City of Rochester

Office of the Commissioner
Department of Environmental Services
City Hall Room 300B, 30 Church Street
Rochester, New York 14614-1290
www.cityofrochester.gov

Division of
Environmental Quality

March 25, 2013

NYSDEC Region 8
6274 East Avon-Lima Road
Avon, New York 14414
Attn: Mr. Mike Zamiarski

Re: 62-64 Scio Street Brownfield Cleanup
USEPA Assistance ID No. BF97219700
NYSDEC Spill No. 0650898
Soil Source Removal Remedial Action Report

Dear Mike:

The following is a summary of the Soil Source Removal Remedial Actions which took place at the above referenced Site between August and October 2012. Remedial activities were conducted in accordance with the USEPA Cooperative Agreement No. BF97219700 and the approved Corrective Action Plan dated July 2012.

A 22,000 square foot, two-story, brick building formerly occupied the Site which was mainly used as warehouse/cold storage space until approximately 1990. The City took ownership of the property in 1996, at which time the building was demolished. Subsurface soil and groundwater contamination was later discovered associated with two (2) abandoned underground storage tanks at the Site. The tanks were removed in 2006 and the Site has remained vacant. The Project is being performed as part of the City's 2010 Brownfield Cleanup Grant from the United States Environmental Protection Agency (EPA).

The City, Lu Engineers and Op-Tech personnel mobilized to the Site on August 13, 2012 to prepare the Site for soil source removal activities. Site preparation tasks included:

- Installation of temporary fencing around the Site perimeter and excavation/work areas;
- Activation of water services from a nearby fire hydrant under a City water permit;
- Notification to Dig Safe of New York to identify all known utilities within the construction area;
- Mobilization of necessary excavation equipment, secure storage and sanitary facilities, dewatering equipment, vibratory compaction and other project related equipment;
- Location and preparation of clean and contaminated soil staging areas, and construction of a vehicle decontamination pad; and
- Mapping of property lines, known utilities, work area perimeters, landmarks and proposed excavation limits using a hand-held Geo-XT GPS unit. Figure 1 illustrates the Soil Source Removal Action Site Layout, and the estimated soil source removal excavation limits.

Excavation of clean overburden and contaminated source soils commenced on August 14, 2013 and was completed on August 25, 2012. Health and Safety protocols were followed and continuous air monitoring for particulates and volatile organic compounds (VOCs) was performed during all soil excavation activities. In the event that VOC or particulate levels became sufficiently elevated, vapor and/or dust suppression compounds such as BioSolve® or water, respectively, were applied to soils to mitigate potential adverse environmental or health impacts.

Prior investigation results indicated that clean overburden soils were present from the ground surface to approximately 6 feet below ground surface (bgs). All excavated materials were field screened with a photo-ionization detector (PID). Uncontaminated overburden soils exhibiting PID readings between 0 and 25 parts per million (ppm) were excavated and staged for on-Site re-use on 6-mil polyethylene sheeting to avoid cross-contamination with other waste streams. Polyethylene sheeting (6-mil) was also used to cover any staged soils to protect from weather, and erosion. Soils exhibiting headspace readings between 25 and 100 ppm were staged separately, on 6 mil polyethylene sheeting, and sampled in accordance with NYSDEC CP-51 to determine if soils were suitable for backfill or required proper disposal.

Soils exhibiting headspace readings of greater than 100 ppm were excavated and "live-loaded" into appropriately permitted trucks for disposal at Waste Management of New York. Excavation sidewall soils were screened with a PID to determine the maximum extent of required soil removal. Excavation bottoms were screened where the excavation did not extend into bedrock. Prior to departing the Site, all vehicles were broom-cleaned to prevent tracking impacted soils off-site. Vehicles also passed through a decontamination station and were sprayed down to remove excess soil from vehicles prior to departure. The decontamination station was designed to include a shallow basin large enough to contain the full footprint of the trucks being used for waste hauling. The basin was lined with sand, and heavy gauge HDPE to ensure that decontamination rinseate liquids did not impact the ground surface. A wastewater sump was installed to capture decontamination rinseate for proper profiling and, if necessary, disposal. However, accumulated rinseate evaporated before it could be containerized.

Clean overburden and contaminated soils were excavated to the approximate property lines along the north, east and south sides of the Site. The eastern side of the site was confined by the Matthews Street right-of-way. An approximately four (4) to six (6) foot thick seam of contaminated soil was encountered across the excavation beginning at approximately six (6) feet bgs and extending to bedrock which was encountered at approximately twelve (12) feet bgs. Groundwater was not encountered in the excavation. The western excavation continued to the approximate proposed excavation limits. During excavation of contaminated soils, a 3 % solution of BioSolve® was sprayed onto the sidewalls and bottom of the excavation. In addition, approximately 90 pounds of Regenesis® ORC Advance was applied to the excavation sidewalls and bottom to promote bio-degredation of residual petroleum contaminants.

A total of 1,400 tons of petroleum contaminated soils were removed from the Site and transported to Mill Seat Landfill for proper disposal. Prior to backfilling, PID headspace screening of sidewall soils was completed in order to determine if Soil Cleanup Objectives

(SCOs) and the excavation limits had been reached. Ten (10) Confirmatory Sidewall (CS) soil samples were collected at approximately 30 linear foot (LF) intervals in accordance with NYSDEC CP-51 guidelines. Samples were submitted to Paradigm Environmental Services, Inc. (ELAP Number 10958) and analyzed for Volatile Organic Compounds (VOCs) by EPA Method 8260 STARS and Semi-Volatile Organic Compounds (SVOCs) by EPA Method 8270 B/Ns Only. The clean overburden soil and an additional 542 tons of approved imported fill were backfilled into the excavation, compacted in approximately 2 foot lifts using the excavator and the Site was restored to its original grade. Figure 2 illustrates the limits of the excavation and the excavation cell sequence.

Analytical results from the Confirmatory Sidewall samples indicated that residual petroleum contamination, above state regulatory limits for Residential and Restricted-Residential SCOs, was present along the southern (CS-3 and CS-5), and northeastern (CS-4) property boundaries at depths ranging from approximately 8 to 12 feet below ground surface. All other samples exhibited contaminant concentrations below Residential SCOs. Table 1 provides a summary of the laboratory analytical results of the Confirmatory Sidewall samples. Figure 3 illustrates the CS sample locations, approximate depths to samples and the total VOC concentrations detected.

Contamination at CS-04 appears to be a localized seam extending under the asphalt paved parking lot of the northern adjacent property. Samples CS-06 and CS-01, located approximately 30 LF west and east of CS-04, respectively, exhibited contaminant concentrations below Residential SCOs. The contamination is present at an approximate depth of 10 feet bgs. and is not in the immediate vicinity of any structures where indoor vapor intrusion would be encountered. The City intends to design and install an Oxygen Injection system at the Site in order to address residual contaminants in the bedrock, groundwater and saturated zone. A more concentrated array of injection points in the area of CS-04 will be included as part of the design and no further excavation is considered necessary at this time.

The extent of the contamination into the neighboring property to the south (Speedy's Cleaners) appears to be of a greater magnitude than that on the northern portion of the Site, and has not been fully delineated. Several factors complicate further excavation into the neighboring property including: the presence of active underground utilities, an established tree-line; and gaining access to perform work on the adjoining property. The contamination present under the existing asphalt paved parking lot does not appear to be impacting indoor air quality at the adjacent building. However, it is possible that a sufficient volume of contaminated material exists, that without removal or in-situ treatment, could adversely affect the efficiency with which the Oxygen Injection system would be able to remediate residual contaminants in the soil and groundwater at the Site.

At this time, the City is negotiating with the Speedy's Cleaners' property owner in order to gain access to advance additional soil borings within the parking lot in order to fully delineate and properly address the source of contamination. If property access is granted, at least two (2) additional soil borings will be advanced, soil and/ or groundwater samples will be collected and analyzed and based on the results, the City will implement an appropriate remediation strategy that will address contaminants both on and off-Site. If property access is not granted, the City

proposes to install at least one (1) sentry monitoring well in the Matthews Street right-of-way in order to evaluate groundwater conditions and the effectiveness of the Oxygen Injection system.

Please review the enclosed documentation and feel free to contact me at 585.428.7892 or via e-mail at forbesj@cityofrochester.gov if you have any questions.

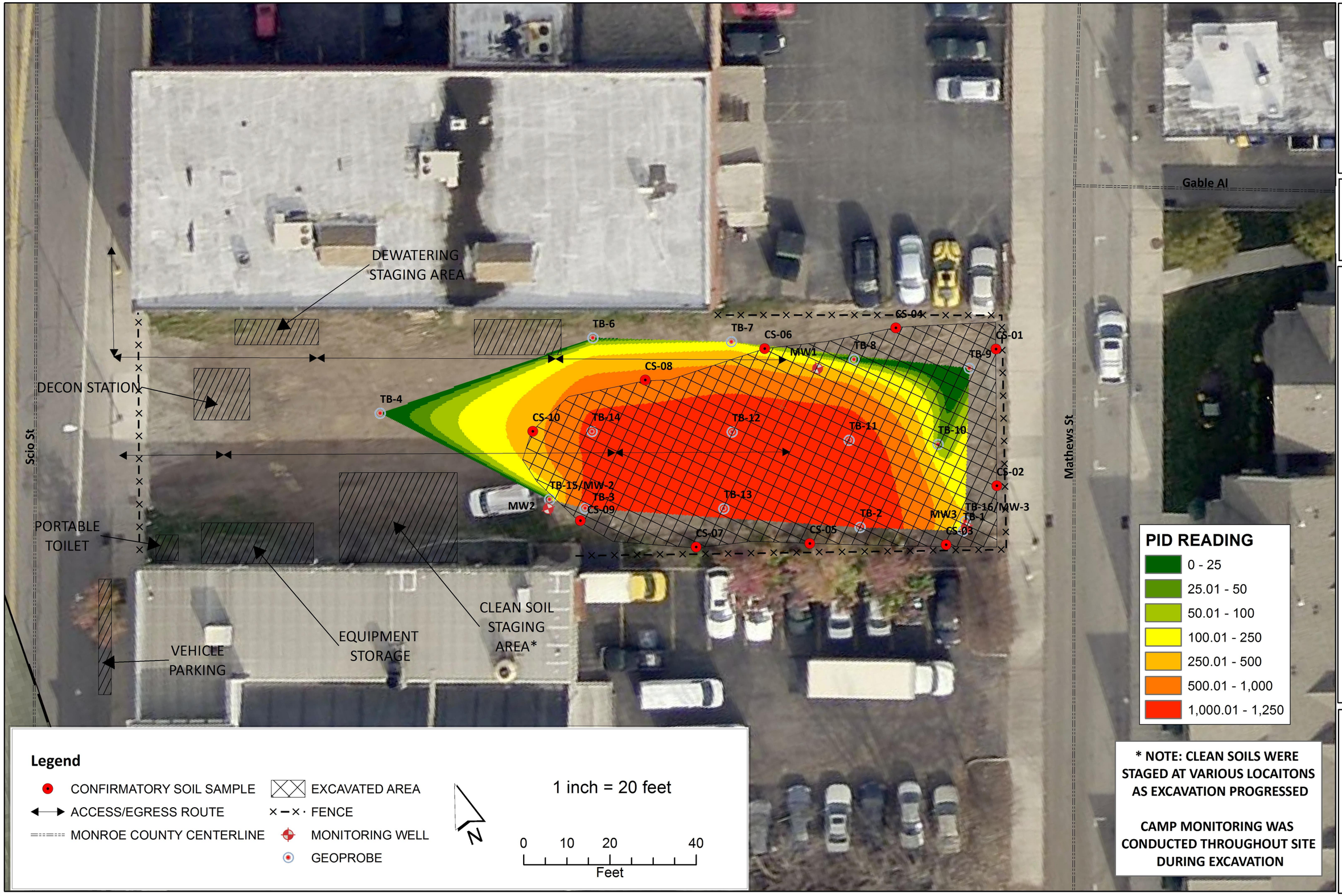
Sincerely,

Jane MH Forbes
Environmental Specialist
City of Rochester – DEQ

cc: V. Brawn –City of Rochester DEQ
File

Enclosures

G:\ENVQUAL\JANE\JOBS\Scio Street Cleanup_EPA2011\SOURCE REMOVAL Remedial Action Report 3-22-2013.docx



* NOTE: CLEAN SOILS WERE STAGED AT VARIOUS LOCAITONS AS EXCAVATION PROGRESSED

CAMP MONITORING WAS CONDUCTED THROUGHOUT SITE DURING EXCAVATION

DATE: MARCH 2013
SCALE:1 inch= 20 feet
DRAWN/CHECKED: GLA/CAC/JSB/SMK
DATA SOURCE: PICTOMETRY

FIGURE 2
BROWNFIELD SITE CLEAN-UP
ROCHESTER, NY

Lu Engineers

DATE: MARCH 2013
SCALE:1 inch= 20 feet
DRAWN/CHECKED: GLA/CAC/JSB/SMK
DATA SOURCE: PICTOMETRY

CITY OF ROCHESTER · FLOWER CITY · N.Y.

