg	33.3	23.3	70	47-125	
Benzo(a)pyrene	ug/kg	33.3	27.0	81	50-125	
Benzo(b)fluoranthene	ug/kg	33.3	25.0	75	51-125	
Benzo(g,h,i)perylene	ug/kg	33.3	28.4	85	30-131	
Benzo(k)fluoranthene	ug/kg	33.3	33.4	100	48-137	
Chrysene	ug/kg	33.3	29.8	89	48-127	
Dibenz(a,h)anthracene	ug/kg	33.3	28.4	85	37-128	
Fluoranthene	ug/kg	33.3	25.5	77	51-125	
Fluorene	ug/kg	33.3	27.1	81	47-125	
Indeno(1,2,3-cd)pyrene	ug/kg	33.3	28.4	85	38-125	
Naphthalene	ug/kg	33.3	24.8	74	45-125	
Phenanthrene	ug/kg	33.3	24.5	73	48-125	
Pyrene	ug/kg	33.3	26.4	79	47-125	
2-Fluorobiphenyl (S)	%			78	39-125	
Terphenyl-d14 (S)	%			85	30-150	

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QUALITY CONTROL DATA

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 850951 850952

Parameter	Units	10137582002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Acenaphthene	ug/kg	0.018 mg/kg	39	39	42.6	41.4	62	59	30-150	3	30	
Acenaphthylene	ug/kg	0.016 mg/kg	39	39	40.7	41.8	62	65	30-150	3	30	
Anthracene	ug/kg	ND	39	39	39.9	41.3	102	106	30-150	4	30	
Benzo(a)anthracene	ug/kg	0.022 mg/kg	39	39	49.5	49.4	70	69	30-150	.2	30	
Benzo(a)pyrene	ug/kg	0.017 mg/kg	39	39	45.3	46.3	72	75	30-150	2	30	
Benzo(b)fluoranthene	ug/kg	0.025 mg/kg	39	39	52.0	53.4	69	72	30-150	3	30	
Benzo(g,h,i)perylene	ug/kg	0.016 mg/kg	39	39	51.2	52.4	91	94	30-150	2	30	
Benzo(k)fluoranthene	ug/kg	0.013 mg/kg	39	39	39.5	41.6	69	75	30-150	5	30	
Chrysene	ug/kg	0.025 mg/kg	39	39	52.7	51.1	71	67	30-150	3	30	
Dibenz(a,h)anthracene	ug/kg	ND	39	39	35.1	38.2	90	98	30-150	8	30	
Fluoranthene	ug/kg	0.042 mg/kg	39	39	72.1	68.4	77	68	30-150	5	30	
Fluorene	ug/kg	0.018 mg/kg	39	39	42.6	43.4	62	64	30-150	2	30	
Indeno(1,2,3-cd)pyrene	ug/kg	0.012 mg/kg	39	39	41.9	45.0	77	85	30-150	7	30	
Naphthalene	ug/kg	2.6 mg/kg	39	39	1650	1200	-2440	-3600	30-150	32	30	D6,E, M1
Phenanthrene	ug/kg	0.027 mg/kg	39	39	61.6	57.3	88	77	30-150	7	30	
Pyrene	ug/kg	0.046 mg/kg	39	39	78.5	72.6	82	67	30-150	8	30	
2-Fluorobiphenyl (S)	%						72	78	39-125			
Terphenyl-d14 (S)	%						83	91	30-150			

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QUALITY CONTROL DATA

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

QC Batch: OEXT/13772 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3550 Analysis Description: 8270 Soild PAH by SIM MSSV
Associated Lab Samples: 10137689009, 10137689010, 10137689012, 10137689014

METHOD BLANK: 851797 Matrix: Solid
Associated Lab Samples: 10137689009, 10137689010, 10137689012, 10137689014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acenaphthene	ug/kg	ND	10.0	09/16/10 10:48	
Acenaphthylene	ug/kg	ND	10.0	09/16/10 10:48	
Anthracene	ug/kg	ND	10.0	09/16/10 10:48	
Benzo(a)anthracene	ug/kg	ND	10.0	09/16/10 10:48	
Benzo(a)pyrene	ug/kg	ND	10.0	09/16/10 10:48	
Benzo(b)fluoranthene	ug/kg	ND	10.0	09/16/10 10:48	
Benzo(g,h,i)perylene	ug/kg	ND	10.0	09/16/10 10:48	
Benzo(k)fluoranthene	ug/kg	ND	10.0	09/16/10 10:48	
Chrysene	ug/kg	ND	10.0	09/16/10 10:48	
Dibenz(a,h)anthracene	ug/kg	ND	10.0	09/16/10 10:48	
Fluoranthene	ug/kg	ND	10.0	09/16/10 10:48	
Fluorene	ug/kg	ND	10.0	09/16/10 10:48	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	10.0	09/16/10 10:48	
Naphthalene	ug/kg	ND	10.0	09/16/10 10:48	
Phenanthrene	ug/kg	ND	10.0	09/16/10 10:48	
Pyrene	ug/kg	ND	10.0	09/16/10 10:48	
2-Fluorobiphenyl (S)	%	69	39-125	09/16/10 10:48	
Terphenyl-d14 (S)	%	90	30-150	09/16/10 10:48	

