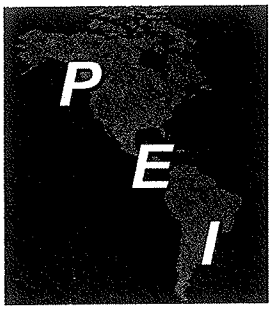

Panamerican
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2390 Clinton St.
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SITE INVESTIGATION/ REMEDIAL REPORT

ZURBRICK ROAD SITE DEPEW, NEW YORK

Prepared for:

Village of Depew
85 Manitou Street
Depew, New York 14043

Prepared by:

Panamerican Environmental, Inc.
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and

URS Corporation, Inc.
282 Delaware Avenue
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June 2004

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June 2004

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EXECUTIVE SUMMARY

The Village of Depew (Village) has contracted Panamerican Environmental, Inc. (PEI) and its teaming partner URS Corporation (URS) to conduct a site investigation and recommend remedial alternatives for the Zurbrick Road site (Figure 1).

The objective of the site investigation/remedial program was to delineate the nature and extent of contamination recently identified during the Corp of Engineers creek bank stabilization project and then, using the findings of the site investigation, develop remedial alternatives to remediate the site. The site investigation/remedial program was conducted in accordance with the requirements of the New York State Department of Environmental Conservation's (NYSDEC) Voluntary Cleanup Agreement (VCA) program. However, the site investigation portion of the program identified more wide spread contamination than expected. Due to this, the Village has elected to transfer the program related to expanding the investigation beyond the limits of this study to the NYSDEC. For this reason the original scope was not completed through the final selection of a site remedy. Additional investigations and development of final remedial alternatives will be completed under a follow-up NYSDEC program. This report documents the investigation portion of the work within the original site boundaries and discusses general remedial alternatives as they relate to the contaminated soils within the site study boundaries.

The project site (Site) is a 1.33+/- acre parcel owned by the Village of Depew and located at the southern tip of the Village of Depew's Department of Public Works property located at 315 Borden Road. The Site is bounded to the south, east and west by Cayuga Creek, and to the north by an Overflow Retention Facility owned by Erie County Sewer and Water District (refer to Figure 2). Zurbrick Road runs east-west immediately south of Cayaga Creek. At the southern tip of the Site. The Site forms the southern perimeter of the former Village of Depew landfill.

Historic Information has indicated that the property was operated as a municipal landfill by the Village of Depew between 1940 and 1961 at which time landfill operations ceased. The landfill received approximately 10,000 tons per year of municipal waste during this time period. The Village also incinerated household garbage on the property and the by-product ash was placed in the landfill including the project site area.

In 2001 the US Army Corps of Engineers (USCOE) began a creek bank stabilization project which required excavation of a section of the Site to access the creek bank. Fill material composed of debris and ash was encountered during excavation. Excavation work was stopped and samples of the fill material were collected through test pit programs conducted by the USCOE in September and November of 2001. The analytical results indicated elevated concentrations of lead in the soil and ash fill. Subsequently, the USCOE suspended all operations related to the creek bank stabilization project to await the outcome of this investigation program.

Site investigation activities at the Site completed under this program consisted of the following tasks:

- Conducting a site boundary and topographic survey of the Site;
- Collection of nine (9) discrete surface soil samples at test pit locations;
- Excavation of ten (10) test pits across the Site;
- Collection of ten (10) discrete subsurface soil samples from test pits;
- Collection of a total of six (6) groundwater samples from test pits;
- Collection of five (5) sediment samples from Cayuga Creek.

Based on the Corps of Engineers 2001 sampling program, lead was established as the principal contaminant of concern and was the focus of the analytical program. However, select soil samples were also analyzed for Target Analyte List (TAL) metals/cyanide and Target Compound List (TCL) semi-volatile organic compounds (SVOCs) to establish the concentrations of other compounds that may exist at the site.

A total of four (4) surface soil samples and six (6) test pit subsurface soil samples were submitted for TAL metals/cyanide and TCL semi-volatile organic compounds (SVOCs) analyses. A total of five (5) surface soil samples and four (4) test pit subsurface soil samples were submitted for Total Lead analysis.

Lead was detected in all surface and subsurface soil samples analyzed for Total Lead. Elevated concentrations of lead, above NYSDEC TAGM levels, were detected in two of the nine surface soil samples and four of the ten subsurface samples. In accordance with the workplan, to determine if the soils with elevated lead concentrations should be classified as a hazardous material, TCLP Lead analysis was performed on four soil samples (2-surface & 2-subsurface) whose total lead concentration exceeded 1,500 ppm. The TCLP lead concentration for all four samples exceeded the TCLP-Maximum Concentration Limit (MCL) for lead thereby classifying the materials as hazardous. The results imply that both surface soils and soils at depth in the areas tested are contaminated with lead at levels which meet hazardous waste classification.

A number of metal compounds other than lead were detected in surface and subsurface soil samples. The concentrations of several metals exceeded NYSDEC TAGM cleanup values and Eastern USA Background ranges in both surface and subsurface samples.

Numerous semi-volatile organic compounds (SVOCs) consisting primarily of polycyclic aromatic hydrocarbons (PAHs) were detected in the surface and subsurface soil samples at concentrations slightly above NYSDEC TAGM levels. PAH compounds detected in soil are

common constituents of fill material in landfills with ash material environments. The concentration levels detected at the site are comparable to background levels noted in studies of other industrial and non-industrial sites.

Lead was detected in all of the groundwater samples collected from test pits at concentrations above the TOGs groundwater guidance limitation value. Preservative was inadvertently added in the field to the samples to be filtered in the laboratory, thereby, distorting the filtered analytical results. However, even with this distortion the data is still useful as an indicator. Because of the high lead levels detected, that even if the preservative had not been added to the filtered samples, most likely the results would still have exceeded the TOGS value.

A total of five sediment samples were collected from Cayuga Creek sediments and analyzed for total lead. An elevated concentration of lead, above the NYSDEC TAGM level, was detected in only one of the sediment samples. This sample was the furthest down-stream sample collected at the west end of the site.

In summary, the site investigation identified elevated concentrations above NYSDEC TAGM levels of lead in both surface and subsurface soil samples. Two surface and two subsurface soil samples also failed TCLP for lead. The results imply that both surface soils and soils at depth in the areas tested are contaminated with lead at levels which meet hazardous waste classification. One of the soil samples that failed TCLP for lead was from a test pit adjacent the northern boundary of the study area. Similar landfill material has been observed north of the site boundary leading to the possibility that contamination may extend beyond the present study boundary requiring further investigation. The program also identified elevated concentrations above NYSDEC TAGM levels of SVOCs and other metal compounds in the soils across the site. The concentrations of these compounds were, in general, slightly above guidance values with a few exceptions. All six groundwater samples collected from test pits and analyzed for lead exceeded NYSDEC TOGS limitations for groundwater quality. One of the five creek sediment samples collected had an elevated concentration of lead above the NYSDEC TAGM level.

Based on the site investigation, preliminary remedial alternatives were identified designed to prevent contact, ingestion or inhalation of potentially impacted site soils. Three alternatives were identified as follows:

- Alternative 1 - No Action;
- Alternative 2 - Excavation and off-site disposal of soils;
- Alternative 3 - Excavation and on-site disposal of creek bank soils, new creek perimeter berm and capping the site .

The report describes each of these alternatives as they would apply to the study area only. These alternatives may change upon completion of an expanded investigation of possible soil contamination north of the study area.

1.0 INTRODUCTION

The Village of Depew (Village) has contracted Panamerican Environmental, Inc. (PEI) and its teaming partner URS Corporation (URS) to conduct a site investigation and recommend remedial alternatives for the Zurbrick Road site (Figure 1). The objective of the site investigation/remedial program was to delineate the nature and extent of contamination recently identified during the Corp of Engineers creek bank stabilization project and then, using the findings of the site investigation, develop remedial alternatives to remediate the site. The site investigation/remedial program was conducted in accordance with the requirements of the New York State Department of Environmental Conservation's (NYSDEC) Voluntary Cleanup Agreement (VCA) program. However, the site investigation portion of the program identified more wide spread contamination than expected. Due to this, the Village has elected to transfer the program related to expanding the investigation beyond the limits of this study to the NYSDEC. For this reason the original scope was not completed through the final selection of a site remedy. Additional investigations and development of final remedial alternatives will be completed under a follow-up NYSDEC program. This report documents the investigation portion of the work within the original site boundaries and discusses general remedial alternatives as they relate to the contaminated soils within the site study boundaries.

1.1 Purpose of Report

The purpose of this report is to concisely present a summary of the site investigation activities and findings, along with a general evaluation of remedial alternatives.

1.2 Site History and Description

The project site (Site) is a 1.33+/- acre parcel owned by the Village of Depew and located at the southern tip of the Village of Depew's Department of Public Works property located at 315 Borden Road. The Site is bounded to the south, east and west by Cayuga Creek, and to the north by an Overflow Retention Facility owned by Erie County Sewer and Water District (refer to Figure 2). Zurbrick Road runs east-west immediately south of Cayaga Creek. At the southern tip of the Site. The Site forms the southern perimeter of the former Village of Depew landfill.