FIGURE 1
BROWNFIELD SITE CLEAN-UP
ROCHESTER, NY

Lu Engineers

Scio Steet BCP Project-Confirmatory Soil Sample Analytical Results

Detected Parameters	Unrestricted Use[3]	Residential Use[4]	Restricted-Residential Use[4]	Commercial Use[4]	Industrial Use[4]	CS-01(8)_08-14-12	CS-02(8.5)_08-15-12	CS-03(9)_08-16-12	CS-03(9)Dup_08-16-12	CS-04(10)_08-17-12	CS-05(10)_08-17-12	CS-06(10)_08-21-12	CS-07(11)_08-21-12	CS-08(13)_08-23-12	CS-09(11.5)_08-23-12	CS-10(13)_08-23-12
					Date Sampled:	8/14/12	8/15/12	8/16/12	8/16/12	8/17/12	8/17/12	8/21/12	8/21/12	8/23/12	8/23/12	8/23/12
Volatile Organics - NYSDEC STARS 8021[1]																
1,2,4-Trimethylbenzene	3,600	47,000	52,000	190,000	380,000	5,440	5,330	50,200	64,000	55,800	97,000	14,600	21,800	333	ND	ND
1,3,5-Trimethylbenzene	8,400	47,000	52,000	190,000	380,000	1,290	1,680	14,600	20,600	18,100	26,200	4,570	6,620	82	ND	ND
Acetone	50	100,000	100,000	500,000	1,000,000	ND	ND	ND	ND	ND	ND	B 5,250	B 7,950	154	B 338	B 64.1
Carbon disulfide	NL	NL	NL	NL	NL	ND	ND	ND	ND	ND	ND	ND	ND	J 2.83	ND	ND
Ethylbenzene	1,000	30,000	41,000	390,000	780,000	J 283	638	5,900	17,600	10,300	18,500	3,150	2,120	16.7	ND	ND
Isopropylbenzene	NL	NL	NL	NL	NL	J 230	J 192	J 2,280	3,150	2,830	3,950	677	842	23.2	ND	ND
2-Methylnapthalene	NL	NL	NL	NL	NL	642	1,770	5,040	ND	3,610	13,600	J 282	2,020	ND	ND	ND
Methylene Chloride	50	51,000	100,000	500,000	1,000,000	877	J 537	ND	ND	ND	ND	ND	B 2,240	ND	ND	ND
n-Butylbenzene	12,000	100,000	100,000	500,000	1,000,000	945	701	ND	ND	ND	ND	1,660	2,410	120	76.8	ND
n-Propylbenzene	3,900	100,000	100,000	500,000	1,000,000	986	671	7,740	10,200	9,230	13,900	2,210	2,990	92	73.6	ND
sec-Butylbenzene	11,000	100,000	100,000	500,000	1,000,000	J 235	ND	ND	ND	ND	J 1,990	J 286	J 384	34.9	101	ND
Toluene	700	100,000	100,000	500,000	1,000,000	ND	ND	ND	7,890	ND	J 1,350	J 221	ND	ND	ND	ND
p-Isopropyltoluene	NL	NL	NL	NL	NL	ND	ND	ND	ND	ND	J 1,880	J 293	J 395	ND	ND	ND
m,p-Xylene	NL	NL	NL	NL	NL	668	2,190	21,300	70,000	46,500	72,900	17,200	9,430	87.9	ND	ND
o-Xylene	NL	NL	NL	NL	NL	ND	599	2,520	11,500	11,400	10,600	1,000	555	17.7	ND	ND
Xylene (Total)	260	100,000	100,000	500,000	1,000,000	668	2,858	23,820	81,500	57900	83,500	18200	9985	105.6	ND	ND
Semi-Volatile Organics - NYSDEC STARS 8270 Base/Neutrals[1]																
Fluoranthene	100,000	100,000	100,000	500,000	1,000,000	ND	ND	ND	ND	J 185	ND	ND	ND	ND	ND	ND
2-Methylnapthalene	NL	NL	NL	NL	NL	642	1,770	5,040	5,550	3,610	13,600	J 282	2,020	ND	ND	ND
Naphthalene	12,000	100,000	100,000	500,000	1,000,000	ND	1,040	3,420	4,730	3,010	13,000	J 218	2,030	ND	ND	ND
Phenanthrene	100,000	100,000	100,000	500,000	1,000,000	ND	ND	ND	ND	J 188	ND	ND	ND	ND	ND	ND

1 - results presented in micrograms per kilogram (ug/Kg).

2 - results presented in milligrams per kilogram (mg/Kg).

3 - 6 NYCRR Part 375-6.8 - Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

4 - 6 NYCRR Part 375-6.8 - Table 375-6.8(b): Restricted Use Soil Cleanup Objectives

ND- not detected above reporting limit

NL - Not listed as contaminant of concern in 6 NYCRR Part 375-6.8 - Tables 375-6.8(a)&(b)

Value Exceeds Unrestricted SCOs

Value Exceeds Residential Use SCOs

Value Exceeds Restricted-Residential SCOs

Value Exceeds Commercial Use SCOs

Value Exceeds Industrial Use SCOs

Lu Engineers
ENVIRONMENTAL • TRANSPORTATION • CIVIL

FIGURE 3
CONFIRMATORY SAMPLE LOCATION & CONTAMINANT LEVEL MAP
SCIO ST. BCP SITE
ROCHESTER, NY

DATE: MARCH 2013
SCALE: 1 inch= 20 feet
DRAWN/CHECKED: ED/SMK
DATA SOURCE: PICTOMETRY

PARADIGM ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for Soils/Solids/Sludges (B/N Fraction)

Client: Lu Engineers, Inc

Client Job Site:	Scio St. Brownfields Cleanup Program Site-Soil Removal	**Lab Project Number:**	12:3400
		Lab Sample Number:	12:3400-01
Client Job Number:	4226		
Field Location:	CS-01(8)_08-14-12	**Date Sampled:**	08/14/2012
Field ID Number:	N/A	**Date Received:**	08/14/2012
Sample Type:	Soil	**Date Analyzed:**	08/16/2012

Base / Neutrals	Results in ug / Kg	Base / Neutrals	Results in ug / Kg
Acenaphthene	< 352	Dibenz (a,h) anthracene	< 352
Anthracene	< 352	Fluoranthene	< 352
Benzo (a) anthracene	< 352	Fluorene	< 352
Benzo (a) pyrene	< 352	Indeno (1,2,3-cd) pyrene	< 352
Benzo (b) fluoranthene	< 352	Naphthalene	< 352
Benzo (g,h,i) perylene	< 352	Phenanthrene	< 352
Benzo (k) fluoranthene	< 352	Pyrene	< 352
Chrysene	< 352	Acenaphthylene	< 352
Diethyl phthalate	< 352	1,2-Dichlorobenzene	< 352
Dimethyl phthalate	< 879	1,3-Dichlorobenzene	< 352
Butylbenzylphthalate	< 352	1,4-Dichlorobenzene	< 352
Di-n-butyl phthalate	< 352	1,2,4-Trichlorobenzene	< 352
Di-n-octylphthalate	< 352	Nitrobenzene	< 352
Bis (2-ethylhexyl) phthalate	< 352	2,4-Dinitrotoluene	< 352
2-Chloronaphthalene	< 352	2,6-Dinitrotoluene	< 352
Hexachlorobenzene	< 352	Bis (2-chloroethyl) ether	< 352
Hexachloroethane	< 352	Bis (2-chloroisopropyl) ether	< 352
Hexachlorocyclopentadiene	< 352	Bis (2-chloroethoxy) methane	< 352
Hexachlorobutadiene	< 352	4-Bromophenyl phenyl ether	< 352
N-Nitroso-di-n-propylamine	< 352	4-Chlorophenyl phenyl ether	< 352
N-Nitrosodiphenylamine	< 352	Benzidine	< 879
N-Nitrosodimethylamine	< 352	3,3'-Dichlorobenzidine	< 352
Isophorone	< 352	4-Chloroaniline	< 352
Benzyl alcohol	< 879	2-Nitroaniline	< 879
Dibenzofuran	< 352	3-Nitroaniline	< 879
2-Methylnapthalene	642	4-Nitroaniline	< 879

ELAP Number 10958 Analytical Method: EPA 8270C Data File: S64751.D

Prep Method: EPA 3550C

Comments: ug / Kg = microgram per Kilogram

Signature: _____

Bruce Hoogesteger: Technical Director

123400S1.XLS

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges

Client: Lu Engineers, Inc.

Client Job Site:	Scio St. Brownfields Cleanup Program Site-Soil Removal	**Lab Project Number:**	12:3400
		Lab Sample Number:	12:3400-01
Client Job Number:	4226		
Field Location:	CS-01 (8)_08-14-12	**Date Sampled:**	08/14/2012
Field ID Number:	N/A	**Date Received:**	08/14/2012
Sample Type:	Soil	**Date Analyzed:**	08/22/2012

Halocarbons	Results in ug / Kg
Bromodichloromethane	< 405
Bromomethane	< 405
Bromoform	< 1,010
Carbon Tetrachloride	< 405
Chloroethane	< 405
Chloromethane	< 405
2-Chloroethyl vinyl Ether	< 2,020
Chloroform	< 405
Dibromochloromethane	< 405
1,1-Dichloroethane	< 405
1,2-Dichloroethane	< 405
1,1-Dichloroethene	< 405
cis-1,2-Dichloroethene	< 405
trans-1,2-Dichloroethene	< 405
1,2-Dichloropropane	< 405
cis-1,3-Dichloropropene	< 405
trans-1,3-Dichloropropene	< 405
Methylene chloride	J 877
1,1,2,2-Tetrachloroethane	< 405
Tetrachloroethene	< 405
1,1,1-Trichloroethane	< 405
1,1,2-Trichloroethane	< 405
Trichloroethene	< 405
Trichlorofluoromethane	< 405
Vinyl chloride	< 405

Aromatics	Results in ug / Kg
Benzene	< 405
Chlorobenzene	< 405
Ethylbenzene	J 283
Toluene	< 405
m,p-Xylene	668
o-Xylene	< 405
Styrene	< 1,010
1,2-Dichlorobenzene	< 405
1,3-Dichlorobenzene	< 405
1,4-Dichlorobenzene	< 405

Ketones	Results in ug / Kg
Acetone	< 2,020
2-Butanone	< 2,020
2-Hexanone	< 1,010
4-Methyl-2-pentanone	< 1,010

Miscellaneous	Results in ug / Kg
Carbon disulfide	< 405
Vinyl acetate	< 1,010

ELAP Number 10958 Analytical Method: EPA 8260B Data File: V99805.D

Prep Method: EPA 5035A

Comments: ug / Kg = microgram per Kilogram

Signature: _____

Bruce Hoogesteger, Technical Director

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges (Additional STARS Compounds)

Client: **Lu Engineers, Inc.**

Client Job Site:	Scio St. Brownfields Cleanup Program Site-Soil Removal	**Lab Project Number:**	12:3400
		Lab Sample Number:	12:3400-01
Client Job Number:	4226		
Field Location:	CS-01 (8)_08-14-12	**Date Sampled:**	08/14/2012
Field ID Number:	N/A	**Date Received:**	08/14/2012
Sample Type:	Soil	**Date Analyzed:**	08/22/2012

Compound	Results in ug / Kg	Compound	Results in ug / Kg
n-Butylbenzene	945	1,2,4-Trimethylbenzene	5,440
sec-Butylbenzene	J 235	1,3,5-Trimethylbenzene	1,290
tert-Butylbenzene	< 405		
n-Propylbenzene	986	**Miscellaneous**	
Isopropylbenzene	J 230	Methyl tert-butyl Ether	< 405
p-Isopropyltoluene	< 405		
Naphthalene	< 1,010		

ELAP Number 10958 Analytical Method: EPA 8260B Data File: V99805.D

Prep Method: EPA 5035A

Comments: ug / Kg = microgram per Kilogram

Signature: _____

Bruce Hoogesteger: Technical Director

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt.

PARADIGM ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue
Rochester, NY 14608
(585) 647-2530 • (800) 724-1997
FAX: (585) 647-3311

CHAIN OF CUSTODY

REPORT TO:

COMPANY: Lu Eng.
ADDRESS: 175 Sully's Trail Suite 202
CITY: Pittsford STATE: NY ZIP: 14534
PHONE: 385-7417 FAX:
ATTN: Eric Detweiler / Greg Andrus

INVOICE TO:

COMPANY: SAME
ADDRESS:
CITY: STATE: ZIP:
PHONE: FAX:
ATTN:

LAB PROJECT #: 12:3400
CLIENT PROJECT #: 4226

TURNAROUND TIME: (WORKING DAYS): 1 [ ] 2 [ ] 3 [ ] STD 5 [ ] OTHER 10 [X]

QUOTE #: MS072412B

PROJECT NAME/SITE NAME: Scio St. Brownfields Cleanup Program Site - Soil Removal

COMMENTS: email results to: E. Detweiler, Greg Andrus, Jane Forbes *NW/ Equis EDD, DO NOT NEED CAT B HARDCOPY, JUST ELECTRONIC

PO# 217989

REQUESTED ANALYSIS

DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	NUMBER CONTAINERS	TCL VOCs 8260 + STARS	SVOCs 8270 B/N									REMARKS	PARADIGM LAB SAMPLE NUMBER				
1 8/14/12	1:30	X		CS-01(8)_08-14-12	soil	1	X	X									PID readings to 800 ppm	0	1			
2																	* ASP w/ CAT B deliv. *					
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

LAB USE ONLY BELOW THIS LINE

Sample Condition: Per NELAC/ELAP 210/241/242/243/244

Receipt Parameter	NELAC Compliance	
Container Type:	Y [ ]	N [ ]
Comments:		
Preservation:	Y [ ]	N [ ]
Comments:		
Holding Time:	Y [ ]	N [ ]
Comments:		
Temperature:	Y [ ]	N [ ]
Comments: 3°C iced from temp blk 8/14 @ 1603		

Sample delivered by Lu so custody seals N/A. EAH 8/14

Eric Detweiler	8/14/12	Sampled By / Date/Time
Eric Detweiler	8/14/12 4:00	Relinquished By / Date/Time
[signature]	8/14/12 1600	Received By / Date/Time
Elizabeth A Honch	8/14/12 1633	Received @ Lab By / Date/Time

Total Cost:

P.I.F.