LABORATORY CONTROL SAMPLE: 851798

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acenaphthene	ug/kg	33.3	26.5	79	50-125	
Acenaphthylene	ug/kg	33.3	25.4	76	51-125	
Anthracene	ug/kg	33.3	26.5	80	45-125	
Benzo(a)anthracene	ug/kg	33.3	23.6	71	47-125	
Benzo(a)pyrene	ug/kg	33.3	29.0	87	50-125	
Benzo(b)fluoranthene	ug/kg	33.3	26.9	81	51-125	
Benzo(g,h,i)perylene	ug/kg	33.3	29.6	89	30-131	
Benzo(k)fluoranthene	ug/kg	33.3	36.1	108	48-137	
Chrysene	ug/kg	33.3	31.8	95	48-127	
Dibenz(a,h)anthracene	ug/kg	33.3	30.1	90	37-128	
Fluoranthene	ug/kg	33.3	26.6	80	51-125	
Fluorene	ug/kg	33.3	27.0	81	47-125	
Indeno(1,2,3-cd)pyrene	ug/kg	33.3	30.0	90	38-125	
Naphthalene	ug/kg	33.3	25.4	76	45-125	
Phenanthrene	ug/kg	33.3	24.9	75	48-125	
Pyrene	ug/kg	33.3	26.9	81	47-125	
2-Fluorobiphenyl (S)	%			83	39-125	
Terphenyl-d14 (S)	%			92	30-150	

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QUALITY CONTROL DATA

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851799 851800

Parameter	Units	10137689009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Acenaphthene	ug/kg	ND	35.6	35.6	29.8	28.6	84	80	30-150	4	30	
Acenaphthylene	ug/kg	ND	35.6	35.6	35.4	32.7	99	92	30-150	8	30	
Anthracene	ug/kg	12.8	35.6	35.6	37.4	39.6	69	75	30-150	6	30	
Benzo(a)anthracene	ug/kg	59.7	35.6	35.6	83.4	80.8	67	59	30-150	3	30	
Benzo(a)pyrene	ug/kg	66.9	35.6	35.6	87.7	82.1	58	42	30-150	7	30	
Benzo(b)fluoranthene	ug/kg	102	35.6	35.6	119	111	47	23	30-150	7	30	M1
Benzo(g,h,i)perylene	ug/kg	57.0	35.6	35.6	82.8	78.1	72	59	30-150	6	30	
Benzo(k)fluoranthene	ug/kg	34.0	35.6	35.6	57.0	57.3	65	66	30-150	.6	30	
Chrysene	ug/kg	68.7	35.6	35.6	89.3	85.9	58	48	30-150	4	30	
Dibenz(a,h)anthracene	ug/kg	ND	35.6	35.6	ND	ND	14	10	30-150		30	M1
Fluoranthene	ug/kg	85.1	35.6	35.6	110	111	70	73	30-150	1	30	
Fluorene	ug/kg	ND	35.6	35.6	32.2	32.1	91	90	30-150	.4	30	
Indeno(1,2,3-cd)pyrene	ug/kg	46.6	35.6	35.6	72.2	69.0	72	63	30-150	5	30	
Naphthalene	ug/kg	67.8	35.6	35.6	80.8	66.3	36	-4	30-150	20	30	M1
Phenanthrene	ug/kg	64.4	35.6	35.6	84.1	90.3	55	73	30-150	7	30	
Pyrene	ug/kg	85.8	35.6	35.6	109	104	66	52	30-150	5	30	
2-Fluorobiphenyl (S)	%						77	69	39-125			
Terphenyl-d14 (S)	%						85	85	30-150			

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QUALITY CONTROL DATA

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

QC Batch: MSV/15314 Analysis Method: EPA 8260
QC Batch Method: EPA 5035/5030B Analysis Description: 8260 MSV 5030 Med Level
Associated Lab Samples: 10137689001, 10137689003, 10137689005