Two environmental assessment reports have been completed on the Depew landfill property, including: a Erie County DEP Hazardous Waste Site Profile Report, 315 Borden Road, Depew, dated April 22, 1985 and a Inactive Hazardous Waste Site Phase I Investigation Report, Village of Depew Landfill NYS Site Number 915105 prepared for NYSDEC-Division of Solid and Hazardous Waste by Engineering-Science/ Dames & Moore, dated January 1988.

Information provided in the above reports suggest that the property was operated as a municipal landfill by the Village of Depew between 1940 and 1961 at which time landfill operations ceased. The landfill received approximately 10,000 tons per year of municipal waste during this time period. According to Mr. Robert Kucewicz, Village Administrator, the Village also incinerated household garbage on the property and the by-product ash was placed in the landfill

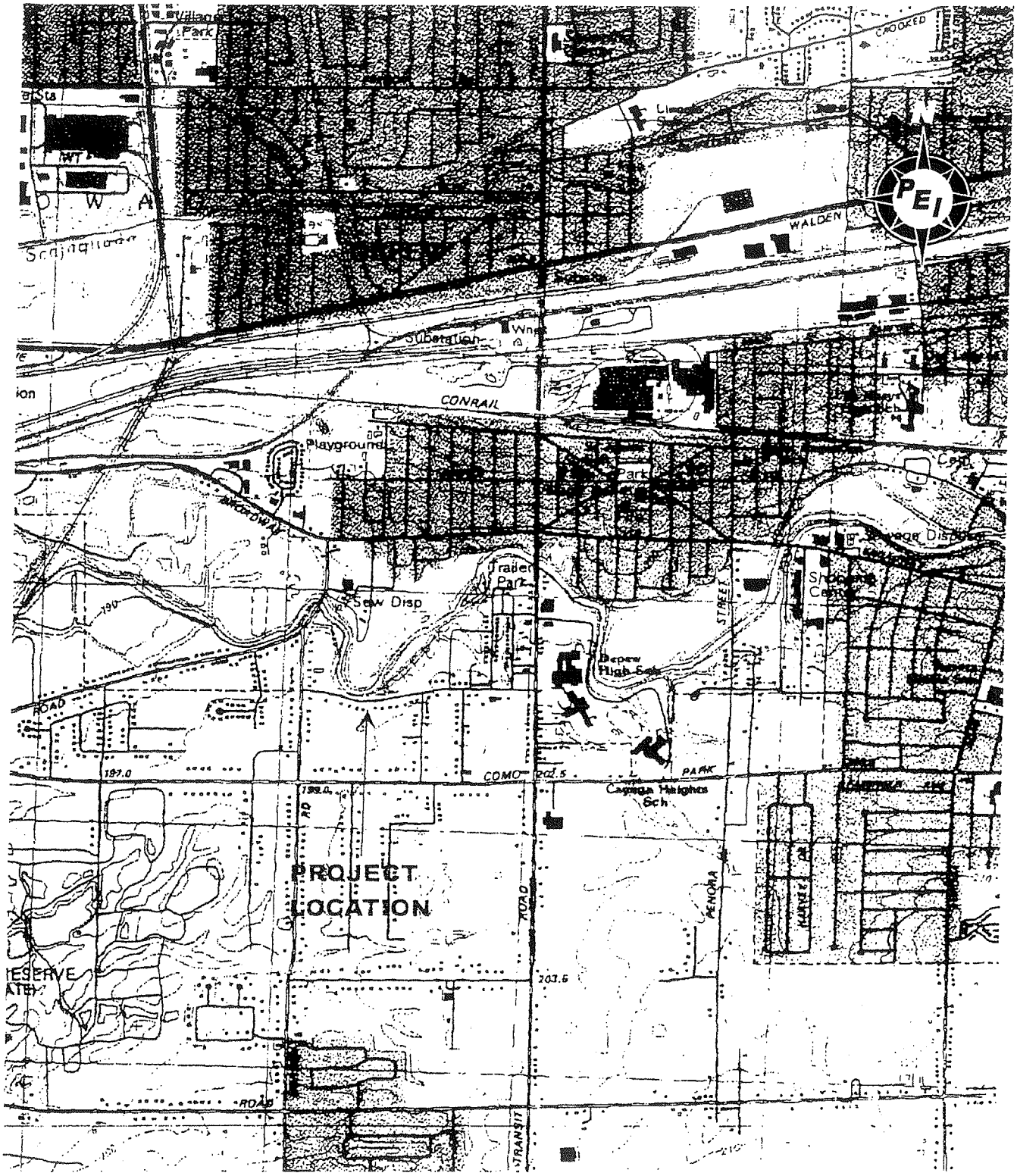

Figure 1. Project location *(USGS 7.5' Quadrangle, Lancaster, NY, 1988 [1965]).*

LEGEND

▲ EXISTING NYSDOT R.O.W. MONUMENT

N

BROADWAY
N.Y.S. RTE. 130
S.H. No. 916

℄ PER NYSDOT

13.700m=44.947'
REC & MEAS

14.400m=43.64'
REC & MEAS

FORMER SOUTHERLY LINE OF BROADWAY AVENUE PER MAP COVER 890

12.2m=40.00'
REC & MEAS

MAP 54
PARCEL 57

MAP 52
PARCEL 55

EXISTING IRON PIPE
0.34' WEST

EXISTING IRON
PIPE

EXISTING TRAVELED WAY
50' WIDE

RUTHERFORD PLACE
1403.50' DEED & MEAS.
(10981 P 6745)

MAP COVER 890

MAP COVER 890

LANDS OF THE
VILLAGE OF DEPEW
LIBER 3716 PAGE 209
& LIBER 4105 PAGE 559

109°-15' DEED
& MEAS.

182.0' DEED
& MEAS.

90°

332.8' DEED & MEAS.

LANDS CONVEYED TO
THE COUNTY OF ERIE
SEWER DISTRICT NO. 4
LIBER 10981 PAGE 6745

85.1'±

373'± DEED
486.1'± MEAS.

291.2'± MEAS

SET IRON PIN
WITH CAP 0.16'
SOUTH

SET IRON PIN
WITH CAP 0.16' SOUTH

CAYUGA ±640'

1.33± ACRES

CREEK

EXISTING TOP OF BANK

EXISTING EDGE OF SHORE

SEE ENLARGED AREA

SURVEY MAP

250' 0 250'

SCALE: 1" = 250'-0"

NOTES:

1. VILLAGE OF DEPEW HAS ACQUIRED TITLE TO SUBJECT PARCEL BY DEEDS FILED IN ERIE COUNTY CLERK'S OFFICE IN LIBER 3716 PAGE 209 AND LIBER 4105 PAGE 559, BOTH DEEDS REFERENCE MAP COVER 890 BY FREDERICK K. WANG FILED MAY 26, 1913. MAP COVER 890 INDICATES AN AREA LABELED AS "MILL RACE" AS AN EXCEPTION TO THE MAP, HOWEVER NO DIMENSIONS OF THIS PARCEL ARE SHOWN AND NO PHYSICAL EVIDENCE IS VISIBLE IN THE FIELD.
2. SOUTHERLY LINE OF BROADWAY HAS BEEN ESTABLISHED FROM NOTICES OF APPROPRIATION BY THE PEOPLE OF THE STATE OF NEW YORK AND SHOWN ON MAP 52 PARCEL 55, MAP 53 PARCEL 58 AND MAP 54 PARCEL 57.
3. CONTOUR INFORMATION HAS BEEN DIGITIZED FROM ARMY CORPS OF ENGINEERS DRAWING NO. 01-ZUR-1/2 DATED 5/31/01.
4. TEST PIT ELEVATIONS BASED ON BENCHMARK PROVIDED BY U.S. ARMY CORPS OF ENGINEERS DRAWING NO. 01-ZUR-1/2.

KEY

ZR – ZURBRICK ROAD

TP – TEST PIT

SED – SEDIMENT SAMPLE

N

ZR-SED-01

50'

ZR-SED-02

EXISTING FENCE

SET IRON PIN
WITH CAP 0.16'
SOUTH

SOUTHERLY LINE OF LANDS CONVEYED TO THE COUNTY OF ERIE SEWER DISTRICT NO. 4 LIBER 10981 PAGE 6745

SET IRON PIN
WITH CAP 0.16' SOUTH

ZR-SED-05

140'

ZR-TP-11. GRND.
EL. 544

ZR-TP-07 GRND.
EL. 548

ZR-TP-03 GRND.
EL. 546

TOP OF SLOPE

EDGE OF SHORE

1.33± ACRES

ZR-TP-01
GRND. EL. 542

ZR-TP-08
GRND. EL. 544

ZR-TP-02
GRND. EL. 542

ZR-TP-12
GRND. EL. 545

ZR-TP-05 GRND.
EL. 545

540

ZR-SED-03

ZR-TP-09
GRND. EL. 547

ZR-TP-06
GRND. EL. 553

550

TOP OF SLOPE

JUNE 2003

EDGE OF SHORE

EDGE OF SHORE AT DATE OF SURVEY

FLOW

CAYUGA

540

550

ZR-SED-04

CREEK

540

550

EDGE OF SHORE

ENLARGED AREA

20' 0 20'

SCALE: 1" = 20'-0"

NOTES:

1. UNAUTHORIZED ALTERATION OR ADDITION TO ANY SURVEY, DRAWING, DESIGN, SPECIFICATION, PLAN, OR REPORT IS A VIOLATION OF SECTION 7209, PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW.
2. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE AND IS SUBJECT TO ANY STATE OF FACTS THAT MAY BE REVEALED BY AN EXAMINATION OF SUCH.