PARADIGM ENVIRONMENTAL SERVICES

Chain of Custody Supplement

Client: Lu

Completed by: 8/14/12

Lab Project ID: 12:3400

Date: EAH

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

NELAC compliance with the sample condition requirements upon receipt

Condition	Yes	No	N/A
Container Type	X	X for 5035 voa prep	
Comments			
Transferred to method-compliant container	X for voa prep		X
Headspace (<1 mL)			X
Comments			
Preservation			X
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X		
Comments	3°C iced from temp blk 8/14 @ 1603		
Sufficient Sample Quantity	X		
Comments			

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for Soils/Solids/Sludges (B/N Fraction)

Client: Lu Engineers, Inc

Client Job Site:	Scio St. BCP Site Soil Removal Phase	**Lab Project Number:**	12:3425
		Lab Sample Number:	12:3425-01
Client Job Number:	4226		
Field Location:	CS-02(8.5)_08-15-12	**Date Sampled:**	08/15/2012
Field ID Number:	N/A	**Date Received:**	08/15/2012
Sample Type:	Soil	**Date Analyzed:**	08/16/2012

Base / Neutrals	Results in ug / Kg	Base / Neutrals	Results in ug / Kg
Acenaphthene	< 323	Dibenz (a,h) anthracene	< 323
Anthracene	< 323	Fluoranthene	< 323
Benzo (a) anthracene	< 323	Fluorene	< 323
Benzo (a) pyrene	< 323	Indeno (1,2,3-cd) pyrene	< 323
Benzo (b) fluoranthene	< 323	Naphthalene	1,040
Benzo (g,h,i) perylene	< 323	Phenanthrene	< 323
Benzo (k) fluoranthene	< 323	Pyrene	< 323
Chrysene	< 323	Acenaphthylene	< 323
Diethyl phthalate	< 323	1,2-Dichlorobenzene	< 323
Dimethyl phthalate	< 808	1,3-Dichlorobenzene	< 323
Butylbenzylphthalate	< 323	1,4-Dichlorobenzene	< 323
Di-n-butyl phthalate	< 323	1,2,4-Trichlorobenzene	< 323
Di-n-octylphthalate	< 323	Nitrobenzene	< 323
Bis (2-ethylhexyl) phthalate	< 323	2,4-Dinitrotoluene	< 323
2-Chloronaphthalene	< 323	2,6-Dinitrotoluene	< 323
Hexachlorobenzene	< 323	Bis (2-chloroethyl) ether	< 323
Hexachloroethane	< 323	Bis (2-chloroisopropyl) ether	< 323
Hexachlorocyclopentadiene	< 323	Bis (2-chloroethoxy) methane	< 323
Hexachlorobutadiene	< 323	4-Bromophenyl phenyl ether	< 323
N-Nitroso-di-n-propylamine	< 323	4-Chlorophenyl phenyl ether	< 323
N-Nitrosodiphenylamine	< 323	Benzidine	< 808
N-Nitrosodimethylamine	< 323	3,3'-Dichlorobenzidine	< 323
Isophorone	< 323	4-Chloroaniline	< 323
Benzyl alcohol	< 808	2-Nitroaniline	< 808
Dibenzofuran	< 323	3-Nitroaniline	< 808
2-Methylnapthalene	1,770	4-Nitroaniline	< 808

ELAP Number 10958 Analytical Method: EPA 8270C Data File: S64752.D

Prep Method: EPA 3550C

Comments: ug / Kg = microgram per Kilogram

Signature:

Bruce Hoogesteger, Technical Director

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges

Client: Lu Engineers, Inc.

Client Job Site:	Scio St. BCP Site Soil Removal Phase	**Lab Project Number:**	12:3425
		Lab Sample Number:	12:3425-01
Client Job Number:	4226		
Field Location:	CS-02 (8.5)_08-15-12	**Date Sampled:**	08/15/2012
Field ID Number:	N/A	**Date Received:**	08/15/2012
Sample Type:	Soil	**Date Analyzed:**	08/22/2012

Halocarbons	Results in ug / Kg
Bromodichloromethane	< 295
Bromomethane	< 295
Bromoform	< 737
Carbon Tetrachloride	< 295
Chloroethane	< 295
Chloromethane	< 295
2-Chloroethyl vinyl Ether	< 1,470
Chloroform	< 295
Dibromochloromethane	< 295
1,1-Dichloroethane	< 295
1,2-Dichloroethane	< 295
1,1-Dichloroethene	< 295
cis-1,2-Dichloroethene	< 295
trans-1,2-Dichloroethene	< 295
1,2-Dichloropropane	< 295
cis-1,3-Dichloropropene	< 295
trans-1,3-Dichloropropene	< 295
Methylene chloride	J 537
1,1,2,2-Tetrachloroethane	< 295
Tetrachloroethene	< 295
1,1,1-Trichloroethane	< 295
1,1,2-Trichloroethane	< 295
Trichloroethene	< 295
Trichlorofluoromethane	< 295
Vinyl chloride	< 295

Aromatics	Results in ug / Kg
Benzene	< 295
Chlorobenzene	< 295
Ethylbenzene	638
Toluene	< 295
m,p-Xylene	2,190
o-Xylene	599
Styrene	< 737
1,2-Dichlorobenzene	< 295
1,3-Dichlorobenzene	< 295
1,4-Dichlorobenzene	< 295

Ketones	Results in ug / Kg
Acetone	< 1,470
2-Butanone	< 1,470
2-Hexanone	< 737
4-Methyl-2-pentanone	< 737

Miscellaneous	Results in ug / Kg
Carbon disulfide	< 295
Vinyl acetate	< 737

ELAP Number 10958

Analytical Method: EPA 8260B
Prep Method: EPA 5035A

Data File: V99806.D

Comments: ug / Kg = microgram per Kilogram

Signature: _____
Bruce Hoogesteger: Technical Director

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges (Additional STARS Compounds)

Client: **Lu Engineers, Inc.**

Client Job Site:	Scio St. BCP Site Soil Removal Phase	**Lab Project Number:**	12:3425
		Lab Sample Number:	12:3425-01
Client Job Number:	4226		
Field Location:	CS-02 (8.5)_08-15-12	**Date Sampled:**	08/15/2012
Field ID Number:	N/A	**Date Received:**	08/15/2012
Sample Type:	Soil	**Date Analyzed:**	08/22/2012

Compound	Results in ug / Kg	Compound	Results in ug / Kg
n-Butylbenzene	701	1,2,4-Trimethylbenzene	5,330
sec-Butylbenzene	< 295	1,3,5-Trimethylbenzene	1,680
tert-Butylbenzene	< 295		
n-Propylbenzene	671	**Miscellaneous**	
Isopropylbenzene	J 192	Methyl tert-butyl Ether	< 295
p-Isopropyltoluene	< 295		
Naphthalene	784		

ELAP Number 10958 Analytical Method: EPA 8260B Data File: V99806.D

Prep Method: EPA 5035A

Comments: ug / Kg = microgram per Kilogram

Signature: _____

Bruce Hoogesteger: Technical Director

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt.

PARADIGM ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue
Rochester, NY 14608
(585) 647-2530 • (800) 724-1997
FAX: (585) 647-3311

CHAIN OF CUSTODY

REPORT TO:

COMPANY: Lu Engineers
ADDRESS: 175 Sullys Trail, Suite 202
CITY: Pittsford STATE: NY ZIP: 14534
PHONE: 385-7417 FAX:
ATTN: Eric Detweiler/Greg Andrus

INVOICE TO:

COMPANY: SAME
ADDRESS:
CITY: STATE: ZIP:
PHONE: FAX:
ATTN:

LAB PROJECT #: 12:3425
CLIENT PROJECT #: 4226

TURNAROUND TIME: (WORKING DAYS) 10
STD: 1 [ ] 2 [ ] 3 [ ] 5 [ ] OTHER [X]

QUOTE #:

PROJECT NAME/SITE NAME: Scio St. BCP Site - Soil Removal Phase

COMMENTS: email results to: E. Detweiler/Greg Andrus/Jane Forbes * Equis EDD format DO NOT NEED Cat B hardcopy

REQUESTED ANALYSIS

	DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	NUMBER CONTAINERS	TCL VOCs 8260 + STARS	SVOCs 8270 B/N								REMARKS	PARADIGM LAB SAMPLE NUMBER				
1	8/15/12	11:55	X		CS-02(8.5)_08-15-12	soil	1	X	X								* PID readings to 1,600	0	1			
2																	ppm on sample					
3																	* ASP Cat B					
4																						
5																						
6																						
7																						
8																						
9																						
10																						

LAB USE ONLY BELOW THIS LINE

Sample Condition: Per NELAC/ELAP 210/241/242/243/244

Receipt Parameter	NELAC Compliance	
Container Type:	Y [ ]	N [ ]
Comments:		
Preservation:	Y [ ]	N [ ]
Comments:		
Holding Time:	Y [ ]	N [ ]
Comments:		
Temperature:	Y [ ]	N [ ]
Comments: 1°C iced @ 1605 8/15 - from sample		

Eric Detweiler 8/15/12
Sampled By Date/Time

Relinquished By 8/15/12 4:03
Date/Time

Received By 8/15/12 1603
Date/Time

Elizabeth A Honck 8/15/12 1631
Received @ Lab By Date/Time

Sample delivered by client so custody seals N/A

Total Cost: EAH 8/15

P.I.F. [ ]

Chain of Custody Supplement

Client: Lu

Completed by: EAH

Lab Project ID: 12:3425

Date: 8/27/12

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	NELAC compliance with the sample condition requirements upon receipt: Yes	No	N/A
Container Type	X	X for voa 5035 prep	
Comments			
Transferred to method-compliant container	X for voa 5035 prep		X
Headspace (<1 mL)			X
Comments			
Preservation			X
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X		
Comments	1°C iced @ 1605 8/15 from sample		
Sufficient Sample Quantity	X		
Comments			

PARADIGM
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for Soils/Solids/Sludges (B/N Fraction)

Client: Lu Engineers, Inc

Client Job Site:	Scio St. BCP Project Soil Removal Phase	**Lab Project Number:**	12:3445
		Lab Sample Number:	12:3445-01
Client Job Number:	4226		
Field Location:	CS-03(9)_08-16-12	**Date Sampled:**	08/16/2012
Field ID Number:	N/A	**Date Received:**	08/16/2012
Sample Type:	Soil	**Date Analyzed:**	08/17/2012

Base / Neutrals	Results in ug / Kg	Base / Neutrals	Results in ug / Kg
Acenaphthene	< 311	Dibenz (a,h) anthracene	< 311
Anthracene	< 311	Fluoranthene	< 311
Benzo (a) anthracene	< 311	Fluorene	< 311
Benzo (a) pyrene	< 311	Indeno (1,2,3-cd) pyrene	< 311
Benzo (b) fluoranthene	< 311	Naphthalene	3,420
Benzo (g,h,i) perylene	< 311	Phenanthrene	< 311
Benzo (k) fluoranthene	< 311	Pyrene	< 311
Chrysene	< 311	Acenaphthylene	< 311
Diethyl phthalate	< 311	1,2-Dichlorobenzene	< 311
Dimethyl phthalate	< 776	1,3-Dichlorobenzene	< 311
Butylbenzylphthalate	< 311	1,4-Dichlorobenzene	< 311
Di-n-butyl phthalate	< 311	1,2,4-Trichlorobenzene	< 311
Di-n-octylphthalate	< 311	Nitrobenzene	< 311
Bis (2-ethylhexyl) phthalate	< 311	2,4-Dinitrotoluene	< 311
2-Chloronaphthalene	< 311	2,6-Dinitrotoluene	< 311
Hexachlorobenzene	< 311	Bis (2-chloroethyl) ether	< 311
Hexachloroethane	< 311	Bis (2-chloroisopropyl) ether	< 311
Hexachlorocyclopentadiene	< 311	Bis (2-chloroethoxy) methane	< 311
Hexachlorobutadiene	< 311	4-Bromophenyl phenyl ether	< 311
N-Nitroso-di-n-propylamine	< 311	4-Chlorophenyl phenyl ether	< 311
N-Nitrosodiphenylamine	< 311	Benzidine	< 776
N-Nitrosodimethylamine	< 311	3,3'-Dichlorobenzidine	< 311
Isophorone	< 311	4-Chloroaniline	< 311
Benzyl alcohol	< 776	2-Nitroaniline	< 776
Dibenzofuran	< 311	3-Nitroaniline	< 776
2-Methylnapthalene	5,040	4-Nitroaniline	< 776

ELAP Number 10958 Analytical Method: EPA 8270C Data File: S64789.D
Prep Method: EPA 3550C

Comments: ug / Kg = microgram per Kilogram

Signature:
Bruce Hoogesteger: Technical Director

123445S1.XLS

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for Soils/Solids/Sludges (B/N Fraction)

Client: Lu Engineers, Inc

Client Job Site:	Scio St. BCP Project Soil Removal Phase	**Lab Project Number:**	12:3445
		Lab Sample Number:	12:3445-02
Client Job Number:	4226		
Field Location:	CS-03(9)Dup_08-16-12	**Date Sampled:**	08/16/2012
Field ID Number:	N/A	**Date Received:**	08/16/2012
Sample Type:	Soil	**Date Analyzed:**	08/27/2012

Base / Neutrals	Results in ug / Kg	Base / Neutrals	Results in ug / Kg
Acenaphthene	< 321	Dibenz (a,h) anthracene	< 321
Anthracene	< 321	Fluoranthene	< 321
Benzo (a) anthracene	< 321	Fluorene	< 321
Benzo (a) pyrene	< 321	Indeno (1,2,3-cd) pyrene	< 321
Benzo (b) fluoranthene	< 321	Naphthalene	4,730
Benzo (g,h,i) perylene	< 321	Phenanthrene	< 321
Benzo (k) fluoranthene	< 321	Pyrene	< 321
Chrysene	< 321	Acenaphthylene	< 321
Diethyl phthalate	< 321	1,2-Dichlorobenzene	< 321
Dimethyl phthalate	< 801	1,3-Dichlorobenzene	< 321
Butylbenzylphthalate	< 321	1,4-Dichlorobenzene	< 321
Di-n-butyl phthalate	< 321	1,2,4-Trichlorobenzene	< 321
Di-n-octylphthalate	< 321	Nitrobenzene	< 321
Bis (2-ethylhexyl) phthalate	< 321	2,4-Dinitrotoluene	< 321
2-Chloronaphthalene	< 321	2,6-Dinitrotoluene	< 321
Hexachlorobenzene	< 321	Bis (2-chloroethyl) ether	< 321
Hexachloroethane	< 321	Bis (2-chloroisopropyl) ether	< 321
Hexachlorocyclopentadiene	< 321	Bis (2-chloroethoxy) methane	< 321
Hexachlorobutadiene	< 321	4-Bromophenyl phenyl ether	< 321
N-Nitroso-di-n-propylamine	< 321	4-Chlorophenyl phenyl ether	< 321
N-Nitrosodiphenylamine	< 321	Benzidine	< 801
N-Nitrosodimethylamine	< 321	3,3'-Dichlorobenzidine	< 321
Isophorone	< 321	4-Chloroaniline	< 321
Benzyl alcohol	< 801	2-Nitroaniline	< 801
Dibenzofuran	< 321	3-Nitroaniline	< 801
2-Methylnapthalene	5,550	4-Nitroaniline	< 801