METHOD BLANK: 851676 Matrix: Solid
Associated Lab Samples: 10137689001, 10137689003, 10137689005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	50.0	09/13/10 22:03	
1,1,1-Trichloroethane	ug/kg	ND	50.0	09/13/10 22:03	
1,1,2,2-Tetrachloroethane	ug/kg	ND	50.0	09/13/10 22:03	
1,1,2-Trichloroethane	ug/kg	ND	50.0	09/13/10 22:03	
1,1,2-Trichlorotrifluoroethane	ug/kg	ND	50.0	09/13/10 22:03	
1,1-Dichloroethane	ug/kg	ND	50.0	09/13/10 22:03	
1,1-Dichloroethene	ug/kg	ND	50.0	09/13/10 22:03	
1,1-Dichloropropene	ug/kg	ND	50.0	09/13/10 22:03	
1,2,3-Trichlorobenzene	ug/kg	ND	50.0	09/13/10 22:03	
1,2,3-Trichloropropane	ug/kg	ND	50.0	09/13/10 22:03	
1,2,4-Trichlorobenzene	ug/kg	ND	50.0	09/13/10 22:03	
1,2,4-Trimethylbenzene	ug/kg	ND	50.0	09/13/10 22:03	
1,2-Dibromo-3-chloropropane	ug/kg	ND	200	09/13/10 22:03	
1,2-Dibromoethane (EDB)	ug/kg	ND	50.0	09/13/10 22:03	
1,2-Dichlorobenzene	ug/kg	ND	50.0	09/13/10 22:03	
1,2-Dichloroethane	ug/kg	ND	50.0	09/13/10 22:03	
1,2-Dichloropropane	ug/kg	ND	50.0	09/13/10 22:03	
1,3,5-Trimethylbenzene	ug/kg	ND	50.0	09/13/10 22:03	
1,3-Dichlorobenzene	ug/kg	ND	50.0	09/13/10 22:03	
1,3-Dichloropropane	ug/kg	ND	50.0	09/13/10 22:03	
1,4-Dichlorobenzene	ug/kg	ND	50.0	09/13/10 22:03	
2,2-Dichloropropane	ug/kg	ND	200	09/13/10 22:03	
2-Butanone (MEK)	ug/kg	ND	500	09/13/10 22:03	
2-Chlorotoluene	ug/kg	ND	50.0	09/13/10 22:03	
4-Chlorotoluene	ug/kg	ND	50.0	09/13/10 22:03	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	500	09/13/10 22:03	
Acetone	ug/kg	ND	500	09/13/10 22:03	
Allyl chloride	ug/kg	ND	200	09/13/10 22:03	
Benzene	ug/kg	ND	20.0	09/13/10 22:03	
Bromobenzene	ug/kg	ND	50.0	09/13/10 22:03	
Bromochloromethane	ug/kg	ND	50.0	09/13/10 22:03	
Bromodichloromethane	ug/kg	ND	50.0	09/13/10 22:03	
Bromoform	ug/kg	ND	400	09/13/10 22:03	
Bromomethane	ug/kg	ND	500	09/13/10 22:03	
Carbon tetrachloride	ug/kg	ND	200	09/13/10 22:03	
Chlorobenzene	ug/kg	ND	50.0	09/13/10 22:03	
Chloroethane	ug/kg	ND	500	09/13/10 22:03	
Chloroform	ug/kg	ND	50.0	09/13/10 22:03	
Chloromethane	ug/kg	ND	200	09/13/10 22:03	
cis-1,2-Dichloroethene	ug/kg	ND	50.0	09/13/10 22:03	
cis-1,3-Dichloropropene	ug/kg	ND	50.0	09/13/10 22:03	
Dibromochloromethane	ug/kg	ND	50.0	09/13/10 22:03	
Dibromomethane	ug/kg	ND	50.0	09/13/10 22:03	

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QUALITY CONTROL DATA

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

METHOD BLANK: 851676 Matrix: Solid

Associated Lab Samples: 10137689001, 10137689003, 10137689005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	ug/kg	ND	50.0	09/13/10 22:03	
Dichlorofluoromethane	ug/kg	ND	50.0	09/13/10 22:03	
Diethyl ether (Ethyl ether)	ug/kg	ND	200	09/13/10 22:03	
Ethylbenzene	ug/kg	ND	50.0	09/13/10 22:03	
Hexachloro-1,3-butadiene	ug/kg	ND	200	09/13/10 22:03	
Isopropylbenzene (Cumene)	ug/kg	ND	50.0	09/13/10 22:03	
Methyl-tert-butyl ether	ug/kg	ND	50.0	09/13/10 22:03	
Methylene Chloride	ug/kg	ND	200	09/13/10 22:03	
n-Butylbenzene	ug/kg	ND	50.0	09/13/10 22:03	
n-Propylbenzene	ug/kg	ND	50.0	09/13/10 22:03	
Naphthalene	ug/kg	ND	200	09/13/10 22:03	
p-Isopropyltoluene	ug/kg	ND	50.0	09/13/10 22:03	
sec-Butylbenzene	ug/kg	ND	50.0	09/13/10 22:03	
Styrene	ug/kg	ND	50.0	09/13/10 22:03	
tert-Butylbenzene	ug/kg	ND	50.0	09/13/10 22:03	
Tetrachloroethene	ug/kg	ND	50.0	09/13/10 22:03	
Tetrahydrofuran	ug/kg	ND	500	09/13/10 22:03	
Toluene	ug/kg	ND	50.0	09/13/10 22:03	
trans-1,2-Dichloroethene	ug/kg	ND	50.0	09/13/10 22:03	
trans-1,3-Dichloropropene	ug/kg	ND	50.0	09/13/10 22:03	
Trichloroethene	ug/kg	ND	50.0	09/13/10 22:03	
Trichlorofluoromethane	ug/kg	ND	50.0	09/13/10 22:03	
Vinyl chloride	ug/kg	ND	20.0	09/13/10 22:03	
Xylene (Total)	ug/kg	ND	150	09/13/10 22:03	
1,2-Dichloroethane-d4 (S)	%	104	67-125	09/13/10 22:03	
4-Bromofluorobenzene (S)	%	101	75-132	09/13/10 22:03	
Dibromofluoromethane (S)	%	104	69-127	09/13/10 22:03	
Toluene-d8 (S)	%	99	75-144	09/13/10 22:03	