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION

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DRAWN BY: EJH
CHECKED BY: SB
PROJ. MGR. BH

URS Corporation
New York
282 Delaware Avenue Buffalo, New York 14202
Phone (716)856-5636 Fax (716)856-2545

JOB No. 11173107.00000

THIS MAP VOID UNLESS EMBOSSED WITH NEW YORK STATE LICENSED LAND SURVEYORS SEAL NO. 49933

VILLAGE OF DEPEW, COUNTY OF ERIE AND STATE OF NEW YORK

ZURBRICK ROAD, DEPEW
SITE INVESTIGATION/REMEDIAL PROGRAM

ZURBRICK ROAD
SITE INVESTIGATION

Scale: AS NOTED | Date: JUNE 2003 | FIGURE 2

H:\11173107.00000\CAD\DRAFT\ DC-10045.dwg 1=1 7/31/03-4 PAL

including the project site area. In 1984 the County of Erie acquired 14.5 acres of the Village property adjacent to and north of Cayuga Creek which included the project site. The County of Erie subsequently constructed a 5 million gallon overflow retention facility on a portion of this property, which is in use to this day. To construct the retention facility approximately 60,000 cubic yards of wastes were removed to the BFI landfill in Tonawanda, New York. Subsequent to the construction of the retention facility, the village of Depew re-acquired the 14.5 acre Erie County parcel with the exception of the 5 acres of land related to the retention basin area. The property was re-acquired for general use by their Department of Public Works. The re-acquired parcel also included the project site (refer to Figure 2).

According to the Erie County DEP Hazardous Waste Site Report, April 1985, the landfill property was listed in the New York State Department of Environmental Conservation (NYSDEC) December 1983 Appendix Volume 3 of Hazardous Waste Sites in New York State, Site # 915105. The above referenced Phase 1 Investigation Report completed for NYSDEC in January 1988 recommended that a Phase ll investigation be undertaken to collect and analyze site soils, creek sediments, groundwater and creek surface waters. The historic records reviewed do not indicate that a Phase ll investigation was ever completed. A NYSDEC document prepared by Mr. Shaun H. Folkerts, Intern, dated June 8, 1993 stated that the site was delisted on October 11, 1990. The document stated that the reason for delisting was that there was no record of hazardous waste having been disposed of at the landfill and sampling found no contaminants indicative of hazardous waste. The document also stated that "foundry sand with supposed phenols was sampled and revealed toxicity that was less than characteristic waste levels".This document also states that the matter was referred to the Division of Solid Waste on January 8, 1991 for proper closure under 6NYCRR Part 360. The historic records do not indicate that any additional work was performed at the landfill site up to a recent US Army Corps of Engineers project.

In 2001 the US Army Corps of Engineers (USCOE) began a creek bank stabilization project which required excavation of a section of the Site to access the creek bank. Fill material composed of debris and ash was encountered during excavation. Excavation work was stopped and samples of the fill material were collected through test pit programs conducted by the USCOE in September and November of 2001. The analytical results indicated elevated concentrations of lead in the soil and ash fill (refer to Appendix A - USCOE Analytical Results). Subsequently, the USCOE suspended all operations related to the creek bank stabilization project to await the outcome of this investigation program.

2.0 SITE INVESTIGATION

2.1 Introduction

Site investigation activities at the Site completed under this program consisted of the following tasks:

- Conducting a site boundary and topographic survey of the Site;
- Collection of discrete surface soil samples;
- Excavation of test pits across the Site;
- Collection of discrete subsurface soil samples from test pits;
- Collection of groundwater samples from test pits;
- Collection of sediment samples from Cayuga Creek.

All of the above activities (except the collection of creek sediment samples due to high creek water level) were conducted on June 10, 2003. Sediment sampling of Cayuga Creek was conducted on July 15, 2003.

2.2 Site Boundary and Topographic Survey

PEI/URS completed a site boundary and topographic survey of the site. The survey incorporated USCOE topographic survey data where available and applicable. At the completion of the field activities, the horizontal location and vertical elevation of all test trenches were surveyed and are shown on Figure 2 .

2.3 Surface and Subsurface Investigation

2.3.1 Surface Soil Sampling

Test pit locations were layed out in the field to provide a representative cross section of the Site. Surface soil samples were collected at nine (9) of the ten test pit locations establised across the Site. At the start of each test pit excavation the top two inches of soil was scraped off by the backhoe and a surface soil sample collected at the resulting surface (refer to Figure 2 for test pit locations). No surface or test pit subsurface soil samples were collected at Test Pit No. 6 excavated in a mounded area composed of topsoil from the initiation of the creek stabilization program.

All sampling was performed in accordance with the Site Investigation/Remedial Program approved work plan. Analytical results for surface soil samples are presented and discussed in section 3.2 of this report.

2.3.2 Test Pit Installation and Sampling

A total of ten (10) test pits were excavated using a track-mounted backhoe with a three foot bucket to depths that ranged from 7 to 16 feet below ground surface (bgs). Subsurface soil samples were collected from all the test pits except TP-06 as discussed in Section 2.3.1. A total of ten (10) discrete soil samples were collected from the test pits. The locations of the test pits selected were subject to accessibility, but in general, were placed to provide coverage across the entire site (refer to Figure 2).

The test pits were terminated when natural soil, bedrock or groundwater was encountered. Soil from each test pit was described and screened for volatile organic vapors (VOCs) using a Photoionization detector (PID). Stratification of material in the test pits and observations were noted on test pit logs (refer to Appendix B for Test Pit Logs). Photographs of investigation activities are presented in Appendix C.

Descrete subsurface soil samples were obtained at locations within test pits where indications of contamination existed (visual, PID or odors). No samples were collected from below the groundwater table.

The test pit program revealed that the site geology consists of primarily fill material. The area appears to have been partially capped with a mixture of topsoil and sandy silt which varied in thickness from a few inches to as much as two feet. The topsoil layer was underlain by fill material primarily related to the landfill and was composed of rust and black colored ash, glass bottles/fragments and assorted metal, cans, plastic and rubberized materials. The landfill related fill material ranged from just beneathe the surface (TP-08 & TP-09) to as deep as 14 feet (TP-07). The fill material was underlain by a grey, sandy silt. Groundwater was encountered in six of the test pits, primarily at the level of the creek. Water was encountered at a higher elevation than the creek in test pit TP-08 where it appeared to be perched in a porous layer of fill material (hoses, gaskets, plastics, bottles, etc.). Bedrock was encounterted in only one test pit, TP-01, at the lowest end of the Site, at approximately 7.5 feet bgs.

The analytical results from the test pit soil sampling program are discussed in section 3.2.

2.3.3 Groundwater Sampling

A total of six (6) groundwater samples were collected, two from each of three test pits (TP-01, TP-09 and TP-11). Samples were collected from groundwater that accumulated at the bottom of each test pit. One of the two samples from each test pit was unfiltered and the other was filtered

at the laboratory. Preservative, however, was inadvertantly added to the sample to be filtered in the laboratory, thereby, distorting the filtered analytical results.

The analytical results from the groundwater sampling program are presented and discussed in section 3.4.

2.4 Sediment Sampling

A total of five (5) sediment samples were collected from the Cayuga Creek bed; one upstream, two adjacent to the property; and two downstream (refer to Figure 2). Sediment samples were collected by wading into the creek at each sample location beginning at the downstream sampling location ZR-SED-01 and while facing upstream, scooping the sample from along the bottom of the creek bed in the upstream direction. All samples were collected in this manor in a progression upstream to the last sampling location ZR-SED-05 (refer to Figure 2). Because of scour and high flow rate, very little sediment existed at the creek bed level. Therefore, sediment samples consisted of primarily sand and gravel.

The analytical results from the sediment sampling program are presented and discussed in section 3.3.

3.0 NATURE AND EXTENT OF CONTAMINATION

3.1 Introduction

This section discusses the results of the site investigation activities, in particular, the nature and the extent of contaminants in the media investigated (soils, groundwater and creek sediments) All samples were analyzed in accordance with NYSDEC Analytical Services Protocol (ASP) 10/95 Edition, with Category B deliverables. All analytical data was validated and Data Usability Summary Reports (DUSRs) prepared (refer to Appendix E).