ELAP Number 10958 Analytical Method: EPA 8270C Data File: S64942.D
Prep Method: EPA 3550C

Comments: ug / Kg = microgram per Kilogram

Signature:
Bruce Hoogesteger: Technical Director

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges

Client: **Lu Engineers, Inc.**

Client Job Site:	Scio St. BCP Project; Soil Removal Phase	**Lab Project Number:**	12:3445
		Lab Sample Number:	12:3445-01
Client Job Number:	4226		
Field Location:	CS-03(9)_08-16-12	**Date Sampled:**	08/16/2012
Field ID Number:	N/A	**Date Received:**	08/16/2012
Sample Type:	Soil	**Date Analyzed:**	08/20/2012

Halocarbons	Results in ug / Kg
Bromodichloromethane	< 2,590
Bromomethane	< 2,590
Bromoform	< 6,490
Carbon Tetrachloride	< 2,590
Chloroethane	< 2,590
Chloromethane	< 2,590
2-Chloroethyl vinyl Ether	< 13,000
Chloroform	< 2,590
Dibromochloromethane	< 2,590
1,1-Dichloroethane	< 2,590
1,2-Dichloroethane	< 2,590
1,1-Dichloroethene	< 2,590
cis-1,2-Dichloroethene	< 2,590
trans-1,2-Dichloroethene	< 2,590
1,2-Dichloropropane	< 2,590
cis-1,3-Dichloropropene	< 2,590
trans-1,3-Dichloropropene	< 2,590
Methylene chloride	< 6,490
1,1,2,2-Tetrachloroethane	< 2,590
Tetrachloroethene	< 2,590
1,1,1-Trichloroethane	< 2,590
1,1,2-Trichloroethane	< 2,590
Trichloroethene	< 2,590
Trichlorofluoromethane	< 2,590
Vinyl chloride	< 2,590

Aromatics	Results in ug / Kg
Benzene	< 2,590
Chlorobenzene	< 2,590
Ethylbenzene	5,900
Toluene	< 2,590
m,p-Xylene	21,300
o-Xylene	J 2,520
Styrene	< 6,490
1,2-Dichlorobenzene	< 2,590
1,3-Dichlorobenzene	< 2,590
1,4-Dichlorobenzene	< 2,590

Ketones	Results in ug / Kg
Acetone	< 13,000
2-Butanone	< 13,000
2-Hexanone	< 6,490
4-Methyl-2-pentanone	< 6,490

Miscellaneous	Results in ug / Kg
Carbon disulfide	< 2,590
Vinyl acetate	< 6,490

ELAP Number 10958 Analytical Method: EPA 8260B Data File: V99718.D

Prep Method: EPA 5035A

Comments: ug / Kg = microgram per Kilogram

Signature: _____

Bruce Hoogesteger: Technical Director

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ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges (Additional STARS Compounds)

Client: Lu Engineers, Inc.

Client Job Site:	Scio St. BCP Project; Soil Removal Phase	**Lab Project Number:**	12:3445
		Lab Sample Number:	12:3445-01
Client Job Number:	4226		
Field Location:	CS-03(9)_08-16-12	**Date Sampled:**	08/16/2012
Field ID Number:	N/A	**Date Received:**	08/16/2012
Sample Type:	Soil	**Date Analyzed:**	08/20/2012

Compound	Results in ug / Kg	Compound	Results in ug / Kg
n-Butylbenzene	< 2,590	1,2,4-Trimethylbenzene	50,200
sec-Butylbenzene	< 2,590	1,3,5-Trimethylbenzene	14,600
tert-Butylbenzene	< 2,590		
n-Propylbenzene	7,740	**Miscellaneous**	
Isopropylbenzene	J 2,280	Methyl tert-butyl Ether	< 2,590
p-Isopropyltoluene	< 2,590		
Naphthalene	J 6,390		

ELAP Number 10958 Analytical Method: EPA 8260B Data File: V99718.D
Prep Method: EPA 5035A

Comments: ug / Kg = microgram per Kilogram

Signature:
Bruce Hoogesteger: Technical Director

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ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges

Client: **Lu Engineers, Inc.**

Client Job Site:	Scio St. BCP Project; Soil Removal Phase	**Lab Project Number:**	12:3445
		Lab Sample Number:	12:3445-02
Client Job Number:	4226		
Field Location:	CS-03(9)Dup_08-16-12	**Date Sampled:**	08/16/2012
Field ID Number:	N/A	**Date Received:**	08/16/2012
Sample Type:	Soil	**Date Analyzed:**	08/20/2012

Halocarbons	Results in ug / Kg
Bromodichloromethane	< 3,070
Bromomethane	< 3,070
Bromoform	< 7,670
Carbon Tetrachloride	< 3,070
Chloroethane	< 3,070
Chloromethane	< 3,070
2-Chloroethyl vinyl Ether	< 15,300
Chloroform	< 3,070
Dibromochloromethane	< 3,070
1,1-Dichloroethane	< 3,070
1,2-Dichloroethane	< 3,070
1,1-Dichloroethene	< 3,070
cis-1,2-Dichloroethene	< 3,070
trans-1,2-Dichloroethene	< 3,070
1,2-Dichloropropane	< 3,070
cis-1,3-Dichloropropene	< 3,070
trans-1,3-Dichloropropene	< 3,070
Methylene chloride	< 7,670
1,1,2,2-Tetrachloroethane	< 3,070
Tetrachloroethene	< 3,070
1,1,1-Trichloroethane	< 3,070
1,1,2-Trichloroethane	< 3,070
Trichloroethene	< 3,070
Trichlorofluoromethane	< 3,070
Vinyl chloride	< 3,070

Aromatics	Results in ug / Kg
Benzene	< 3,070
Chlorobenzene	< 3,070
Ethylbenzene	17,600
Toluene	7,890
m,p-Xylene	70,000
o-Xylene	11,500
Styrene	< 7,670
1,2-Dichlorobenzene	< 3,070
1,3-Dichlorobenzene	< 3,070
1,4-Dichlorobenzene	< 3,070

Ketones	Results in ug / Kg
Acetone	< 15,300
2-Butanone	< 15,300
2-Hexanone	< 7,670
4-Methyl-2-pentanone	< 7,670

Miscellaneous	Results in ug / Kg
Carbon disulfide	< 3,070
Vinyl acetate	< 7,670

ELAP Number 10958 Analytical Method: EPA 8260B Data File: V99719.D
Prep Method: EPA 5035A

Comments: ug / Kg = microgram per Kilogram

Signature:
Bruce Hoogesteger: Technical Director

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PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges (Additional STARS Compounds)

Client: **Lu Engineers, Inc.**

Client Job Site:	Scio St. BCP Project; Soil Removal Phase	**Lab Project Number:**	12:3445
		Lab Sample Number:	12:3445-02
Client Job Number:	4226		
Field Location:	CS-03(9)Dup_08-16-12	**Date Sampled:**	08/16/2012
Field ID Number:	N/A	**Date Received:**	08/16/2012
Sample Type:	Soil	**Date Analyzed:**	08/20/2012

Compound	Results in ug / Kg	Compound	Results in ug / Kg
n-Butylbenzene	< 3,070	1,2,4-Trimethylbenzene	64,000
sec-Butylbenzene	< 3,070	1,3,5-Trimethylbenzene	20,600
tert-Butylbenzene	< 3,070		
n-Propylbenzene	10,200	**Miscellaneous**	
Isopropylbenzene	3,150	Methyl tert-butyl Ether	< 3,070
p-Isopropyltoluene	< 3,070		
Naphthalene	11,200		

ELAP Number 10958 Analytical Method: EPA 8260B Data File: V99719.D
Prep Method: EPA 5035A

Comments: ug / Kg = microgram per Kilogram

Signature: _____
Bruce Hoogesteger: Technical Director

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt.

PARADIGM ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue
Rochester, NY 14608
(585) 647-2530 • (800) 724-1997
FAX: (585) 647-3311

CHAIN OF CUSTODY

REPORT TO:

COMPANY: Lu Engineers
ADDRESS: 175 Sully's Trail Suite 202
CITY: Pittsford STATE: NY ZIP: 14512
PHONE: (585) 385-7417 FAX:
ATTN: E. Detweiler / Greg Andrus

INVOICE TO:

COMPANY: SAME
ADDRESS:
CITY: STATE: ZIP:
PHONE: FAX:
ATTN:

LAB PROJECT #: 12:3445
CLIENT PROJECT #: 4226

TURNAROUND TIME: (WORKING DAYS): STD 1 2 3 5 OTHER 10 ☒

QUOTE #:

PROJECT NAME/SITE NAME: Scio St. BCP Project; Soil Removal Phase

COMMENTS: email results to edetweiler / Greg Andrus / Jane Forbes ★ ASP Cat B, Equis EDD No Cat B Hardcopy

REQUESTED ANALYSIS

	DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	NUMBER CONTAINERS	TCL VOCs 8260+STARS	SVOCs 8270 B/N								REMARKS	PARADIGM LAB SAMPLE NUMBER
1	8/16/12	8:45	X		CS-03(9)_08-16-12	Soil	1	X	X								PID readings to 800ppm	01
2	8/16/12	8:45	X		CS-03(9)Dup_08-16-12	↓	1	X	X								on samples	02
3																	★ ASP Cat B	
4																		
5																		
6																		
7																		
8																		
9																		
10																		

LAB USE ONLY BELOW THIS LINE

Sample Condition: Per NELAC/ELAP 210/241/242/243/244

Receipt Parameter	NELAC Compliance	
Container Type:	Y	N
Comments:		
Preservation:	Y	N
Comments:		
Holding Time:	Y	N
Comments:		
Temperature:	Y	N
Comments: 2° Iced from samples @ 1005 8/16		

	Date/Time
Sampled By: Eric Detweiler	8/16/12
Relinquished By: Eric Detweiler	8/16/12 3:53
Received By: [illegible]	8/16/12 15:53
Received @ Lab By: Elizabeth A. Honch	8/16/12 0842

Total Cost:

P.I.F.

PARADIGM

Chain of Custody Supplement

Client: Lu

Completed by: EAH

Lab Project ID: 12:3445

Date: 8/12/16

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	NELAC compliance with the sample condition requirements upon receipt: Yes	No	N/A
Container Type	X		
Comments	Voa rec'd in 5035 vials w/ H_2O.		
Transferred to method-compliant container			X
Headspace (<1 mL)			X
Comments			
Preservation			X
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X		
Comments	2°C iced		
Sufficient Sample Quantity	X		
Comments			

PARADIGM ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for Soils/Solids/Sludges (B/N Fraction)

Client: Lu Engineers, Inc

Client Job Site:	Scio St. BCP Project Soil Removal Phase	**Lab Project Number:**	12:3463
		Lab Sample Number:	12:3463-01
Client Job Number:	4226		
Field Location:	CS-04(10)_08-17-12	**Date Sampled:**	08/17/2012
Field ID Number:	N/A	**Date Received:**	08/17/2012
Sample Type:	Soil	**Date Analyzed:**	08/28/2012

Base / Neutrals	Results in ug / Kg	Base / Neutrals	Results in ug / Kg
Acenaphthene	< 322	Dibenz (a,h) anthracene	< 322
Anthracene	< 322	Fluoranthene	J 185
Benzo (a) anthracene	< 322	Fluorene	< 322
Benzo (a) pyrene	< 322	Indeno (1,2,3-cd) pyrene	< 322
Benzo (b) fluoranthene	< 322	Naphthalene	3,010
Benzo (g,h,i) perylene	< 322	Phenanthrene	J 188
Benzo (k) fluoranthene	< 322	Pyrene	< 322
Chrysene	< 322	Acenaphthylene	< 322
Diethyl phthalate	< 322	1,2-Dichlorobenzene	< 322
Dimethyl phthalate	< 805	1,3-Dichlorobenzene	< 322
Butylbenzylphthalate	< 322	1,4-Dichlorobenzene	< 322
Di-n-butyl phthalate	< 322	1,2,4-Trichlorobenzene	< 322
Di-n-octylphthalate	< 322	Nitrobenzene	< 322
Bis (2-ethylhexyl) phthalate	< 322	2,4-Dinitrotoluene	< 322
2-Chloronaphthalene	< 322	2,6-Dinitrotoluene	< 322
Hexachlorobenzene	< 322	Bis (2-chloroethyl) ether	< 322
Hexachloroethane	< 322	Bis (2-chloroisopropyl) ether	< 322
Hexachlorocyclopentadiene	< 322	Bis (2-chloroethoxy) methane	< 322
Hexachlorobutadiene	< 322	4-Bromophenyl phenyl ether	< 322
N-Nitroso-di-n-propylamine	< 322	4-Chlorophenyl phenyl ether	< 322
N-Nitrosodiphenylamine	< 322	Benzidine	< 805
N-Nitrosodimethylamine	< 322	3,3'-Dichlorobenzidine	< 322
Isophorone	< 322	4-Chloroaniline	< 322
Benzyl alcohol	< 805	2-Nitroaniline	< 805
Dibenzofuran	< 322	3-Nitroaniline	< 805
2-Methylnapthalene	3,610	4-Nitroaniline	< 805

ELAP Number 10958 Analytical Method: EPA 8270C Data File: S64965.D
Prep Method: EPA 3550C