LABORATORY CONTROL SAMPLE & LCSD: 851677 851678

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	1000	1040	1020	104	102	75-125	3	20	
1,1,1-Trichloroethane	ug/kg	1000	1110	1030	111	103	75-136	8	20	
1,1,2,2-Tetrachloroethane	ug/kg	1000	1090	1060	109	106	70-135	3	20	
1,1,2-Trichloroethane	ug/kg	1000	1040	1040	104	104	75-126	.5	20	
1,1,2-Trichlorotrifluoroethane	ug/kg	1000	1260	1030	126	103	47-150	20	20	
1,1-Dichloroethane	ug/kg	1000	1150	1150	115	115	75-130	.3	20	
1,1-Dichloroethene	ug/kg	1000	1220	1070	122	107	69-134	13	20	
1,1-Dichloropropene	ug/kg	1000	1150	1080	115	108	70-130	7	20	
1,2,3-Trichlorobenzene	ug/kg	1000	1060	972	106	97	75-141	9	20	
1,2,3-Trichloropropane	ug/kg	1000	1100	960	110	96	71-136	13	20	
1,2,4-Trichlorobenzene	ug/kg	1000	1100	985	110	98	75-139	12	20	
1,2,4-Trimethylbenzene	ug/kg	1000	1080	1040	108	104	75-126	4	20	
1,2-Dibromo-3-chloropropane	ug/kg	1000	1100	951	110	95	58-150	14	20	

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QUALITY CONTROL DATA

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

LABORATORY CONTROL SAMPLE & LCSD: 851677 851678

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/kg	1000	1100	1050	110	105	75-128	5	20	
1,2-Dichlorobenzene	ug/kg	1000	1100	1060	110	106	75-125	4	20	
1,2-Dichloroethane	ug/kg	1000	1220	1150	122	115	73-130	6	20	
1,2-Dichloropropane	ug/kg	1000	1130	1100	113	110	75-125	2	20	
1,3,5-Trimethylbenzene	ug/kg	1000	1080	1060	108	106	75-125	2	20	
1,3-Dichlorobenzene	ug/kg	1000	1070	1040	107	104	75-125	2	20	
1,3-Dichloropropane	ug/kg	1000	1080	1050	108	105	75-125	3	20	
1,4-Dichlorobenzene	ug/kg	1000	1070	1060	107	106	75-131	.9	20	
2,2-Dichloropropane	ug/kg	1000	878	809	88	81	42-150	8	20	
2-Butanone (MEK)	ug/kg	1000	1200	1190	120	119	44-150	.4	20	
2-Chlorotoluene	ug/kg	1000	1040	985	104	98	75-125	6	20	
4-Chlorotoluene	ug/kg	1000	1050	1020	105	102	75-125	3	20	
4-Methyl-2-pentanone (MIBK)	ug/kg	1000	1040	1020	104	102	56-147	2	20	
Acetone	ug/kg	2500	2300	2160	92	86	57-146	6	20	
Allyl chloride	ug/kg	1000	1260	1140	126	114	75-128	10	20	
Benzene	ug/kg	1000	1140	1110	114	111	69-134	2	20	
Bromobenzene	ug/kg	1000	1070	1050	107	105	75-125	2	20	
Bromochloromethane	ug/kg	1000	1210	1160	121	116	75-125	4	20	
Bromodichloromethane	ug/kg	1000	1160	1040	116	104	75-129	11	20	
Bromoform	ug/kg	1000	1030	960	103	96	73-141	7	20	
Bromomethane	ug/kg	1000	1480	1480	148	148	71-142	.4	20	L3
Carbon tetrachloride	ug/kg	1000	1120	969	112	97	73-141	14	20	
Chlorobenzene	ug/kg	1000	1060	1010	106	101	75-125	5	20	
Chloroethane	ug/kg	1000	1700	1500	170	150	65-137	12	20	CH,L3
Chloroform	ug/kg	1000	1110	1120	111	112	75-127	1	20	
Chloromethane	ug/kg	1000	1050	952	105	95	60-125	10	20	
cis-1,2-Dichloroethene	ug/kg	1000	1200	1110	120	111	75-129	7	20	
cis-1,3-Dichloropropene	ug/kg	1000	1120	1040	112	104	75-134	7	20	
Dibromochloromethane	ug/kg	1000	1060	1030	106	103	75-129	3	20	
Dibromomethane	ug/kg	1000	1170	1130	117	113	75-127	3	20	
Dichlorodifluoromethane	ug/kg	1000	1020	738	102	74	36-134	32	20	D6
Dichlorofluoromethane	ug/kg	1000	1220	1170	122	117	53-142	4	20	
Diethyl ether (Ethyl ether)	ug/kg	1000	1180	1150	118	115	64-131	3	20	
Ethylbenzene	ug/kg	1000	1060	1010	106	101	75-125	4	20	
Hexachloro-1,3-butadiene	ug/kg	500	574	555	115	111	70-150	3	20	
Isopropylbenzene (Cumene)	ug/kg	1000	1020	984	102	98	75-127	4	20	
Methyl-tert-butyl ether	ug/kg	1000	1150	1080	115	108	69-138	6	20	
Methylene Chloride	ug/kg	1000	1150	1110	115	111	69-130	4	20	
n-Butylbenzene	ug/kg	1000	1140	1070	114	107	75-135	6	20	
n-Propylbenzene	ug/kg	1000	1090	1030	109	103	75-125	6	20	
Naphthalene	ug/kg	1000	1260	1140	126	114	75-142	10	20	
p-Isopropyltoluene	ug/kg	1000	1090	1050	109	105	75-133	4	20	
sec-Butylbenzene	ug/kg	1000	1120	1030	112	103	75-129	8	20	
Styrene	ug/kg	1000	1090	1050	109	105	75-125	3	20	
tert-Butylbenzene	ug/kg	1000	1060	971	106	97	75-128	9	20	
Tetrachloroethene	ug/kg	1000	1020	985	102	99	75-130	3	20	
Tetrahydrofuran	ug/kg	10000	11300	10700	113	107	53-136	6	20	
Toluene	ug/kg	1000	1050	1010	105	101	75-125	4	20	