3.2 Surface and Subsurface Soils

Test pits were located and soil samples (surface and subsurface) selected for analysis that represented a cross-section of the site. Based on the Corps of Engineers 2001 sampling program, lead was established as the principal contaminant of concern and was the focus of the analytical program. However, select soil samples were also analyzed for Target Analyte List (TAL) metals/cyanide and Target Compound List (TCL) semi-volatile organic compounds (SVOCs) to establish the concentrations of other compounds that may exist at the site.

A total of four (4) surface soil samples and six (6) test pit subsurface soil samples were submitted for TAL metals/cyanide and TCL semi-volatile organic compounds (SVOCs) analyses. A total of five (5) surface soil samples and four (4) test pit subsurface soil samples were submitted for Total Lead analysis. Based on results of lead analysis, a Toxicity Characteristic Leaching Procedure (TCLP) for lead was performed on four (4) soil samples (two surface and two subsurface) that exceeded 1,500 ppm lead levels during the initial testing. A summary of the TAL Metals and TCL SVOC analytical results for detected compounds in the surface and subsurface soil samples is provided in Table 1. A summary of the the lead and TCLP lead analytical results for the surface and subsurface soil samples is provided in Table 2.

Metal Compounds (excl. lead)

A number of metal compounds other than lead (lead is discussed in next section) were detected in surface and subsurface soil samples. Metal compound concentration levels were similar in both the surface and subsurface soil samples (refer to Table 1).The concentrations of several metals exceeded NYSDEC TAGM cleanup values and Eastern USA Background ranges in both surface and subsurface samples as high-lighted in Table 1.

Most metals are naturally present in soil and fill materials. Concentrations of metals in soil and fill exhibit considerable variability, both stratigraphically and spatially. This variability is related to the composition of the fill, natural soils' origin, weathering processes that chemically and physically modify soil and, groundwater interactions that modify the geochemistry.

TABLE 1 SUMMARY TABLE - ANALYTICAL RESULTS
ZURBRICK ROAD SITE - SURFACE / SUBSURFACE SOIL SAMPLES
DEPEW, NEW YORK

											NYSDEC REC. Soil	Eastern
	ZR-SS-01	ZR-SS-02	ZR-SS-05	ZR-SS-11	ZR-TP-02	ZR-TP-03	ZR-TP-07	ZR-TP-08	ZR-TP-09	ZR-TP-11	Cleanup Values	USA
Sample Depth (bgs)	SURFACE	SURFACE	SURFACE	SURFACE	3.5-5.5'	5.5-9'	7'	5'	8'	2-4'	TAGM	Background
Compounds	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg (ppm)	mg/kg
TAL Metals												
Aluminum	7130	9040	7110	5260	5840	5830	4410	5930	4800	5150	SB	33,000
Antimony	NDJ	NDJ	NDJ	NDJ	5.2 BJ	4.2 BJ	2.3 BJ	5 BJ	17.3 J	NDJ	SB	NA
Arsenic	5.1 J	6.3 J	4.3 J	4.8 J	**87.5 J**	**11.6 J**	5.5 J	1.9 J	**30.2 J**	4.4 J	7.5 or SB	3.0-12
Barium	54.3	72.8	77.1	49.4	100	**341**	125	80.3	284	80.3	300 or SB	15-600
Beryllium	**0.37**	**0.47 B**	**0.39 B**	**0.29 B**	**0.23 B**	**0.23 B**	**0.27 B**	**0.42 B**	**0.23 B**	**0.28 B**	0.16 or SB	0-1.75
Cadmium	NDJ	NDJ	**3.3 J**	0.1 J	NDJ	NDJ	**1.3 J**	NDJ	NDJ	NDJ	1	0.1-1.0
Calcium	15700	17200	8710	11500	2150	35600	69600	183000	22800	12100	SB	130-35,000
Chromium	13.1 J	13.8 J	10.7 J	13.3 J	36.7 J	**61.4 J**	22.2 J	6.8 J	**52.8 J**	12.0 J	50 or SB	1.5-40
Cobalt	7.5	9.3	7.7	6. B	14.3	14.9	3.9 B	2.8 B	26.7	5.6 B	30 or SB	2.5-40
Copper	**25.4 J**	**28.3 J**	23.2 J	**28 J**	**48.1 J**	**137 J**	**158 J**	**185 J**	**334 J**	**26.5 J**	25 or SB	1.0-50
Iron	**16500**	**20200**	**21400**	**14500**	**123000**	**72000**	**18300**	**8770**	**237000**	**13900**	2,000 or SB	2000-550000
Lead	69.2 J	47.4 J	117 J	83.3 J	77.6 J	**975 J**	**662 J**	7.6 J	**3510 J**	125 J	SB****200-500	200-500
Magnesium	5400	6140	4110	3910	1450	4800	5470	15900	1940	3790	SB	100-5000
Manganese	R	R	R	R	R	R	R	372 J	R	R	SB	50-5000
Mercury	0.03 B	0.04	**0.226**	**0.111**	**0.127**	**3.8**	**0.304**	ND	**0.567**	0.09	0.1	0.001-0.2
Nickel	**22.3 J**	**27.2 J**	**21.6 J**	**18.1 J**	**45.4 J**	**28.3 J**	**27 J**	6.3 J	**88.9 J**	**17.8 J**	13 or SB	1.0-25
Potassium	1040	1270	964	843	1570	894 B	812 B	625 B	394 B	743	SB	8500-43000
Selenium	1.6 B	**2 B**	1.7 B	1.7 B	**7.6 J**	**5.3 BJ**	1.8 B	ND	**13.2 J**	1.1 B	2 or SB	0.1-3.9
Silver	ND	ND	0.13 B	0.4 B	0.18 B	6.4	0.52 B	ND	0.87 B	0.36 B	SB	NA
Sodium	57.8 B	42.5 B	110 B	47.4 B	239 BJ	314 B	95.6 B	262 B	294 B	48.3 B	SB	6000-8000
Thallium	ND	ND	ND	ND	14.2 J	ND	ND	ND	ND	ND	SB	NA
Vanadium	14.5	17.3	14.8	11.8	13.2	9.9 B	11.2	9.2	6.9 B	11	150 or SB	1.0-300
Zinc	**87 J**	**97.5 J**	**1100 J**	**107 J**	**132 J**	**955 J**	**551 J**	**173 J**	**789 J**	**132 J**	20 or SB	9.0-50
TCL Semi-VOAs												
Naphthalene	ND	ND	ND	ND	ND	0.51 J	0.61 J	ND	ND	ND	13	NA
Acetophenone	ND	ND	ND	ND	ND	ND	ND	ND	0.32 J	ND	41	NA
Dibenzofuran	ND	ND	ND	ND	ND	ND	0.38 J	ND	ND	ND	6.2	NA
Fluorene	ND	ND	ND	ND	ND	0.32 J	0.47 J	ND	ND	ND	50	NA
Phenanthrene	0.26 J	0.19 J	0.57	0.46 J	ND	0.61 J	3.7	ND	0.68	0.57	50	NA
Anthracene	0.071 J	ND	0.11 J	0.12 J	ND	0.2 J	0.71	ND	0.12 J	0.11 J	50	NA
Carbazole	ND	ND	0.078 J	0.091 J	ND	ND	0.58 J	ND	ND	0.079 J	NA	NA
Di-n-butyl phthalate	ND	ND	ND	ND	ND	ND	ND	ND	0.96	ND	8.1	NA
Fluoranthene	0.46	0.38 J	0.85	0.86	0.25 J	1.3	3.8	ND	1.6	1	50	NA
Pyrene	0.31 J	0.26 J	0.51	0.6	0.19 J	1	2.3	ND	2	0.83	50	NA
Butyl benzyl phthalate	ND	ND	ND	ND	ND	ND	ND	0.068 J	ND	ND	50	NA
Benzo(a)anthracene	0.18 J	0.15 J	**0.31 J**	**0.41 J**	0.11 J	**0.59 J**	**1.2**	ND	**1**	**0.46**	0.224 / MDL	NA
Chrysene	0.17 J	0.18 J	0.28 J	0.38 J	0.12 J	**0.49 J**	**1.4**	ND	**0.76**	**0.55**	0.4	NA
Bis-2-ethylhexyl phthalate	0.083 J	0.084 J	0.079 J	0.2 J	0.63	37 DJ	12 DJ	0.75	11 D	ND	50	NA
Di-n-octyl phthalate	ND	ND	ND	ND	ND	ND	ND	0.084 J	0.22 J	ND	50	NA
Benzo(b)fluoranthene	0.097 J	0.34 J	0.27J	0.67	0.14 J	0.33 J	**2.5**	ND	0.88	0.33 J	1.1	NA
Benzo(k)fluoranthene	0.21 J	ND	0.22 J	ND	0.1 J	0.4 J	ND	ND	0.62	0.39 J	1.1	NA
Benzo(a)pyrene	**0.14 J**	**0.14 J**	**0.24 J**	**0.33 J**	**0.091 J**	**0.47 J**	**1.3**	ND	**0.9**	**0.37 J**	0.061 / MDL	NA
Indeno(1,2,3-c,d)pyrene	0.085 J	0.085 J	0.13 J	0.16 J	0.057 J	0.27 J	0.46 J	ND	0.65	0.25 J	3.2	NA
Dibenzo(a,h)anthracene	ND	**0.042 J**	**0.064 J**	**0.088 J**	ND	**0.16 J**	**0.23 J**	ND	**0.31 J**	**0.12 J**	0.014/MDL	NA
2-methylnaphthalene	ND	ND	ND	ND	ND	0.092 J	0.35 J	ND	0.22 J	ND	36.4	NA
acenaphthene	ND	ND	ND	ND	ND	0.14 J	0.36 J	ND	ND	ND	50	NA
Benzo(g,h,i)perylene	0.097 J	0.088 J	0.14 J	0.16 J	0.069 J	0.27 J	0.36 J	ND	0.72	0.23 J	50	NA
Total cPAH	**0.88**	**0.94**	**1.51**	**2.04**	**0.62**	**2.71**	**7.09**	**0**	**5.12**	**2.47**		
B(a)P Equivalent	**0.18**	**0.24**	**0.38**	**0.54**	**0.12**	**0.75**	**1.95**	**0**	**1.47**	**0.6**		