Comments: ug / Kg = microgram per Kilogram

Signature: (for)
Bruce Hoogesteger: Technical Director

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for Soils/Solids/Sludges (B/N Fraction)

Client: Lu Engineers, Inc

Client Job Site:	Scio St. BCP Project Soil Removal Phase	**Lab Project Number:**	12:3463
		Lab Sample Number:	12:3463-02
Client Job Number:	4226		
Field Location:	CS-05(10)_08-17-12	**Date Sampled:**	08/17/2012
Field ID Number:	N/A	**Date Received:**	08/17/2012
Sample Type:	Soil	**Date Analyzed:**	08/28/2012

Base / Neutrals	Results in ug / Kg	Base / Neutrals	Results in ug / Kg
Acenaphthene	< 1,610	Dibenz (a,h) anthracene	< 1,610
Anthracene	< 1,610	Fluoranthene	< 1,610
Benzo (a) anthracene	< 1,610	Fluorene	< 1,610
Benzo (a) pyrene	< 1,610	Indeno (1,2,3-cd) pyrene	< 1,610
Benzo (b) fluoranthene	< 1,610	Naphthalene	13,000
Benzo (g,h,i) perylene	< 1,610	Phenanthrene	< 1,610
Benzo (k) fluoranthene	< 1,610	Pyrene	< 1,610
Chrysene	< 1,610	Acenaphthylene	< 1,610
Diethyl phthalate	< 1,610	1,2-Dichlorobenzene	< 1,610
Dimethyl phthalate	< 4,030	1,3-Dichlorobenzene	< 1,610
Butylbenzylphthalate	< 1,610	1,4-Dichlorobenzene	< 1,610
Di-n-butyl phthalate	< 1,610	1,2,4-Trichlorobenzene	< 1,610
Di-n-octylphthalate	< 1,610	Nitrobenzene	< 1,610
Bis (2-ethylhexyl) phthalate	< 1,610	2,4-Dinitrotoluene	< 1,610
2-Chloronaphthalene	< 1,610	2,6-Dinitrotoluene	< 1,610
Hexachlorobenzene	< 1,610	Bis (2-chloroethyl) ether	< 1,610
Hexachloroethane	< 1,610	Bis (2-chloroisopropyl) ether	< 1,610
Hexachlorocyclopentadiene	< 1,610	Bis (2-chloroethoxy) methane	< 1,610
Hexachlorobutadiene	< 1,610	4-Bromophenyl phenyl ether	< 1,610
N-Nitroso-di-n-propylamine	< 1,610	4-Chlorophenyl phenyl ether	< 1,610
N-Nitrosodiphenylamine	< 1,610	Benzidine	< 4,030
N-Nitrosodimethylamine	< 1,610	3,3'-Dichlorobenzidine	< 1,610
Isophorone	< 1,610	4-Chloroaniline	< 1,610
Benzyl alcohol	< 4,030	2-Nitroaniline	< 4,030
Dibenzofuran	< 1,610	3-Nitroaniline	< 4,030
2-Methylnapthalene	13,600	4-Nitroaniline	< 4,030

ELAP Number 10958 Analytical Method: EPA 8270C Data File: S64980.D
Prep Method: EPA 3550C

Comments: ug / Kg = microgram per Kilogram

Signature: (for)
Bruce Hoogesteger: Technical Director

123463S2.XLS

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges

Client: Lu Engineers, Inc.

Client Job Site:	Scio St. BCP Project Soil Removal Phase	**Lab Project Number:**	12:3463
		Lab Sample Number:	12:3463-01
Client Job Number:	4226		
Field Location:	CS-04 (10)_08-17-12	**Date Sampled:**	08/17/2012
Field ID Number:	N/A	**Date Received:**	08/17/2012
Sample Type:	Soil	**Date Analyzed:**	08/20/2012

Halocarbons	Results in ug / Kg
Bromodichloromethane	< 2,770
Bromomethane	< 2,770
Bromoform	< 6,920
Carbon Tetrachloride	< 2,770
Chloroethane	< 2,770
Chloromethane	< 2,770
2-Chloroethyl vinyl Ether	< 13,800
Chloroform	< 2,770
Dibromochloromethane	< 2,770
1,1-Dichloroethane	< 2,770
1,2-Dichloroethane	< 2,770
1,1-Dichloroethene	< 2,770
cis-1,2-Dichloroethene	< 2,770
trans-1,2-Dichloroethene	< 2,770
1,2-Dichloropropane	< 2,770
cis-1,3-Dichloropropene	< 2,770
trans-1,3-Dichloropropene	< 2,770
Methylene chloride	< 6,920
1,1,2,2-Tetrachloroethane	< 2,770
Tetrachloroethene	< 2,770
1,1,1-Trichloroethane	< 2,770
1,1,2-Trichloroethane	< 2,770
Trichloroethene	< 2,770
Trichlorofluoromethane	< 2,770
Vinyl chloride	< 2,770

Aromatics	Results in ug / Kg
Benzene	< 2,770
Chlorobenzene	< 2,770
Ethylbenzene	10,300
Toluene	< 2,770
m,p-Xylene	46,500
o-Xylene	11,400
Styrene	< 6,920
1,2-Dichlorobenzene	< 2,770
1,3-Dichlorobenzene	< 2,770
1,4-Dichlorobenzene	< 2,770

Ketones	Results in ug / Kg
Acetone	< 13,800
2-Butanone	< 13,800
2-Hexanone	< 6,920
4-Methyl-2-pentanone	< 6,920

Miscellaneous	Results in ug / Kg
Carbon disulfide	< 2,770
Vinyl acetate	< 6,920

ELAP Number 10958 Analytical Method: EPA 8260B Data File: V99720.D
Prep Method: EPA 5035A

Comments: ug / Kg = microgram per Kilogram

Signature: (for)
Bruce Hoogesteger: Technical Director

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt.

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Volatile Analysis Report for Soils/Solids/Sludges (Additional STARS Compounds)

Client: Lu Engineers, Inc.

Client Job Site:	Scio St. BCP Project Soil Removal Phase	**Lab Project Number:**	12:3463
		Lab Sample Number:	12:3463-01
Client Job Number:	4226		
Field Location:	CS-04 (10)_08-17-12	**Date Sampled:**	08/17/2012
Field ID Number:	N/A	**Date Received:**	08/17/2012
Sample Type:	Soil	**Date Analyzed:**	08/20/2012

Compound	Results in ug / Kg	Compound	Results in ug / Kg
n-Butylbenzene	< 2,770	1,2,4-Trimethylbenzene	55,800
sec-Butylbenzene	< 2,770	1,3,5-Trimethylbenzene	18,100
tert-Butylbenzene	< 2,770		
n-Propylbenzene	9,230	**Miscellaneous**	
Isopropylbenzene	2,830	Methyl tert-butyl Ether	< 2,770
p-Isopropyltoluene	< 2,770		
Naphthalene	8,050		

ELAP Number 10958 Analytical Method: EPA 8260B Data File: V99720.D
Prep Method: EPA 5035A

Comments: ug / Kg = microgram per Kilogram

Signature: (for)
Bruce Hoogesteger: Technical Director

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Volatile Analysis Report for Soils/Solids/Sludges

Client: **Lu Engineers, Inc.**

Client Job Site:	Scio St. BCP Project Soil Removal Phase	**Lab Project Number:**	12:3463
		Lab Sample Number:	12:3463-02
Client Job Number:	4226		
Field Location:	CS-05 (10)_08-17-12	**Date Sampled:**	08/17/2012
Field ID Number:	N/A	**Date Received:**	08/17/2012
Sample Type:	Soil	**Date Analyzed:**	08/20/2012

Halocarbons	Results in ug / Kg
Bromodichloromethane	< 2,380
Bromomethane	< 2,380
Bromoform	< 5,940
Carbon Tetrachloride	< 2,380
Chloroethane	< 2,380
Chloromethane	< 2,380
2-Chloroethyl vinyl Ether	< 11,900
Chloroform	< 2,380
Dibromochloromethane	< 2,380
1,1-Dichloroethane	< 2,380
1,2-Dichloroethane	< 2,380
1,1-Dichloroethene	< 2,380
cis-1,2-Dichloroethene	< 2,380
trans-1,2-Dichloroethene	< 2,380
1,2-Dichloropropane	< 2,380
cis-1,3-Dichloropropene	< 2,380
trans-1,3-Dichloropropene	< 2,380
Methylene chloride	< 5,940
1,1,2,2-Tetrachloroethane	< 2,380
Tetrachloroethene	< 2,380
1,1,1-Trichloroethane	< 2,380
1,1,2-Trichloroethane	< 2,380
Trichloroethene	< 2,380
Trichlorofluoromethane	< 2,380
Vinyl chloride	< 2,380

Aromatics	Results in ug / Kg
Benzene	< 2,380
Chlorobenzene	< 2,380
Ethylbenzene	18,500
Toluene	J 1,350
m,p-Xylene	72,900
o-Xylene	10,600
Styrene	< 5,940
1,2-Dichlorobenzene	< 2,380
1,3-Dichlorobenzene	< 2,380
1,4-Dichlorobenzene	< 2,380

Ketones	Results in ug / Kg
Acetone	< 11,900
2-Butanone	< 11,900
2-Hexanone	< 5,940
4-Methyl-2-pentanone	< 5,940

Miscellaneous	Results in ug / Kg
Carbon disulfide	< 2,380
Vinyl acetate	< 5,940

ELAP Number 10958 Analytical Method: EPA 8260B Data File: V99721.D
Prep Method: EPA 5035A

Comments: ug / Kg = microgram per Kilogram

Signature: (for)
Bruce Hoogesteger, Technical Director

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ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges (Additional STARS Compounds)

Client: Lu Engineers, Inc.

Client Job Site:	Scio St. BCP Project Soil Removal Phase	**Lab Project Number:**	12:3463
		Lab Sample Number:	12:3463-02
Client Job Number:	4226		
Field Location:	CS-05 (10)_08-17-12	**Date Sampled:**	08/17/2012
Field ID Number:	N/A	**Date Received:**	08/17/2012
Sample Type:	Soil	**Date Analyzed:**	08/20/2012

Compound	Results in ug / Kg	Compound	Results in ug / Kg
n-Butylbenzene	< 2,380	1,2,4-Trimethylbenzene	97,000
sec-Butylbenzene	J 1,990	1,3,5-Trimethylbenzene	26,200
tert-Butylbenzene	< 2,380		
n-Propylbenzene	13,900	**Miscellaneous**	
Isopropylbenzene	3,950	Methyl tert-butyl Ether	< 2,380
p-Isopropyltoluene	J 1,880		
Naphthalene	16,400		

ELAP Number 10958 Analytical Method: EPA 8260B Data File: V99721.D
Prep Method: EPA 5035A

Comments: ug / Kg = microgram per Kilogram

Signature: (for)
Bruce Hoogesteger: Technical Director

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PARADIGM ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue
Rochester, NY 14608
(585) 647-2530 • (800) 724-1997
FAX: (585) 647-3311

CHAIN OF CUSTODY

REPORT TO:	INVOICE TO:		
COMPANY: Lu Engineers	COMPANY:	LAB PROJECT #: 12:3463	CLIENT PROJECT #: 4226-
ADDRESS: 175 Sullys Trail Suite 202	ADDRESS: SAME		
CITY: Pittsford STATE: NY ZIP: 14534	CITY: STATE: ZIP:	TURNAROUND TIME: (WORKING DAYS)	
PHONE: 385-7417 FAX:	PHONE: FAX:	STD 1 2 3 5	OTHER 10 X
ATTN: E. Detweiler / Greg Andrus	ATTN:		
COMMENTS: email results to edetweiler / Greg Andrus / Jane Forbes (Cof Rad) / Equiss EDD No Cat B hard copy		QUOTE #:	

PROJECT NAME/SITE NAME: Scio St. BCP Site Soil Removal Phase

REQUESTED ANALYSIS

	DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	NUMBER CONTAINERS	TCL VOCs 8260 + STARS	SVOCs 8270 B/N									REMARKS	PARADIGM LAB SAMPLE NUMBER
1	8/17/12	9:20	X		CS-04(10)_08-17-12	soil	1	X	X									PID readings to 1,900 ppm	01
2	8/17/12	2:00	X		CS-05(10)_08-17-12	soil	1	X	X									PID readings to 300+ ppm	02
3																			
4																		*ASP Cat B*	
5																			
6																			
7																			
8																			
9																			
10																			

LAB USE ONLY BELOW THIS LINE

Sample Condition: Per NELAC/ELAP 210/241/242/243/244

Receipt Parameter	NELAC Compliance	
Container Type: Comments:	Y	N
Preservation: Comments:	Y	N
Holding Time: Comments:	Y	N
Temperature: Comments: 3°C iced @ 1637 8/17 from samples	Y	N

Eric Detweiler	8/17/12
Sampled By	Date/Time
Eric Detweiler	8/17/12 4:04
Relinquished By	Date/Time
Jane J Dalora	8/17/12 1604
Received By	Date/Time
Elizabeth A Honch	8/17/12 1639
Received @ Lab By	Date/Time

Total Cost:

P.I.F.