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QUALITY CONTROL DATA

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

LABORATORY CONTROL SAMPLE & LCSD: 851677 851678

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
trans-1,2-Dichloroethene	ug/kg	1000	1210	1110	121	111	75-132	9	20	
trans-1,3-Dichloropropene	ug/kg	1000	973	918	97	92	75-128	6	20	
Trichloroethene	ug/kg	1000	1120	1060	112	106	75-125	6	20	
Trichlorofluoromethane	ug/kg	1000	1290	1090	129	109	35-150	17	20	
Vinyl chloride	ug/kg	1000	1090	924	109	92	60-126	17	20	
Xylene (Total)	ug/kg	3000	3180	3000	106	100	75-125	6	20	
1,2-Dichloroethane-d4 (S)	%				104	101	67-125			
4-Bromofluorobenzene (S)	%				97	95	75-132			
Dibromofluoromethane (S)	%				103	102	69-127			
Toluene-d8 (S)	%				97	94	75-144			

MATRIX SPIKE SAMPLE: 851679

Parameter	Units	10137666001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	1110	1100	99	49-150	
1,1,1-Trichloroethane	ug/kg	ND	1110	1270	114	58-150	
1,1,2,2-Tetrachloroethane	ug/kg	ND	1110	1180	106	54-146	
1,1,2-Trichloroethane	ug/kg	ND	1110	1150	103	48-154	
1,1,2-Trichlorotrifluoroethane	ug/kg	ND	1110	1430	129	47-150	
1,1-Dichloroethane	ug/kg	ND	1110	1290	116	57-143	
1,1-Dichloroethene	ug/kg	ND	1110	1380	124	52-150	
1,1-Dichloropropene	ug/kg	ND	1110	1330	119	58-147	
1,2,3-Trichlorobenzene	ug/kg	ND	1110	1100	99	36-150	
1,2,3-Trichloropropane	ug/kg	ND	1110	1130	102	56-147	
1,2,4-Trichlorobenzene	ug/kg	ND	1110	1140	103	30-150	
1,2,4-Trimethylbenzene	ug/kg	ND	1110	1210	109	38-150	
1,2-Dibromo-3-chloropropane	ug/kg	ND	1110	1040	94	30-150	
1,2-Dibromoethane (EDB)	ug/kg	ND	1110	1150	103	53-144	
1,2-Dichlorobenzene	ug/kg	ND	1110	1180	107	45-150	
1,2-Dichloroethane	ug/kg	ND	1110	1270	115	39-150	
1,2-Dichloropropane	ug/kg	ND	1110	1200	108	60-135	
1,3,5-Trimethylbenzene	ug/kg	ND	1110	1200	108	30-150	
1,3-Dichlorobenzene	ug/kg	ND	1110	1210	109	42-150	
1,3-Dichloropropane	ug/kg	ND	1110	1180	107	62-129	
1,4-Dichlorobenzene	ug/kg	ND	1110	1170	106	45-150	
2,2-Dichloropropane	ug/kg	ND	1110	941	85	30-150	
2-Butanone (MEK)	ug/kg	ND	1110	1360	122	37-150	
2-Chlorotoluene	ug/kg	ND	1110	1180	106	30-150	
4-Chlorotoluene	ug/kg	ND	1110	1190	107	40-150	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	1110	1100	99	45-150	
Acetone	ug/kg	ND	2770	2570	93	30-150	
Allyl chloride	ug/kg	ND	1110	1350	122	30-150	
Benzene	ug/kg	ND	1110	1270	115	57-140	
Bromobenzene	ug/kg	ND	1110	1190	107	57-141	
Bromochloromethane	ug/kg	ND	1110	1320	119	58-140	
Bromodichloromethane	ug/kg	ND	1110	1230	111	54-146	
Bromoform	ug/kg	ND	1110	1040	94	35-150	