Key:

ND - Non Detect

SS -Surface Soil

D - Results reported from a secondary dilution

bgs- Below Ground Surface

J - Analyte positively identified & value is approximate concentration

B - Greater or equal to instrument detection limit & less than quantitation limit

Shading - Results Above NYSDEC Guidelines

Total cPAH includes: benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo (a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene

R - Data rejected - see Data Validation Report

TABLE 2 SUMMARY TABLE - ANALYTICAL RESULTS (LEAD)

ZUBRICK ROAD SITE - SOIL, SEDIMENT & GROUNDWATER SAMPLES

DEPEW, NEW YORK

	Total Lead Level	NYSDEC TAGM Cleanup Value	TCLP Lead	TCLP Lead MCL
Soil Sample ID.	mg/kg (ppm)	mg/kg (ppm)	mg/L (ppm)	mg/L (ppm)
ZR-SS-03	17.5 J	200 - 500		
ZR-SS-07	14.9 J	"		
ZR-SS-08	2520 J	"	136 J	5.0
ZR-SS-09	97.5 J	"		
ZR-SS-12	4210 J	"	75.7 J	5.0
ZR-TP-01 (4-5')	178 J	"		
ZR-TP-03 (4.5-5.5')	13600 J	"	469 J	5.0
ZR-TP-05 (8')	12.4 J	"		
ZR-TP-12 (7-7.5')	14.2 J	"		
ZR-TP-02 (3.5-5.5')	77.6 J	"		
ZR-TP-03 (5.5-9')	975 J	"		
ZR-TP-07 (7')	662 J	"		
ZR-TP-08 (5')	7.6 J	"		
ZR-SS-01	69.2 J	"		
ZR-SS-02	47.4 J	"		
ZR-SS-05	117 J	"		
ZR-SS-11	83.3 J	"		
ZR-TP-09 (8')	3510 J	"	20.2 J	5.0
ZR-TP-11 (2-4')	125 J	"		
Sediment Sample ID.				
ZR-SED-01	828 J	"		
ZR-SED-02	27.7 J	"		
ZR-SED-03	130 J	"		
ZR-SED-04	9.4 J	"		
ZR-SED-05	4.7 J	"		

GW Sample ID.	ug/L (ppb)	NYDEC TOGS - Groundwater (ug/L)
ZR-GW-01	3860 J	25
ZR-GW-01 F	185 J	"
ZR-GW-09	8660 J	"
ZR-GW-09 F	7030 J	"
ZR-GW-11	1110 R	"
ZR-GW-11 F	2630 R	"

Key:

Shading - Results above NYSDEC Guidelines

J - Analyte positively identified & value is approximate concentration

R - Data rejected - see Data Validation Report

F - Filtered Sample

MCL - Maximum Concentration Limit

SS - Surface Soil Sample

TP - Test Pit

TCLP - Toxicity Characteristic Leaching Procedure

TOGS - Technical and Operational Guidance Series

Lead

Lead was detected in all surface and subsurface soil samples analyzed for Total Lead. Elevated concentrations of lead, above NYSDEC TAGM levels, were detected in two of the nine surface soil samples and four of the ten subsurface samples (refer to Table 2). In accordance with the Workplan, to determine if the soils with elevated lead concentrations should be classified as a hazardous material, TCLP Lead analysis was performed on four soil samples whose total lead concentration exceeded 1,500 ppm. The TCLP lead concentration for all four samples exceeded the TCLP-Maximum Concentration Limit (MCL) for lead (refer to Table 2) thereby classifying the materials as hazardous.

Two of the soil samples that failed TCLP for lead were surface soil samples (ZR-SS-08 & ZR-SS-12) and two were subsurface soil samples (ZR-TP-03 at 4.5-5.5 feet & ZR-TP-09 at 8 feet). These results imply that both surface soils and soils at depth in the areas tested are contaminated with lead at levels which meet hazardous waste classification.

Semi-Volatile Organic Compounds

Numerous semi-volatile organic compounds (SVOCs) consisting primarily of polycyclic aromatic hydrocarbons (PAHs) were detected in the surface and subsurface soil samples. PAH compounds detected in soil are common constituents of fill material in landfills with ash material environments. These compounds can be introduced into the environment by natural (e.g., soil chemistry, forest fires) and human (e.g., automobile, coal or other heating fuel combustion, solid waste incineration) processes. PAHs deposited from the historical incineration of municipal wastes and combustion of coal or other fuels will most likely still be present in soils today.

PAHs, as well as metals, are not, in general, very mobile in soils. PAHs have low solubilities with water and tend to adsorb to the soil grains. These compounds do not readily breakdown in the environment. Based on their low volatility and their association with soil, the primary concern for potential human exposure to PAHs includes inhalation, ingestion and dermal contact.

PAHs comprise over 100 different chemicals formed during the incomplete burning of organic material. Seven PAHs (benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene) are classified as probable human carcinogens and are collectively referred to as total carcinogenic PAHs (cPAHs). Benzo(a)pyrene (B(a)P), is the only chemical of this group for which a quantitative estimate of cancer potency is available from long term animal studies. Consequently, in order to assess the overall impact of cPAHs, the concentrations of the other six cPAHs are scaled to B(a)P and expressed as "B(a)P Equivalents." Because B(a)P Equivalents account for the relative cancer causing ability of all cPAHs, they are typically used for evaluating the public health implications of potential exposure to PAHs.

The SVOC analytical results for all soil samples were compared to TAGM values (refer to Table 1). As expected in a site where incinerated municipal wastes were deposited, analytical results from both surface and subsurface soils indicated the presence of several cPAHs at concentrations slightly above the TAGM values.

Surface soil samples analyzed had average total cPAH and B(a)P Equivalent values of 1.34 ppm and 0.34 ppm respectively. Subsurface soil samples analyzed had average total cPAH and B(a)P equivalent values of 3.0 ppm and 0.82 ppm respectively.

The Journal of Soil Contamination published an article entitled, "Background Levels of Polycyclic Aromatic Hydrocarbons and Selected Metals in New England Urban Soils" (refer to Appendix D), in which soil samples from urban locations in three New England cities were collected at a depth of 0-6 inches and analyzed for PAHs. The results of this study reported that the average background concentration of total cPAHs and B(a)P equivalents for non-industrial sites within the three cities were 9 ppm and 2.4 ppm respectively. By comparison, the average Zurbrick Road surface or subsurface soil sample concentration values noted above are significantly below these values. The highest total cPAHs and B(a)P equivalent Zurbrick Road sample values were 7.09 ppm and 1.47 ppm respectively (refer to Table 1) which were also both below the background study values.

3.3 Groundwater

A total of six groundwater samples were collected, two each from three separate test pits (TP-01, TP-09 & TP-11). For each set of samples collected from a test pit, one sample was left unfiltered and the second sample was filtered at the laboratory before analysis. All samples were analyzed for total lead and the results compared to NYSDEC Technical and Operational Guidance Series (TOGS) limitation for groundwater quality.

Lead was detected in all of the groundwater samples at concentrations above the TOGs groundwater guidance limitation value (refer to Table 2). As noted in section 2.3.3 Groundwater Sampling, preservative was inadvertently added in the field to the samples to be filtered in the laboratory, thereby, distorting the filtered analytical results. However, even with this distortion the data is still useful as an indicator. Because of the high lead levels detected, that even if the prsevative had not been added to the filtered samples, most likely the results would still have exceeded the TOGS value.