PARADIGM

Chain of Custody Supplement

Client: LU

Completed by: EAH

Lab Project ID: 12:3463

Date: 8/17

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

NELAC compliance with the sample condition requirements upon receipt

Condition	Yes	No	N/A
Container Type	X	X for voa prep	
Comments			
Transferred to method-compliant container	X for voa prep		X
Headspace (<1 mL)			X
Comments			
Preservation			X
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time			X
Comments			
Temperature	X		
Comments	3°C iced from samples @ 1637 8/17		
Sufficient Sample Quantity	X		
Comments			

PARADIGM ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for Soils/Solids/Sludges (B/N Fraction)

Client: **Lu Engineers, Inc**

Client Job Site:	Scio St. BCP Project Soil Removal Phase	**Lab Project Number:**	12:3491
		Lab Sample Number:	12:3491-01
Client Job Number:	4226		
Field Location:	CS-06(10)_08-21-12	**Date Sampled:**	08/21/2012
Field ID Number:	N/A	**Date Received:**	08/21/2012
Sample Type:	Soil	**Date Analyzed:**	08/29/2012

Base / Neutrals	Results in ug / Kg	Base / Neutrals	Results in ug / Kg
Acenaphthene	< 325	Dibenz (a,h) anthracene	< 325
Anthracene	< 325	Fluoranthene	< 325
Benzo (a) anthracene	< 325	Fluorene	< 325
Benzo (a) pyrene	< 325	Indeno (1,2,3-cd) pyrene	< 325
Benzo (b) fluoranthene	< 325	Naphthalene	J 218
Benzo (g,h,i) perylene	< 325	Phenanthrene	< 325
Benzo (k) fluoranthene	< 325	Pyrene	< 325
Chrysene	< 325	Acenaphthylene	< 325
Diethyl phthalate	< 325	1,2-Dichlorobenzene	< 325
Dimethyl phthalate	< 814	1,3-Dichlorobenzene	< 325
Butylbenzylphthalate	< 325	1,4-Dichlorobenzene	< 325
Di-n-butyl phthalate	< 325	1,2,4-Trichlorobenzene	< 325
Di-n-octylphthalate	< 325	Nitrobenzene	< 325
Bis (2-ethylhexyl) phthalate	< 325	2,4-Dinitrotoluene	< 325
2-Chloronaphthalene	< 325	2,6-Dinitrotoluene	< 325
Hexachlorobenzene	< 325	Bis (2-chloroethyl) ether	< 325
Hexachloroethane	< 325	Bis (2-chloroisopropyl) ether	< 325
Hexachlorocyclopentadiene	< 325	Bis (2-chloroethoxy) methane	< 325
Hexachlorobutadiene	< 325	4-Bromophenyl phenyl ether	< 325
N-Nitroso-di-n-propylamine	< 325	4-Chlorophenyl phenyl ether	< 325
N-Nitrosodiphenylamine	< 325	Benzidine	< 814
N-Nitrosodimethylamine	< 325	3,3'-Dichlorobenzidine	< 325
Isophorone	< 325	4-Chloroaniline	< 325
Benzyl alcohol	< 814	2-Nitroaniline	< 814
Dibenzofuran	< 325	3-Nitroaniline	< 814
2-Methylnapthalene	J 282	4-Nitroaniline	< 814

ELAP Number 10958 Analytical Method: EPA 8270C Data File: S65003.D
Prep Method: EPA 3550C

Comments: ug / Kg = microgram per Kilogram

Signature:
Bruce Hoogesteger: Technical Director

123491S1.XLS

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for Soils/Solids/Sludges (B/N Fraction)

Client: Lu Engineers, Inc

Client Job Site:	Scio St. BCP Project Soil Removal Phase	**Lab Project Number:**	12:3491
		Lab Sample Number:	12:3491-02
Client Job Number:	4226		
Field Location:	CS-07(11)_08-21-12	**Date Sampled:**	08/21/2012
Field ID Number:	N/A	**Date Received:**	08/21/2012
Sample Type:	Soil	**Date Analyzed:**	08/29/2012

Base / Neutrals	Results in ug / Kg	Base / Neutrals	Results in ug / Kg
Acenaphthene	< 316	Dibenz (a,h) anthracene	< 316
Anthracene	< 316	Fluoranthene	< 316
Benzo (a) anthracene	< 316	Fluorene	< 316
Benzo (a) pyrene	< 316	Indeno (1,2,3-cd) pyrene	< 316
Benzo (b) fluoranthene	< 316	Naphthalene	2,030
Benzo (g,h,i) perylene	< 316	Phenanthrene	< 316
Benzo (k) fluoranthene	< 316	Pyrene	< 316
Chrysene	< 316	Acenaphthylene	< 316
Diethyl phthalate	< 316	1,2-Dichlorobenzene	< 316
Dimethyl phthalate	< 791	1,3-Dichlorobenzene	< 316
Butylbenzylphthalate	< 316	1,4-Dichlorobenzene	< 316
Di-n-butyl phthalate	< 316	1,2,4-Trichlorobenzene	< 316
Di-n-octylphthalate	< 316	Nitrobenzene	< 316
Bis (2-ethylhexyl) phthalate	< 316	2,4-Dinitrotoluene	< 316
2-Chloronaphthalene	< 316	2,6-Dinitrotoluene	< 316
Hexachlorobenzene	< 316	Bis (2-chloroethyl) ether	< 316
Hexachloroethane	< 316	Bis (2-chloroisopropyl) ether	< 316
Hexachlorocyclopentadiene	< 316	Bis (2-chloroethoxy) methane	< 316
Hexachlorobutadiene	< 316	4-Bromophenyl phenyl ether	< 316
N-Nitroso-di-n-propylamine	< 316	4-Chlorophenyl phenyl ether	< 316
N-Nitrosodiphenylamine	< 316	Benzidine	< 791
N-Nitrosodimethylamine	< 316	3,3'-Dichlorobenzidine	< 316
Isophorone	< 316	4-Chloroaniline	< 316
Benzyl alcohol	< 791	2-Nitroaniline	< 791
Dibenzofuran	< 316	3-Nitroaniline	< 791
2-Methylnapthalene	2,020	4-Nitroaniline	< 791

ELAP Number 10958 Analytical Method: EPA 8270C Data File: S65004.D
Prep Method: EPA 3550C

Comments: ug / Kg = microgram per Kilogram

Signature:
Bruce Hoogesteger: Technical Director

PARADIGM ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges

Client: Lu Engineers, Inc.

Client Job Site:	Scio St. BCP Project Soil Removal Phase	**Lab Project Number:**	12:3491
		Lab Sample Number:	12:3491-01
Client Job Number:	4226		
Field Location:	CS-06(10)_08-21-12	**Date Sampled:**	08/21/2012
Field ID Number:	N/A	**Date Received:**	08/21/2012
Sample Type:	Soil	**Date Analyzed:**	08/29/2012

Halocarbons	Results in ug / Kg
Bromodichloromethane	< 415
Bromomethane	< 415
Bromoform	< 1,040
Carbon Tetrachloride	< 415
Chloroethane	< 415
Chloromethane	< 415
2-Chloroethyl vinyl Ether	< 2,070
Chloroform	< 415
Dibromochloromethane	< 415
1,1-Dichloroethane	< 415
1,2-Dichloroethane	< 415
1,1-Dichloroethene	< 415
cis-1,2-Dichloroethene	< 415
trans-1,2-Dichloroethene	< 415
1,2-Dichloropropane	< 415
cis-1,3-Dichloropropene	< 415
trans-1,3-Dichloropropene	< 415
Methylene chloride	< 1,040
1,1,2,2-Tetrachloroethane	< 415
Tetrachloroethene	< 415
1,1,1-Trichloroethane	< 415
1,1,2-Trichloroethane	< 415
Trichloroethene	< 415
Trichlorofluoromethane	< 415
Vinyl chloride	< 415

Aromatics	Results in ug / Kg
Benzene	< 415
Chlorobenzene	< 415
Ethylbenzene	3,150
Toluene	J 221
m,p-Xylene	17,200
o-Xylene	1,000
Styrene	< 1,040
1,2-Dichlorobenzene	< 415
1,3-Dichlorobenzene	< 415
1,4-Dichlorobenzene	< 415

Ketones	Results in ug / Kg
Acetone	B 5,250
2-Butanone	< 2,070
2-Hexanone	< 1,040
4-Methyl-2-pentanone	< 1,040

Miscellaneous	Results in ug / Kg
Carbon disulfide	< 415
Vinyl acetate	< 1,040

ELAP Number 10958 Analytical Method: EPA 8260B Data File: V99994.D
Prep Method: EPA 5035A

Comments: ug / Kg = microgram per Kilogram

Signature: _____
Bruce Hoogesteger, Technical Director

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Volatile Analysis Report for Soils/Solids/Sludges (Additional STARS Compounds)

Client: **Lu Engineers, Inc.**

Client Job Site:	Scio St. BCP Project Soil Removal Phase	**Lab Project Number:**	12:3491
		Lab Sample Number:	12:3491-01
Client Job Number:	4226		
Field Location:	CS-06(10)_08-21-12	**Date Sampled:**	08/21/2012
Field ID Number:	N/A	**Date Received:**	08/21/2012
Sample Type:	Soil	**Date Analyzed:**	08/29/2012

Compound	Results in ug / Kg	Compound	Results in ug / Kg
n-Butylbenzene	1,660	1,2,4-Trimethylbenzene	14,600
sec-Butylbenzene	J 286	1,3,5-Trimethylbenzene	4,570
tert-Butylbenzene	< 415		
n-Propylbenzene	2,210	**Miscellaneous**	
Isopropylbenzene	677	Methyl tert-butyl Ether	< 415
p-Isopropyltoluene	J 293		
Naphthalene	2,590		

ELAP Number 10958 Analytical Method: EPA 8260B Data File: V99994.D
Prep Method: EPA 5035A

Comments: ug / Kg = microgram per Kilogram

Signature: _____
Bruce Hoogesteger: Technical Director

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PARADIGM ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges

Client: Lu Engineers, Inc.

Client Job Site:	Scio St. BCP Project Soil Removal Phase	**Lab Project Number:**	12:3491
		Lab Sample Number:	12:3491-02
Client Job Number:	4226		
Field Location:	CS-07(11)_08-21-12	**Date Sampled:**	08/21/2012
Field ID Number:	N/A	**Date Received:**	08/21/2012
Sample Type:	Soil	**Date Analyzed:**	08/29/2012

Halocarbons	Results in ug / Kg
Bromodichloromethane	< 489
Bromomethane	< 489
Bromoform	< 1,220
Carbon Tetrachloride	< 489
Chloroethane	< 489
Chloromethane	< 489
2-Chloroethyl vinyl Ether	< 2,450
Chloroform	< 489
Dibromochloromethane	< 489
1,1-Dichloroethane	< 489
1,2-Dichloroethane	< 489
1,1-Dichloroethene	< 489
cis-1,2-Dichloroethene	< 489
trans-1,2-Dichloroethene	< 489
1,2-Dichloropropane	< 489
cis-1,3-Dichloropropene	< 489
trans-1,3-Dichloropropene	< 489
Methylene chloride	B 2,240
1,1,2,2-Tetrachloroethane	< 489
Tetrachloroethene	< 489
1,1,1-Trichloroethane	< 489
1,1,2-Trichloroethane	< 489
Trichloroethene	< 489
Trichlorofluoromethane	< 489
Vinyl chloride	< 489

Aromatics	Results in ug / Kg
Benzene	< 489
Chlorobenzene	< 489
Ethylbenzene	2,120
Toluene	< 489
m,p-Xylene	9,430
o-Xylene	555
Styrene	< 1,220
1,2-Dichlorobenzene	< 489
1,3-Dichlorobenzene	< 489
1,4-Dichlorobenzene	< 489

Ketones	Results in ug / Kg
Acetone	B 7,950
2-Butanone	< 2,450
2-Hexanone	< 1,220
4-Methyl-2-pentanone	< 1,220

Miscellaneous	Results in ug / Kg
Carbon disulfide	< 489
Vinyl acetate	< 1,220

ELAP Number 10958 Analytical Method: EPA 8260B Data File: V99995.D
Prep Method: EPA 5035A

Comments: ug / Kg = microgram per Kilogram
Matrix Spike outliers indicate probable matrix interference

Signature: _____
Bruce Hoogesteger: Technical Director

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ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges (Additional STARS Compounds)

Client: **Lu Engineers, Inc.**

Client Job Site:	Scio St. BCP Project Soil Removal Phase	**Lab Project Number:**	12:3491
		Lab Sample Number:	12:3491-02
Client Job Number:	4226		
Field Location:	CS-07(11)_08-21-12	**Date Sampled:**	08/21/2012
Field ID Number:	N/A	**Date Received:**	08/21/2012
Sample Type:	Soil	**Date Analyzed:**	08/29/2012

Compound	Results in ug / Kg	Compound	Results in ug / Kg
n-Butylbenzene	2,410	1,2,4-Trimethylbenzene	21,800
sec-Butylbenzene	J 384	1,3,5-Trimethylbenzene	6,620
tert-Butylbenzene	< 489		
n-Propylbenzene	2,990	**Miscellaneous**	
Isopropylbenzene	842	Methyl tert-butyl Ether	< 489
p-Isopropyltoluene	J 395		
Naphthalene	4,430		

ELAP Number 10958 Analytical Method: EPA 8260B Data File: V99995.D
Prep Method: EPA 5035A

Comments: ug / Kg = microgram per Kilogram
Matrix Spike outliers indicate probable matrix interference

Signature: _____
Bruce Hoogesteger: Technical Director

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PARADIGM ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue
Rochester, NY 14608
(585) 647-2530 • (800) 724-1997
FAX: (585) 647-3311

CHAIN OF CUSTODY

1 of 2

REPORT TO:

COMPANY: Lu Eng.
ADDRESS: 175 Sully's Trail Suite 202
CITY: Pittsford STATE: NY ZIP: 14512
PHONE: 385-7417 FAX:
ATTN: Eric Detweiler / Greg Andrus

INVOICE TO:

COMPANY: SAME
ADDRESS:
CITY: STATE: ZIP:
PHONE: FAX:
ATTN:

LAB PROJECT #: 12i3491
CLIENT PROJECT #: 4226
TURNAROUND TIME: (WORKING DAYS) 10
STD: 1 2 3 5 OTHER: X
QUOTE #:

PROJECT NAME/SITE NAME: Scio St. BCP Site: Soil Removal Phase

COMMENTS: email results to: edetweiler / GregAndrus / Jane Forbes & ASP Cat B deliv. Equis EDD format

REQUESTED ANALYSIS

	DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	NUMBER CONTAINERS	TCL VOCs 8260+STARS	SVOCs 8270 B/N								REMARKS	PARADIGM LAB SAMPLE NUMBER
1	8/21/12	14:15	X		CS-06(10)_08-21-12	soil	1	X	X								PID readings to 15-20 ppm	01
2	↓	14:25	X		CS-07(11)_08-21-12	↓	3	X	X								PID readings to 1,100 ppm	02
3		14:25	X		CS-07(11)MS_08-21-12		1	X	X									~~03~~
4	↓	14:25	X		CS-07(11)MSD_08-21-12	↓	1	X	X									~~04~~
5																		
6																		
7																		
8																		
9																		
10																		

ee EAH 8/21

LAB USE ONLY BELOW THIS LINE

Sample Condition: Per NELAC/ELAP 210/241/242/243/244

Receipt Parameter	NELAC Compliance	
Container Type:	Y ☐	N ☐
Comments:		
Preservation:	Y ☐	N ☐
Comments:		
Holding Time:	Y ☐	N ☐
Comments:		
Temperature:	Y ☐	N ☐
Comments: 6°C iced from temp blk @ 1556 8/21		

Samples delivered by client so custody seals N/A. EAH 8/21

Sampled By: Eric Detweiler 8/21/12	Date/Time: 8/21/12 3:38	
Relinquished By:	Date/Time: 8/21/12 1538	
Received By: Molly Vail	Date/Time: 8/21/12 1649	
Received @ Lab By:	Date/Time:	

Total Cost:

P.I.F.