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QUALITY CONTROL DATA

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

MATRIX SPIKE SAMPLE: 851679

Parameter	Units	10137666001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Bromomethane	ug/kg	ND	1110	1760	158	30-150	M0
Carbon tetrachloride	ug/kg	ND	1110	1250	113	34-150	
Chlorobenzene	ug/kg	ND	1110	1150	103	54-142	
Chloroethane	ug/kg	ND	1110	1830	164	30-150	CH,M0
Chloroform	ug/kg	ND	1110	1260	114	60-136	
Chloromethane	ug/kg	ND	1110	1240	112	44-129	
cis-1,2-Dichloroethene	ug/kg	ND	1110	1270	115	54-144	
cis-1,3-Dichloropropene	ug/kg	ND	1110	1210	109	52-141	
Dibromochloromethane	ug/kg	ND	1110	1120	101	43-150	
Dibromomethane	ug/kg	ND	1110	1220	109	55-139	
Dichlorodifluoromethane	ug/kg	ND	1110	1410	127	30-150	
Dichlorofluoromethane	ug/kg	ND	1110	1400	126	53-142	
Diethyl ether (Ethyl ether)	ug/kg	ND	1110	1280	115	59-135	
Ethylbenzene	ug/kg	ND	1110	1190	107	51-150	
Hexachloro-1,3-butadiene	ug/kg	ND	556	609	110	30-150	
Isopropylbenzene (Cumene)	ug/kg	ND	1110	1160	104	41-150	
Methyl-tert-butyl ether	ug/kg	ND	1110	1170	106	52-139	
Methylene Chloride	ug/kg	ND	1110	1220	110	56-138	
n-Butylbenzene	ug/kg	ND	1110	1300	117	30-150	
n-Propylbenzene	ug/kg	ND	1110	1240	112	30-150	
Naphthalene	ug/kg	ND	1110	1310	118	30-150	
p-Isopropyltoluene	ug/kg	ND	1110	1230	111	30-150	
sec-Butylbenzene	ug/kg	ND	1110	1270	114	30-150	
Styrene	ug/kg	ND	1110	1220	110	40-150	
tert-Butylbenzene	ug/kg	ND	1110	1180	106	61-150	
Tetrachloroethene	ug/kg	ND	1110	1180	106	30-150	
Tetrahydrofuran	ug/kg	ND	11100	11600	105	53-136	
Toluene	ug/kg	ND	1110	1190	107	50-146	
trans-1,2-Dichloroethene	ug/kg	ND	1110	1360	123	58-139	
trans-1,3-Dichloropropene	ug/kg	ND	1110	1040	94	43-146	
Trichloroethene	ug/kg	ND	1110	1270	115	30-150	
Trichlorofluoromethane	ug/kg	ND	1110	1550	140	30-150	
Vinyl chloride	ug/kg	ND	1110	1320	119	45-142	
Xylene (Total)	ug/kg	ND	3330	3490	105	43-150	
1,2-Dichloroethane-d4 (S)	%				113	67-125	
4-Bromofluorobenzene (S)	%				113	75-132	
Dibromofluoromethane (S)	%				113	69-127	
Toluene-d8 (S)	%				111	75-144	

SAMPLE DUPLICATE: 851680

Parameter	Units	10137666002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	ND		30	
1,1,1-Trichloroethane	ug/kg	ND	ND		30	
1,1,2,2-Tetrachloroethane	ug/kg	ND	ND		30	
1,1,2-Trichloroethane	ug/kg	ND	ND		30	
1,1,2-Trichlorotrifluoroethane	ug/kg	ND	ND		30	