3.4 Creek Sediments

A total of five sediment samples were collected from Cayuga Creek sediments and analyzed for total lead (refer to Table 2). An elevated concentration of lead, above the NYSDEC TAGM level, was detected in only one of the sediment samples (ZR-SED-01). This sample was the furthest down-stream sample collected at the west end of the site (refer to Figure 2).

4.0 IDENTIFICATION OF PRELIMINARY REMEDIAL ALTERNATIVES

4.1 Introduction

This section presents the methodology and rationale used to develop preliminary remedial action alternatives for remediation of the Zurbrick Road Site. However, the results of this investigation indicate that contamination may extent beyond the northern boundary of the study area and according to the NYSDEC this area to the north will be investigated under a future program. Therefore, this section prvides only a limited discussion of possible remedial alternatives. Upon completion of future investigations of the adjoining property to the North, a detailed development of remedial alternatives for the entire site will be developed under a future program.

4.2 Remedial Action Objectives

For the voluntary cleanup program the primary remedial action objective is to be protective of public health and the environment at levels appropriate for the intended use of the site. The Site is surrounded on three sides by Cayuga Creek and bounded on the north by the Erie County overflow retention basin. There are no public roads or other direct public access to the Site and the Village of Depew has no future plans to develope the Site. Based on the very limited public or Village worker access to the site, remedial action objectives will focus on protection of the environment. The primary objective will be to contain and/or eliminate the movement of contminated soils and leachate into Cayuga Creek.

4.2.1 Selection of Cleanup Goals

Metal and PAH compounds detected at the site are common constituents of fill material found in ash landfills, and are typically associated with solid waste incinerator ash found at the Site. The primary compound of concern is lead. During this investigation lead was detected in several soil samples at elevated concentrations that failed TCLP for lead and detected in the groundwater at concentrations that exceeded TOGs guidance values. To protect human health and the environment the cleanup goal for the site will be to implement remedial measures that will remove and/or encapsulate on-site soils with lead concentrations in excess of 500 ppm and maintain lead concentrations of less than 50 ppb in groundwater/leachate seepage to the creek

4.2.2 Regulatory Implications of Contaminant Concentrations

A number cPAH compounds were detected in surface and subsurface soil samples at concentrations that exceeded TAGM values. However, the levels of cPAHs detected in the soils are typical of the concentrations detected at industrial sites and urban locations.

The Journal of Soil Contamination published an article entitled, "Background Levels of Polycyclic Aromatic Hydrocarbons and Selected Metals in New England Urban Soils" (refer to

Appendix C), in which soil samples from urban locations in three New England cities were collected at a depth of 0-6 inches and analyzed for PAHs. As discussed in Section 3.2 of this report, the average total cPAH and B(a)P equivalent concentrations of the Zurbrick Road Site soils fall within the study background concentration values for soils at the three New England sites.

A number of metal compounds were also detected in the Site soils that exceeded TAGM values. The soils sampled were a mixture of fill material, incinerator ash, and municipal solid waste. Four of the samples analyzed, with the highest concentrations of total lead, were further analyzed by TCLP for lead. The results of all four analyses indicated concentrations of lead that exceeded the TCLP Maximum Concentration Limit (MCL) for lead. These results confirmed the results from the previous limited Corps of Engineers' (COE) sampling program at the Site where two of the COE's samples also failed TCLP analysis for lead.

Only one of the five sediment samples collected and analyzed for total lead indicated a lead concentration level above the TAGM level. However, this sample was the furthest downstream sample from the site (ZR-SED-01). This may indicate the possible transference of contaminated site soils to the creek and settling out as creek sediments during low flow periods or maybe from another source or natural. Because of the very limited buildup of sediments at low flow and complete scour to bedrock during high flows remedial action alternatives are not suggested or addressed for sediments.

Lead was detected in all of the six groundwater samples collected (3-filtered & 3-unfiltered) at concentrations above the TOGs groundwater guidance limitation value. As noted in section 2.3.3 preservative was inadvertantly added in the field to the samples to be filtered in the laboratory, thereby, distorting the filtered analytical results. Groundwater monitoring wells should be installed and sampled prior to implementing any remedial measures to fully evaluate groundwater quality at the Site.

4.3 Development of Preliminary Alternatives

The only direct human exposure to contaminated soils would be limited to construction workers during remediation of the site and to Village of Depew workers who may disturb soils during alterations/improvements made to the site in the future. The primary human exposure routes associated with the PAHs and metals in the onsite fill materials include:

- Dermal contact;
- Ingestion; and
- Inhalation

The contaminated site soils may also effect the environment by direct exposure of contaminated soils to Cayuga Creek waters through soils washing into the creek during high waters and/or leachate seeping to the creek from creeks at the perimeter of the site.

Consequently, in developing preliminary remedial action alternatives, the primary goal was to prevent contact, ingestion or inhalation of the contaminated soils and eliminate the possible movement of site soils and leachate into the creek. Three alternatives were developed as follows:

- Alternative 1 - No Action;
- Alternative 2 - Excavation and off-site disposal of soils;
- Alternative 3 - Excavation and on-site disposal of creek bank soils, new creek perimeter berm and capping the site .

5.0 ANALYSIS OF ALTERNATIVES

5.1 Introduction

The proposed alternatives were analyzed using the following evaluation criteria as defined in 6 NYCRR 375:

1. Overall protection of human health and the environment
    a. Exposure to human health and the environment after remediation
    b. Residual public health risks after remediation
    c. Residual environmental risks after remediation
2. Compliance with remedial action objectives
3. Short-term effectiveness
    a. Protection of the community during remedial actions
    b. Environmental impacts
    c. Time to implement the remedy
4. Long-term effectiveness and permanence
    a. Lifetime of remedial actions
    b. Residual risks
    c. Adequacy and reliability of controls
5. Reduction of toxicity, mobility and volume
    a. Volume of hazardous substances reduced
    b. Reduction in mobility of hazardous substances
    c. Irreversibility of the destruction or treatment
6. Feasibility
    a. Suitable to site conditions
    b. Consideration of implementability
    c. Availability of services and materials
    d. Consideration of cost effectiveness
7. Community acceptance
    The criterion of community acceptance will be evaluated by the Village of Depew and NYSDEC following issuance of the proposed remedy.

5.2 Individual Analysis of Alternatives

The following is a preliminary analysis of each alternative.

5.2.1 Alternative 1 - No Action

Under the No Action alternative, no remedial activities would take place on site to remove, contain, or treat Soils would remain on site in their present state and no institutional controls would be implemented.

This alternative is feasible and complies with short term effectiveness relative to direct human exposure since most of the site is currently covered with grasses, there is no direct public access to the site, and there are no current operations conducted on the site by the Village. Therefore, the primary exposure routes of ingestion, inhalation and dermal contact are minimized. Since there are no institutional controls regarding potential changes of land use nor restrictions on future excavation activities this alternative does not have long term effectiveness. This alternative also does not reduce the toxicity, mobility, or volume of the contaminants nor reduce the potential contamination of Cayuga Creek waters by soils and leachate discharges to the creek.

5.2.2 Alternative 2 - Excavation and Off-Site Disposal of Soils

Under this alternative a pre-design field evaluation of the lead content in the site soils will be conducted. A site grid will be established and a boring soil screening program implemented to segment the site both horizontally and vertically into soils that have greater than and less than 500 ppm lead levels (established cleanup level). Soils that have greater than 500 ppm lead will be further evaluated as to hazardous or non-hazardous status by TCLP analysis. An excavation/removal plan will than be prepared based on this evaluation. It is assumed that excavation would be conducted during the summer dry season and excavation were not occur below the water table. Soils less than 500 ppm lead, that can be easily segmented, will be sockpiled on site or left in place. Soils greater than 500 ppm lead will be excavated and hauled off-site to either a hazardous or non-hazardous disposal facility based on classification from TCLP results.

Stockpiled soils, less than 500 ppm lead, will be placed at the bottom of excavated areas. Clean off-site soils will be placed to establish a finished grade to allow radial drainage to the creek. The site will than be capped with a minimum of one foot of clay and topsoil and then seeded.

This alternative provides overall protection of human health and the environment and complies with the remedial action objective by eliminating the source of contamination from the site. Short-term effectiveness is reduced due to the added time to implement than the other alternatives and the greater disruption to the community resulting from hauling large volumes of contaminated soils over residential/Village streets. Long-term effectiveness criteria have met with the elimination of the highly contaminated material(>500 ppm lead) and the capping of the site. The reduction of toxicity, mobility, and volume have been met with the removal of the contaminated soils that exceeded the established clean-up level. This alternative is less cost effective compared to the other alternatives. Depending on the volume of material that may be declared hazardous, off-site disposal may be cost prohibitive.