PARADIGM

Chain of Custody Supplement

Client: Lu

Completed by: EAH

Lab Project ID: 12:3491

Date: 8/21

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	Yes	No	N/A
NELAC compliance with the sample condition requirements upon receipt			
Container Type	X	X for voaprep 5035	
Comments			
Transferred to method-compliant container	X for voa prep		X
Headspace (<1 mL)			X
Comments			
Preservation			X
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X		
Comments	6°C iced temp blk @ 1556 8/21		
Sufficient Sample Quantity	X		
Comments			

PARADIGM
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for Soils/Solids/Sludges (B/N Fraction)

Client: **Lu Engineers, Inc**

Client Job Site:	Scio St.	**Lab Project Number:**	12:3543
		Lab Sample Number:	12:3543-01
Client Job Number:	4226		
Field Location:	CS-08(13)_08-23-12	**Date Sampled:**	08/23/2012
Field ID Number:	N/A	**Date Received:**	08/24/2012
Sample Type:	Soil	**Date Analyzed:**	08/29/2012

Base / Neutrals	Results in ug / Kg	**Base / Neutrals**	Results in ug / Kg
Acenaphthene	< 310	Dibenz (a,h) anthracene	< 310
Anthracene	< 310	Fluoranthene	< 310
Benzo (a) anthracene	< 310	Fluorene	< 310
Benzo (a) pyrene	< 310	Indeno (1,2,3-cd) pyrene	< 310
Benzo (b) fluoranthene	< 310	Naphthalene	< 310
Benzo (g,h,i) perylene	< 310	Phenanthrene	< 310
Benzo (k) fluoranthene	< 310	Pyrene	< 310
Chrysene	< 310	Acenaphthylene	< 310
Diethyl phthalate	< 310	1,2-Dichlorobenzene	< 310
Dimethyl phthalate	< 775	1,3-Dichlorobenzene	< 310
Butylbenzylphthalate	< 310	1,4-Dichlorobenzene	< 310
Di-n-butyl phthalate	< 310	1,2,4-Trichlorobenzene	< 310
Di-n-octylphthalate	< 310	Nitrobenzene	< 310
Bis (2-ethylhexyl) phthalate	< 310	2,4-Dinitrotoluene	< 310
2-Chloronaphthalene	< 310	2,6-Dinitrotoluene	< 310
Hexachlorobenzene	< 310	Bis (2-chloroethyl) ether	< 310
Hexachloroethane	< 310	Bis (2-chloroisopropyl) ether	< 310
Hexachlorocyclopentadiene	< 310	Bis (2-chloroethoxy) methane	< 310
Hexachlorobutadiene	< 310	4-Bromophenyl phenyl ether	< 310
N-Nitroso-di-n-propylamine	< 310	4-Chlorophenyl phenyl ether	< 310
N-Nitrosodiphenylamine	< 310	Benzidine	< 775
N-Nitrosodimethylamine	< 310	3,3'-Dichlorobenzidine	< 310
Isophorone	< 310	4-Chloroaniline	< 310
Benzyl alcohol	< 775	2-Nitroaniline	< 775
Dibenzofuran	< 310	3-Nitroaniline	< 775
2-Methylnapthalene	< 310	4-Nitroaniline	< 775

ELAP Number 10958 Analytical Method: EPA 8270C Data File: S65007.D

Prep Method: EPA 3550C

Comments: ug / Kg = microgram per Kilogram

Signature:

Bruce Hoogesteger: Technical Director

123543S1.XLS

PARADIGM ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for Soils/Solids/Sludges (B/N Fraction)

Client: Lu Engineers, Inc

Client Job Site:	Scio St.	**Lab Project Number:**	12:3543
		Lab Sample Number:	12:3543-02
Client Job Number:	4226		
Field Location:	CS-09(11.5)_08-23-12	**Date Sampled:**	08/23/2012
Field ID Number:	N/A	**Date Received:**	08/24/2012
Sample Type:	Soil	**Date Analyzed:**	08/29/2012

Base / Neutrals	Results in ug / Kg	Base / Neutrals	Results in ug / Kg
Acenaphthene	< 310	Dibenz (a,h) anthracene	< 310
Anthracene	< 310	Fluoranthene	< 310
Benzo (a) anthracene	< 310	Fluorene	< 310
Benzo (a) pyrene	< 310	Indeno (1,2,3-cd) pyrene	< 310
Benzo (b) fluoranthene	< 310	Naphthalene	< 310
Benzo (g,h,i) perylene	< 310	Phenanthrene	< 310
Benzo (k) fluoranthene	< 310	Pyrene	< 310
Chrysene	< 310	Acenaphthylene	< 310
Diethyl phthalate	< 310	1,2-Dichlorobenzene	< 310
Dimethyl phthalate	< 775	1,3-Dichlorobenzene	< 310
Butylbenzylphthalate	< 310	1,4-Dichlorobenzene	< 310
Di-n-butyl phthalate	< 310	1,2,4-Trichlorobenzene	< 310
Di-n-octylphthalate	< 310	Nitrobenzene	< 310
Bis (2-ethylhexyl) phthalate	< 310	2,4-Dinitrotoluene	< 310
2-Chloronaphthalene	< 310	2,6-Dinitrotoluene	< 310
Hexachlorobenzene	< 310	Bis (2-chloroethyl) ether	< 310
Hexachloroethane	< 310	Bis (2-chloroisopropyl) ether	< 310
Hexachlorocyclopentadiene	< 310	Bis (2-chloroethoxy) methane	< 310
Hexachlorobutadiene	< 310	4-Bromophenyl phenyl ether	< 310
N-Nitroso-di-n-propylamine	< 310	4-Chlorophenyl phenyl ether	< 310
N-Nitrosodiphenylamine	< 310	Benzidine	< 775
N-Nitrosodimethylamine	< 310	3,3'-Dichlorobenzidine	< 310
Isophorone	< 310	4-Chloroaniline	< 310
Benzyl alcohol	< 775	2-Nitroaniline	< 775
Dibenzofuran	< 310	3-Nitroaniline	< 775
2-Methylnapthalene	< 310	4-Nitroaniline	< 775

ELAP Number 10958 Analytical Method: EPA 8270C Data File: S65008.D

Prep Method: EPA 3550C

Comments: ug / Kg = microgram per Kilogram

Signature:

Bruce Hoogesteger: Technical Director

123543S2.XLS

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for Soils/Solids/Sludges (B/N Fraction)

Client: Lu Engineers, Inc

Client Job Site:	Scio St.	**Lab Project Number:**	12:3543
		Lab Sample Number:	12:3543-03
Client Job Number:	4226		
Field Location:	CS-10(13)_08-23-12	**Date Sampled:**	08/23/2012
Field ID Number:	N/A	**Date Received:**	08/24/2012
Sample Type:	Soil	**Date Analyzed:**	08/29/2012

Base / Neutrals	Results in ug / Kg	Base / Neutrals	Results in ug / Kg
Acenaphthene	< 317	Dibenz (a,h) anthracene	< 317
Anthracene	< 317	Fluoranthene	< 317
Benzo (a) anthracene	< 317	Fluorene	< 317
Benzo (a) pyrene	< 317	Indeno (1,2,3-cd) pyrene	< 317
Benzo (b) fluoranthene	< 317	Naphthalene	< 317
Benzo (g,h,i) perylene	< 317	Phenanthrene	< 317
Benzo (k) fluoranthene	< 317	Pyrene	< 317
Chrysene	< 317	Acenaphthylene	< 317
Diethyl phthalate	< 317	1,2-Dichlorobenzene	< 317
Dimethyl phthalate	< 794	1,3-Dichlorobenzene	< 317
Butylbenzylphthalate	< 317	1,4-Dichlorobenzene	< 317
Di-n-butyl phthalate	< 317	1,2,4-Trichlorobenzene	< 317
Di-n-octylphthalate	< 317	Nitrobenzene	< 317
Bis (2-ethylhexyl) phthalate	< 317	2,4-Dinitrotoluene	< 317
2-Chloronaphthalene	< 317	2,6-Dinitrotoluene	< 317
Hexachlorobenzene	< 317	Bis (2-chloroethyl) ether	< 317
Hexachloroethane	< 317	Bis (2-chloroisopropyl) ether	< 317
Hexachlorocyclopentadiene	< 317	Bis (2-chloroethoxy) methane	< 317
Hexachlorobutadiene	< 317	4-Bromophenyl phenyl ether	< 317
N-Nitroso-di-n-propylamine	< 317	4-Chlorophenyl phenyl ether	< 317
N-Nitrosodiphenylamine	< 317	Benzidine	< 794
N-Nitrosodimethylamine	< 317	3,3'-Dichlorobenzidine	< 317
Isophorone	< 317	4-Chloroaniline	< 317
Benzyl alcohol	< 794	2-Nitroaniline	< 794
Dibenzofuran	< 317	3-Nitroaniline	< 794
2-Methylnapthalene	< 317	4-Nitroaniline	< 794

ELAP Number 10958 Analytical Method: EPA 8270C Data File: S65009.D

Prep Method: EPA 3550C

Comments: ug / Kg = microgram per Kilogram

Signature: _____

Bruce Hoogesteger: Technical Director

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Volatile Analysis Report for Soils/Solids/Sludges

Client: Lu Engineers, Inc

Client Job Site:	Scio St	**Lab Project Number:**	12:3543
		Lab Sample Number:	12:3543-01
Client Job Number:	4226		
Field Location:	CS-08(13)_08-23-12	**Date Sampled:**	08/23/2012
Field ID Number:	N/A	**Date Received:**	08/24/2012
Sample Type:	Soil	**Date Analyzed:**	09/05/2012

Halocarbons	Results in ug / Kg
Bromodichloromethane	< 4.04
Bromomethane	< 4.04
Bromoform	< 10.1
Carbon Tetrachloride	< 4.04
Chloroethane	< 4.04
Chloromethane	< 4.04
2-Chloroethyl vinyl Ether	< 20.2
Chloroform	< 4.04
Dibromochloromethane	< 4.04
1,1-Dichloroethane	< 4.04
1,2-Dichloroethane	< 4.04
1,1-Dichloroethene	< 4.04
cis-1,2-Dichloroethene	< 4.04
trans-1,2-Dichloroethene	< 4.04
1,2-Dichloropropane	< 4.04
cis-1,3-Dichloropropene	< 4.04
trans-1,3-Dichloropropene	< 4.04
Methylene chloride	< 10.1
1,1,2,2-Tetrachloroethane	< 4.04
Tetrachloroethene	< 4.04
1,1,1-Trichloroethane	< 4.04
1,1,2-Trichloroethane	< 4.04
Trichloroethene	< 4.04
Trichlorofluoromethane	< 4.04
Vinyl chloride	< 4.04

Aromatics	Results in ug / Kg
Benzene	< 4.04
Chlorobenzene	< 4.04
Ethylbenzene	16.7
Toluene	< 4.04
m,p-Xylene	87.9
o-Xylene	17.7
Styrene	< 10.1
1,2-Dichlorobenzene	< 4.04
1,3-Dichlorobenzene	< 4.04
1,4-Dichlorobenzene	< 4.04

Ketones	Results in ug / Kg
Acetone	154
2-Butanone	< 20.2
2-Hexanone	< 10.1
4-Methyl-2-pentanone	< 10.1

Miscellaneous	Results in ug / Kg
Carbon disulfide	J 2.83
Vinyl acetate	< 10.1

ELAP Number 10958 Analytical Method: EPA 8260B Data File: X00150.D

Prep Method: EPA 5035A

Comments: ug / Kg = microgram per Kilogram

Signature:

Bruce Hoogesteger: Technical Director

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179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges (Additional STARS Compounds)

Client: Lu Engineers, Inc

Client Job Site:	Scio St	**Lab Project Number:**	12:3543
		Lab Sample Number:	12:3543-01
Client Job Number:	4226		
Field Location:	CS-08(13)_08-23-12	**Date Sampled:**	08/23/2012
Field ID Number:	N/A	**Date Received:**	08/24/2012
Sample Type:	Soil	**Date Analyzed:**	09/05/2012

Compound	Results in ug / Kg	Compound	Results in ug / Kg
n-Butylbenzene	120	1,2,4-Trimethylbenzene	333
sec-Butylbenzene	34.9	1,3,5-Trimethylbenzene	82.0
tert-Butylbenzene	< 4.04		
n-Propylbenzene	92.0	**Miscellaneous**	
Isopropylbenzene	27.9	Methyl tert-butyl Ether	< 4.04
p-Isopropyltoluene	23.2		
Naphthalene	87.8		

ELAP Number 10958 Analytical Method: EPA 8260B Data File: X00150.D

Prep Method: EPA 5035A

Comments: ug / Kg = microgram per Kilogram

Signature:

Bruce Hoogesteger: Technical Director

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179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges