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QUALITY CONTROL DATA

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

SAMPLE DUPLICATE: 851680

Parameter	Units	10137666002 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1-Dichloroethane	ug/kg	ND	ND		30	
1,1-Dichloroethene	ug/kg	ND	ND		30	
1,1-Dichloropropene	ug/kg	ND	ND		30	
1,2,3-Trichlorobenzene	ug/kg	ND	ND		30	
1,2,3-Trichloropropane	ug/kg	ND	ND		30	
1,2,4-Trichlorobenzene	ug/kg	ND	ND		30	
1,2,4-Trimethylbenzene	ug/kg	ND	ND		30	
1,2-Dibromo-3-chloropropane	ug/kg	ND	ND		30	
1,2-Dibromoethane (EDB)	ug/kg	ND	ND		30	
1,2-Dichlorobenzene	ug/kg	ND	ND		30	
1,2-Dichloroethane	ug/kg	ND	ND		30	
1,2-Dichloropropane	ug/kg	ND	ND		30	
1,3,5-Trimethylbenzene	ug/kg	ND	ND		30	
1,3-Dichlorobenzene	ug/kg	ND	ND		30	
1,3-Dichloropropane	ug/kg	ND	ND		30	
1,4-Dichlorobenzene	ug/kg	ND	ND		30	
2,2-Dichloropropane	ug/kg	ND	ND		30	
2-Butanone (MEK)	ug/kg	ND	ND		30	
2-Chlorotoluene	ug/kg	ND	ND		30	
4-Chlorotoluene	ug/kg	ND	ND		30	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	ND		30	
Acetone	ug/kg	ND	ND		30	
Allyl chloride	ug/kg	ND	ND		30	
Benzene	ug/kg	ND	ND		30	
Bromobenzene	ug/kg	ND	ND		30	
Bromochloromethane	ug/kg	ND	ND		30	
Bromodichloromethane	ug/kg	ND	ND		30	
Bromoform	ug/kg	ND	ND		30	
Bromomethane	ug/kg	ND	ND		30	
Carbon tetrachloride	ug/kg	ND	ND		30	
Chlorobenzene	ug/kg	ND	ND		30	
Chloroethane	ug/kg	ND	ND		30	
Chloroform	ug/kg	ND	ND		30	
Chloromethane	ug/kg	ND	ND		30	
cis-1,2-Dichloroethene	ug/kg	ND	ND		30	
cis-1,3-Dichloropropene	ug/kg	ND	ND		30	
Dibromochloromethane	ug/kg	ND	ND		30	
Dibromomethane	ug/kg	ND	ND		30	
Dichlorodifluoromethane	ug/kg	ND	ND		30	
Dichlorofluoromethane	ug/kg	ND	ND		30	
Diethyl ether (Ethyl ether)	ug/kg	ND	ND		30	
Ethylbenzene	ug/kg	ND	ND		30	
Hexachloro-1,3-butadiene	ug/kg	ND	ND		30	
Isopropylbenzene (Cumene)	ug/kg	ND	ND		30	
Methyl-tert-butyl ether	ug/kg	ND	ND		30	
Methylene Chloride	ug/kg	ND	ND		30	
n-Butylbenzene	ug/kg	ND	ND		30	
n-Propylbenzene	ug/kg	ND	ND		30	

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QUALITY CONTROL DATA

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

SAMPLE DUPLICATE: 851680

Parameter	Units	10137666002 Result	Dup Result	RPD	Max RPD	Qualifiers
Naphthalene	ug/kg	ND	ND		30	
p-Isopropyltoluene	ug/kg	ND	ND		30	
sec-Butylbenzene	ug/kg	ND	ND		30	
Styrene	ug/kg	ND	ND		30	
tert-Butylbenzene	ug/kg	ND	ND		30	
Tetrachloroethene	ug/kg	ND	ND		30	
Tetrahydrofuran	ug/kg	ND	ND		30	
Toluene	ug/kg	ND	ND		30	
trans-1,2-Dichloroethene	ug/kg	ND	ND		30	
trans-1,3-Dichloropropene	ug/kg	ND	ND		30	
Trichloroethene	ug/kg	ND	ND		30	
Trichlorofluoromethane	ug/kg	ND	ND		30	
Vinyl chloride	ug/kg	ND	ND		30	
Xylene (Total)	ug/kg	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	119	110	7		
4-Bromofluorobenzene (S)	%	111	101	9		
Dibromofluoromethane (S)	%	116	111	4		
Toluene-d8 (S)	%	109	103	5		

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QUALIFIERS

Project: 37914 Former Scherer Bros.
Pace Project No.: 10137689

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

WORKORDER QUALIFIERS

WO: 10137689

[1]	The samples were received outside of required temperature range. Analysis was completed upon client approval.

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
D4	Sample was diluted due to the presence of high levels of target analytes.
D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
L3	Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
P3	Sample extract could not be concentrated to the routine final volume, resulting in elevated reporting limits.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.
S5	Surrogate recovery outside control limits due to matrix interferences (not confirmed by re-analysis).