5.2.3 Alternative 3 - Excavation and On-Site Disposal of Creek Bank Soils, New Creek Perimeter Berm, and Capping the Site

Under this alternative the only soils excavated will be along the bank of the creek along the entire creek perimeter of the site. The creek bank soils will be placed at the center of the site. A new berm will be constructed around the perimeter of the site composed of impervious soils at the bottom to the high water elevation of the creek, followed by an inverted gravel filter. The outer berm surface would than be covered with stone rip rap for erosion protection. The filter material would be graded to prevent contaminated soils from being transported by seepage to the creek waters. The entire site would than be capped with a minimum of 12 inches of clay and topsoil then seeded. Under this alternative deed restrictions would also be implemented to restrict future development that would include excavation of the site soils.

This alternative provides overall protection to human health and the environment and complies with remedial action objectives by the removal of contaminated material in contact with the creek and encapsulation of the remaining contaminated soils in place. Short-term and long-term effectiveness criteria have been met with the partial excavation and containment of contaminated material and the berm placement and capping of the site. However, long term effectiveness will depend on the adequacy and reliability of long term maintenance of the cap, filter and berm. The reduction of toxicity and volume of contaminated material has not been met, however the mobility of contaminated materials has been restricted with the construction of the cap, berm and filter.This alternative is cost effective and easier to implement than alternative 2.

6.0 CONCLUSIONS / RECOMMENDATIONS

6.1 Introduction

This section provides the conclusions and recommendations resulting from the findings of the site investigation and the identification of preliminary remedial alternatives .

6.2 Conclusions / Recommendations

- The analytical data presented in the report are considered representative of site conditions at the time of sampling.

- The contaminants of concern are lead and low levels of PAHs and other metal compounds, detected in the soils consistently across the site, most likely associated with the historic use of the site as municipal landfill where imcinerated municipal waste was also deposited.

- Lead was detected in all surface and subsurface soil samples analyzed for Total Lead. Elevated concentrations of lead, above NYSDEC TAGM levels, were detected in two of the nine surface soil samples and four of the ten subsurface samples. TCLP Lead analysis was performed on four soil samples (2-surface & 2-subsurface) whose total lead concentration exceeded 1,500 ppm. The TCLP lead concentration for all four samples exceeded the TCLP-Maximum Concentration Limit (MCL) for lead thereby classifying the materials as hazardous. The results imply that both surface soils and soils at depth in the areas tested are contaminated with lead at levels which meet hazardous waste classification.

- A number of metal compounds other than lead were detected in surface and subsurface soil samples. The concentrations of several metals exceeded NYSDEC TAGM cleanup values and Eastern USA Background ranges in both surface and subsurface samples.

- Numerous semi-volatile organic compounds (SVOCs) consisting primarily of polycyclic aromatic hydrocarbons (PAHs) were detected in the surface and subsurface soil samples at concentrations slightly above NYSDEC TAGM levels.

- Lead was detected in all of the groundwater samples collected from test pits at concentrations above the TOGs groundwater guidance limitation value. Preservative was inadvertently added in the field to the samples to be filtered in the laboratory, thereby, distorting the filtered analytical results. However, even with this distortion the data is still useful as an indicator. Because of the high lead levels detected, that even if the preservative had not been added to the filtered samples, most likely the results would still have exceeded the TOGS value.

- A total of five sediment samples were collected from Cayuga Creek sediments and analyzed for total lead. An elevated concentration of lead, above the NYSDEC TAGM level, was detected in only one of the sediment samples. This sample was the furthest down-stream sample collected at the west end of the site.

- The site investigation portion of the program identified more wide spread contamination than expected. Due to this, the Village has elected to transfer the program related to expanding the investigation beyond the limits of this study to the NYSDEC. For this reason the original scope was not completed through the final selection of a site remedy. Additional investigations and development of final remedial alternatives will be completed under a follow-up NYSDEC program. This report documents the investigation portion of the work within the original site boundaries and discusses general remedial alternatives as they relate to the contaminated soils within the site study boundaries.

- Based on the site investigation, preliminary remedial alternatives were identified designed to prevent contact, ingestion or inhalation of potentially impacted site soils. Three alternatives were identified as follows:

  - Alternative 1 - No Action;
  - Alternative 2 - Excavation and off-site disposal of soils;
  - Alternative 3 - Excavation and on-site disposal of creek bank soils, new creek perimeter berm and capping the site.

APPENDIX A

USCOE ANALYTICAL RESULTS

USACE
Buffalo District

Location of Samples Taken for the Five Test Pits
Zurbrick Rd. DACW49-01-C-0015

*Please see attached drawings for the locations of each of the five test pits.

Trash Composite Sample #1: Contains Trash Samples from test pits 1,2,4,5 which where mixed together and tested as one sample.

Test Pit #1
Contains Individual Lead Sample #2, Trash Composite Sample #1

Test Pit #2
Contains Individual Lead Sample #4, Trash Composite Sample #1

Test Pit #3
No Individual Lead Sample, No Composite Sample

Test Pit #4
Contains Individual Lead Sample #3, Trash Composite Sample #1

Test Pit #5
Contains Individual Lead Sample #1, Trash Composite Sample #1

Waste Stream Technology, Inc.

TCLP Metals Analysis Report

Lead by ICP

SW-846 6010

Site: Depew DPW
Date Received: 09/21/01

Group Number: 2011-2291
Units: mg/L
Matrix: TCLP Extract(s)