Client: Lu Engineers, Inc

Client Job Site: Scio St
Client Job Number: 4226
Field Location: CS-09(11.5)_08-23-12
Field ID Number: N/A
Sample Type: Soil

Lab Project Number: 12:3543
Lab Sample Number: 12:3543-02
Date Sampled: 08/23/2012
Date Received: 08/24/2012
Date Analyzed: 09/06/2012

Halocarbons	Results in ug / Kg
Bromodichloromethane	< 32.7
Bromomethane	< 32.7
Bromoform	< 81.8
Carbon Tetrachloride	< 32.7
Chloroethane	< 32.7
Chloromethane	< 32.7
2-Chloroethyl vinyl Ether	< 164
Chloroform	< 32.7
Dibromochloromethane	< 32.7
1,1-Dichloroethane	< 32.7
1,2-Dichloroethane	< 32.7
1,1-Dichloroethene	< 32.7
cis-1,2-Dichloroethene	< 32.7
trans-1,2-Dichloroethene	< 32.7
1,2-Dichloropropane	< 32.7
cis-1,3-Dichloropropene	< 32.7
trans-1,3-Dichloropropene	< 32.7
Methylene chloride	< 81.8
1,1,2,2-Tetrachloroethane	< 32.7
Tetrachloroethene	< 32.7
1,1,1-Trichloroethane	< 32.7
1,1,2-Trichloroethane	< 32.7
Trichloroethene	< 32.7
Trichlorofluoromethane	< 32.7
Vinyl chloride	< 32.7

Aromatics	Results in ug / Kg
Benzene	< 32.7
Chlorobenzene	< 32.7
Ethylbenzene	< 32.7
Toluene	< 32.7
m,p-Xylene	< 32.7
o-Xylene	< 32.7
Styrene	< 81.8
1,2-Dichlorobenzene	< 32.7
1,3-Dichlorobenzene	< 32.7
1,4-Dichlorobenzene	< 32.7

Ketones	Results in ug / Kg
Acetone	B 338
2-Butanone	< 164
2-Hexanone	< 81.8
4-Methyl-2-pentanone	< 81.8

Miscellaneous	Results in ug / Kg
Carbon disulfide	< 32.7
Vinyl acetate	< 81.8

ELAP Number 10958
Analytical Method: EPA 8260B
Prep Method: EPA 5035A
Data File: X00170.D

Comments: ug / Kg = microgram per Kilogram

Signature:
Bruce Hoogesteger: Technical Director

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PARADIGM ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges (Additional STARS Compounds)

Client: Lu Engineers, Inc

Client Job Site:	Scio St	**Lab Project Number:**	12:3543
		Lab Sample Number:	12:3543-02
Client Job Number:	4226		
Field Location:	CS-09(11.5)_08-23-12	**Date Sampled:**	08/23/2012
Field ID Number:	N/A	**Date Received:**	08/24/2012
Sample Type:	Soil	**Date Analyzed:**	09/06/2012

Compound	Results in ug / Kg	Compound	Results in ug / Kg
n-Butylbenzene	76.8	1,2,4-Trimethylbenzene	< 32.7
sec-Butylbenzene	101	1,3,5-Trimethylbenzene	< 32.7
tert-Butylbenzene	< 32.7		
n-Propylbenzene	73.6	**Miscellaneous**	
Isopropylbenzene	< 32.7	Methyl tert-butyl Ether	< 32.7
p-Isopropyltoluene	< 32.7		
Naphthalene	< 81.8		

ELAP Number 10958 Analytical Method: EPA 8260B Data File: X00170.D
Prep Method: EPA 5035A

Comments: ug / Kg = microgram per Kilogram

Signature: _____
Bruce Hoogesteger: Technical Director

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ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges

Client: **Lu Engineers, Inc**

Client Job Site:	Scio St	**Lab Project Number:**	12:3543
		Lab Sample Number:	12:3543-03
Client Job Number:	4226		
Field Location:	CS-10(13)_08-23-12	**Date Sampled:**	08/23/2012
Field ID Number:	N/A	**Date Received:**	08/24/2012
Sample Type:	Soil	**Date Analyzed:**	09/05/2012

Halocarbons	Results in ug / Kg
Bromodichloromethane	< 4.17
Bromomethane	< 4.17
Bromoform	< 10.4
Carbon Tetrachloride	< 4.17
Chloroethane	< 4.17
Chloromethane	< 4.17
2-Chloroethyl vinyl Ether	< 20.8
Chloroform	< 4.17
Dibromochloromethane	< 4.17
1,1-Dichloroethane	< 4.17
1,2-Dichloroethane	< 4.17
1,1-Dichloroethene	< 4.17
cis-1,2-Dichloroethene	< 4.17
trans-1,2-Dichloroethene	< 4.17
1,2-Dichloropropane	< 4.17
cis-1,3-Dichloropropene	< 4.17
trans-1,3-Dichloropropene	< 4.17
Methylene chloride	< 10.4
1,1,2,2-Tetrachloroethane	< 4.17
Tetrachloroethene	< 4.17
1,1,1-Trichloroethane	< 4.17
1,1,2-Trichloroethane	< 4.17
Trichloroethene	< 4.17
Trichlorofluoromethane	< 4.17
Vinyl chloride	< 4.17

Aromatics	Results in ug / Kg
Benzene	< 4.17
Chlorobenzene	< 4.17
Ethylbenzene	< 4.17
Toluene	< 4.17
m,p-Xylene	< 4.17
o-Xylene	< 4.17
Styrene	< 10.4
1,2-Dichlorobenzene	< 4.17
1,3-Dichlorobenzene	< 4.17
1,4-Dichlorobenzene	< 4.17

Ketones	Results in ug / Kg
Acetone	B 64.1
2-Butanone	< 20.8
2-Hexanone	< 10.4
4-Methyl-2-pentanone	< 10.4

Miscellaneous	Results in ug / Kg
Carbon disulfide	< 4.17
Vinyl acetate	< 10.4

ELAP Number 10958 Analytical Method: EPA 8260B Data File: X00151.D

Prep Method: EPA 5035A

Comments: ug / Kg = microgram per Kilogram

Surrogate outliers indicate probable matrix interference

Signature: _____

Bruce Hoogesteger, Technical Director

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges (Additional STARS Compounds)

Client: Lu Engineers, Inc

Client Job Site:	Scio St	**Lab Project Number:**	12:3543
		Lab Sample Number:	12:3543-03
Client Job Number:	4226		
Field Location:	CS-10(13)_08-23-12	**Date Sampled:**	08/23/2012
Field ID Number:	N/A	**Date Received:**	08/24/2012
Sample Type:	Soil	**Date Analyzed:**	09/05/2012

Compound	Results in ug / Kg	Compound	Results in ug / Kg
n-Butylbenzene	< 4.17	1,2,4-Trimethylbenzene	< 4.17
sec-Butylbenzene	< 4.17	1,3,5-Trimethylbenzene	< 4.17
tert-Butylbenzene	< 4.17		
n-Propylbenzene	< 4.17	**Miscellaneous**	
Isopropylbenzene	< 4.17	Methyl tert-butyl Ether	< 4.17
p-Isopropyltoluene	< 4.17		
Naphthalene	< 10.4		

ELAP Number 10958 Analytical Method: EPA 8260B Data File: X00151.D

Prep Method: EPA 5035A

Comments: ug / Kg = microgram per Kilogram

Surrogate outliers indicate probable matrix interference

Signature:

Bruce Hoogesteger: Technical Director

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PARADIGM ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges

Client: Lu Engineers, Inc

Client Job Site: Scio St
Client Job Number: 4226
Field Location: N/A
Field ID Number: N/A
Sample Type: Soil

Lab Project Number: 12:3543
Lab Sample Number: PB 08/24
Date Sampled: N/A
Date Received: N/A
Date Analyzed: 09/05/2012

Halocarbons	Results in ug / Kg
Bromodichloromethane	< 4.00
Bromomethane	< 4.00
Bromoform	< 10.0
Carbon Tetrachloride	< 4.00
Chloroethane	< 4.00
Chloromethane	< 4.00
2-Chloroethyl vinyl Ether	< 20.0
Chloroform	< 4.00
Dibromochloromethane	< 4.00
1,1-Dichloroethane	< 4.00
1,2-Dichloroethane	< 4.00
1,1-Dichloroethene	< 4.00
cis-1,2-Dichloroethene	< 4.00
trans-1,2-Dichloroethene	< 4.00
1,2-Dichloropropane	< 4.00
cis-1,3-Dichloropropene	< 4.00
trans-1,3-Dichloropropene	< 4.00
Methylene chloride	< 10.0
1,1,2,2-Tetrachloroethane	< 4.00
Tetrachloroethene	< 4.00
1,1,1-Trichloroethane	< 4.00
1,1,2-Trichloroethane	< 4.00
Trichloroethene	< 4.00
Trichlorofluoromethane	< 4.00
Vinyl chloride	< 4.00

Aromatics	Results in ug / Kg
Benzene	< 4.00
Chlorobenzene	< 4.00
Ethylbenzene	< 4.00
Toluene	< 4.00
m,p-Xylene	< 4.00
o-Xylene	< 4.00
Styrene	< 10.0
1,2-Dichlorobenzene	< 4.00
1,3-Dichlorobenzene	< 4.00
1,4-Dichlorobenzene	< 4.00

Ketones	Results in ug / Kg
Acetone	J 10.0
2-Butanone	< 20.0
2-Hexanone	< 10.0
4-Methyl-2-pentanone	< 10.0

Miscellaneous	Results in ug / Kg
Carbon disulfide	< 4.00
Vinyl acetate	< 10.0

ELAP Number 10958
Analytical Method: EPA 8260B
Prep Method: EPA 5035A
Data File: X00149.D

Comments: ug / Kg = microgram per Kilogram

Signature:
Bruce Hoogesteger: Technical Director

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ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges (Additional STARS Compounds)

Client: **Lu Engineers, Inc**

Client Job Site:	Scio St	**Lab Project Number:**	12:3543
		Lab Sample Number:	PB 08/24
Client Job Number:	4226		
Field Location:	N/A	**Date Sampled:**	N/A
Field ID Number:	N/A	**Date Received:**	N/A
Sample Type:	Soil	**Date Analyzed:**	09/05/2012

Compound	Results in ug / Kg	Compound	Results in ug / Kg
n-Butylbenzene	< 4.00	1,2,4-Trimethylbenzene	< 4.00
sec-Butylbenzene	< 4.00	1,3,5-Trimethylbenzene	< 4.00
tert-Butylbenzene	< 4.00		
n-Propylbenzene	< 4.00	**Miscellaneous**	
Isopropylbenzene	< 4.00	Methyl tert-butyl Ether	< 4.00
p-Isopropyltoluene	< 4.00		
Naphthalene	< 10.0		

ELAP Number 10958 Analytical Method: EPA 8260B Data File: X00149.D
Prep Method: EPA 5035A

Comments: ug / Kg = microgram per Kilogram

Signature: _____
Bruce Hoogesteger: Technical Director

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PARADIGM ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue
Rochester, NY 14608
(585) 647-2530 • (800) 724-1997
FAX: (585) 647-3311

CHAIN OF CUSTODY

REPORT TO:
COMPANY: Lu Engineers
ADDRESS: 175 Sullys Trail Suite 202
CITY: Pittsford STATE: NY ZIP: 14534
PHONE: 385-7417 FAX:
ATTN: E. Detweiler / Greg Andrus

INVOICE TO:
COMPANY: SAME
ADDRESS:
CITY: STATE: ZIP:
PHONE: FAX:
ATTN:

LAB PROJECT #: 12.3543
CLIENT PROJECT #: 4226
TURNAROUND TIME: (WORKING DAYS) STD 10 OTHER ☐1 ☐2 ☐3 ☐5 ☒
QUOTE #:

PROJECT NAME/SITE NAME: Scio St per Jor mw 8/24/12

COMMENTS: email results to: E. Detweiler / Greg Andrus / Jane Forbes ★ASP Cat B w/ Equis EDD

REQUESTED ANALYSIS

	DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	NUMBER CONTAINERS	TCL VOCs 8260+STARS	SVOCs 8270 B/N								REMARKS	PARADIGM LAB SAMPLE NUMBER
1	8/23/12	9:30	X		CS-08(13)_08-23-12	soil	1	X	X								PID readings 5-20 ppm	01
2	8/23/12	11:30	X		CS-09(11.5)_08-23-12	↓	1	X	X								PID readings 200-800 ppm	02
3	8/23/12	12:45	X		CS-10(13)_08-23-12	↓	1	X	X								PID readings 5-15 ppm	03
4																		
5																	★Do not need ASP	
6																	Cat B hardcopy, only	
7																	electronic	
8																		
9																		
10																	SDG# 3491-01	

LAB USE ONLY BELOW THIS LINE

Sample Condition: Per NELAC/ELAP 210/241/242/243/244

Receipt Parameter	NELAC Compliance	
Container Type: Comments:	Y ☐	N ☐
Preservation: Comments:	Y ☐	N ☐
Holding Time: Comments:	Y ☐	N ☐
Temperature: Comments: 3°C iced 8/24 @1347 from samples	Y ☐	N ☐

Sampled By: E. Detweiler	Date/Time: 8/23/12	
Relinquished By: [signature]	Date/Time: 8/24/12 12:57	Total Cost:
Received By: [signature]	Date/Time: 8/24/12 1257	P.I.F.
Received @ Lab By: [signature]	Date/Time: 8/24/12 1503	

PARADIGM

Chain of Custody Supplement

Client: Lu

Completed by: EAH

Lab Project ID: 12:3543

Date: 8/24

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	Yes	No	N/A
	NELAC compliance with the sample condition requirements upon receipt		
Container Type	X	X for voaprep	
Comments			
Transferred to method-compliant container	X for voaprep		X
Headspace (<1 mL)			X
Comments			
Preservation			X
Comments			
Chlorine Absent (<0.10 ppm per test strip)			X
Comments			
Holding Time	X		
Comments			
Temperature	X		
Comments	3°C iced @ 1347 8/24 from samples		
Sufficient Sample Quantity	X		
Comments			