Pace Analytical
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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10137689

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Peer Engineering	Report To:	Becca Reason	Attention:	Becca Reason
Address:	7615 Golden Triangle Drive	Copy To:		Company Name:	Peer Engineering
	Eden Prairie, MN 55344			Address:	7615 Golden Triangle Drive, Eden Prairie, M
Email To:	breason@peerengineering.com	Purchase Order No.		Pace Quote Reference:	
Phone:	(952) 697-0563 Fax:	Client Project ID:	Former Scherer Bros. Property	Pace Project Manager:	Anderson, Diane
Requested Due Date/TAT:	10 Day (Default)	Container Order Number:	37914	Pace Profile #:	

Regulatory Agency

State / Location: Minnesota

Requested Analysis Filtered (Y/N)

ITEM#	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	PAHs	RCRA Metals	VOCs	DRO	Residual Chlorine (Y/N)	
1	SP-1 (3-4')			9/8/2010					5	3						2			X	X	X			001
2	SP-2 (0.5-5')			9/8/2010					3	3									X	X				002
3	SP-3 (0.5-2')			9/8/2010					5	3						2			X	X	X			003
4	SP-4 (0.5-2')			9/8/2010					3	3									X	X				004
5	SP-5 (0.5-4')			9/8/2010					5	3						2			X	X	X			005
6	SP-6 (0.5-4')			9/8/2010					3	3									X	X				006
7	SP-6 (4-7')			9/8/2010					3	3									X	X				007
8	SP-7 (0.5-2')			9/8/2010					3	3									X	X				008
9	SP-8 (3.5-5.5')			9/8/2010					3	3									X	X				009
10	SP-9 (0.5-4')			9/8/2010					3	3									X	X				010
11	SP-10 (4-8')			9/8/2010					2	2										X				011
12	SP-11 (0.5-4')			9/8/2010					3	3									X	X				012

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
2 coolers	[signature]	9/9/10	2:00	[signature] Pace	9/9/10	1610	7.6	Y	N	Y
							7.4			

SAMPLER NAME AND SIGNATURE			
PRINT Name of SAMPLER:	Becca Reason		
SIGNATURE of SAMPLER:	[signature]	DATE Signed:	9/8/10

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10137689

Page : 2 Of 2

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Peer Engineering	Report To:	Becca Reason	Attention:	Becca Reason
Address:	7615 Golden Triangle Drive	Copy To:		Company Name:	Peer Engineering
	Eden Prairie, MN 55344			Address:	7615 Golden Triangle Drive, Eden Prairie,
Email To:	breason@peerengineering.com	Purchase Order No.		Pace Quote Reference:	
Phone:	(952) 697-0563 Fax:	Client Project ID:	Former Scherer Bros. Property	Pace Project Manager:	Anderson, Diane
Requested Due Date/TAT:	10 Day (Default)	Container Order Number:		Pace Profile #:	

Regulatory Agency

State / Location: Minnesota

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N)

ITEM#	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	PAHs	RCRA Metals	VOCs	DRO	Residual Chlorine (Y/N)	
1	SP-11 (4-8')	SL		9/8/2010					2	2										X				013
2	SP-12 (0.5-4')	SL		9/8/2010					5	5									X	X		X		014
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE		SAMPLE CONDITIONS			
2 coolers	[signature] - Peer	9/9/10	2500	[signature] Peer	9/9/10	1610	7.6 7.9	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Becca Reason

SIGNATURE of SAMPLER: [signature] DATE Signed: 9/8/10

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Sample Condition Upon Receipt

Pace Analytical

Client Name: PEER Eng **Project #** 10137684

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☑ Commercial ☐ Pace Other _____

Tracking #: _____

Optional: Proj. Due Date: Proj. Name:

Custody Seal on Cooler/Box Present: ☐ yes ☑ no **Seals Intact:** ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____ **Temp Blank:** Yes ✓ No _____

Thermometer Used 80344042 or 179425 **Type of Ice:** Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 7.6, 7.4 **Biological Tissue is Frozen:** Yes No

Temp should be above freezing to 6°C **Comments:**

Date and Initials of person examining contents: 9/9/10 BS

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: SL		
All containers needing acid/base preservation have been checked. Noncompliance are noted in 13.	☐Yes ☐No ☑N/A	13. ☐ HNO3 ☐ H2SO4 ☐ NaOH ☐ HCl
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	Samp #
Exceptions: VOA,Coliform, TOC, Oil and Grease, WI-DRO (water)	☐Yes ☑No	Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.
Trip Blank Present:	☑Yes ☐No ☐N/A	16. 1 SL TB
Trip Blank Custody Seals Present	☑Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased): 062110-3		

Client Notification/ Resolution: **Field Data Required?** Y / N

Person Contacted: Becca Reason **Date/Time:** 9/10/10 e-mail

Comments/ Resolution: Re: Temp - Rec'd OK to continue on 9/10 9:20 AM e-mail

Project Manager Review: Diane J Anderson **Date:** 9/10/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR.

Pace Analytical Services, Inc.
1700 Elm Street SE, Suite 200, Minneapolis, MN 55414