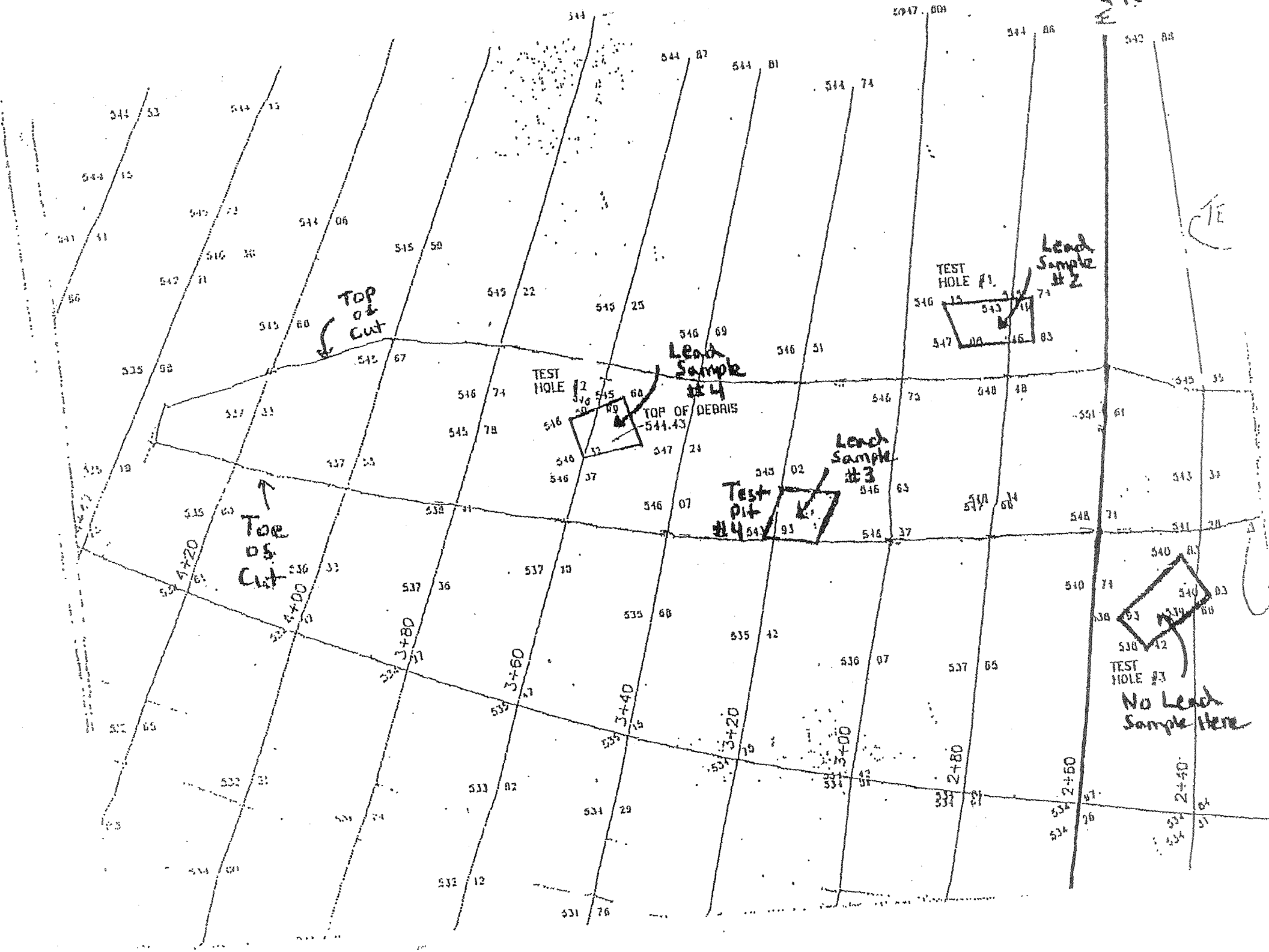
5.0

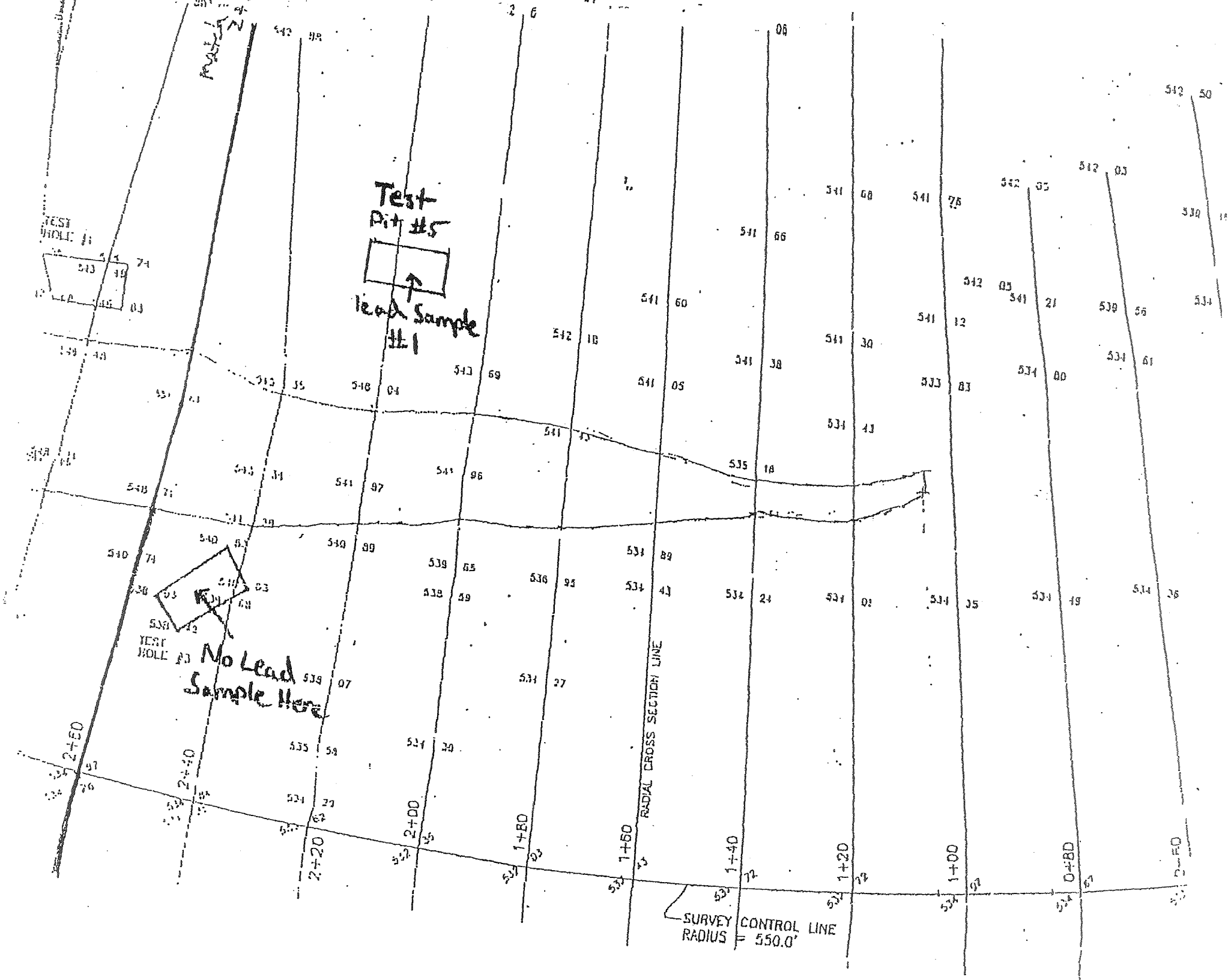
TCLP Extraction Date: 09/24/01
Date Digested: 09/25/01

WST ID	Client ID	Date Sampled	Detection Limit	Result	Date Analyzed
WS86803	Sample #1	09/21/01	0.075	519	09/25/01
WS86804	Sample #2	09/21/01	0.075	0.492	09/25/01
WS86805	Sample #3	09/21/01	0.075	0.440	09/25/01
WS86806	Sample #4	09/21/01	0.075	3.60	09/25/01

Lead Testing

WASTE STREAM TECHNOLOGY


Top of Cut
Toe of Cut
TEST HOLE #2
TOP OF DEBRIS
544.43
Lead Sample #4
Test pit #4
Lead Sample #3
TEST HOLE #1
Lead Sample #2
TEST HOLE #3
No Lead Sample Here
4+20
4+00
3+80
3+60
3+40
3+20
3+00
2+80
2+60
2+40


Test Pit #5
Lead Sample #1
TEST HOLE #1
TEST HOLE #3
No Lead Sample Here
RADIAL CROSS SECTION LINE
SURVEY CONTROL LINE
RADIUS = 550.0'
2+60
2+40
2+20
2+00
1+80
1+60
1+40
1+20
1+00
0+80

WASTE STREAM TECHNOLOGY, INC.
302 Grote Street
Buffalo, NY 14207
(716) 876-5290

Analytical Data Report
Report Date : 09/20/01
Group Number : 2011-2229

Prepared For :
Mr. Robert Hoffman
Rand & Jones
18 Tracy Street
Buffalo, NY 14201

Trash Composite

Site : Depew DPW

Analytical Parameters	Analytical Services Number of Samples	Turnaround Time
pH	1	5 Business Days
Ignitability	1	5 Business Days
TC_P Metals	1	5 Business Days
Reactive Cyanide	1	5 Business Days
Reactive Sulfide	1	5 Business Days
Paint Filter	1	5 Business Days
TCLP 8260	1	5 Business Days
TCLP 8270	1	5 Business Days

Report Released By : B Schepart

Brian Schepart, Ph.D., Laboratory Director

ENVIRONMENTAL LABORATORY ACCREDITATION CERTIFICATION NUMBERS
NYSDOH ELAP #11179 NJDEPE #73977

Waste Stream Technology, Inc.
302 Grote Street
Buffalo, NY 14207
(716) 876-5290

Analytical Data Report

Group Number: 2011-2229
Site: Depew DPW

Field and Laboratory Information

WST ID	Client ID	Matrix	Date Sampled	Date Received	Time
WS86474	Pile #1 - #4 Comp	Soil	09/13/01	09/13/01	14:53

METHODOLOGIES

The specific methodologies employed in obtaining the analytical data reported are indicated on each of the result forms. The method numbers shown refer to the following U.S. Environmental Protection Agency Reference:

Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020, March 1979, Revised 1983, U.S. Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268.

Federal Register, 40 CFR Part 136: Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act. Revised July 1992.

Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. Third Edition, Revised December 1996, U.S. EPA SW-846.

Annual Book of ASTM Standards, Volume II. ASTM, 100 Harbor Drive, West Conshohocken, PA 19428-2959.

Standard Methods for the Examination of Water and Wastewater. (20th Edition). American Public Health Association, 1105 18th Street, NW, Washington, D.C. 20036.

ORGANIC DATA QUALIFIERS

U - Indicates compound was analyzed for but not detected.

J - Indicates an estimated value. This flag is used to qualify the following: when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed; a compound is detected in the sample but the result is less than the method quantitation limit but greater than the statistically calculated laboratory method detection limit; the result for a compound is estimated due to the analysis of a sample beyond the USEPA defined holding time; the result for a compound is estimated due to a quality control sample result that is outside the laboratory quality control recovery limits.

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS.

B - This flag is used when the analyte is found in the associated blank as well as the sample.

E - This flag identifies all compounds whose concentrations exceed the calibration range of the GC/MS instrument of that specific analysis.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.

G - Matrix spike recovery is greater than the expected upper limit of analytical performance.

L - Matrix spike recovery is less than the expected lower limit of analytical performance.

- Indicates that a surrogate recovery was found to be outside the expected limits of analytical performance.

$ - Indicates that the surrogate compound was diluted out. The sample had to be diluted to obtain analytical results and a recovery could not be calculated.

(%) - Indicates that the compound is a surrogate and that the value reported for this compound is in percent recovery. The quality control recovery limits are indicated in the detection limit or QC limits column.

Waste Stream Technology, Inc.

Wet Chemistry Analyses

Site: Depew DPW
Date Sampled: 09/13/01
Date Received: 09/13/01

Group Number: 2011-2229
Matrix: Soil

WST ID: WS86474
Client ID Pile #1 - #4 Comp

Analysis	Method Reference	Detection Limit	Result	Units	Date Analyzed
pH in Solid	SW-846 9045C	NA	7.48	pH Units	09/14/01

Waste Stream Technology, Inc.
Wet Chemistry Analyses

Site: Depew DPW
Date Sampled: 09/13/01
Date Received: 09/13/01

Group Number: 2011-2229
Matrix: Soil

WST ID: WS86474
Client ID Pile #1 - #4 Comp

Analysis	Method Reference	Detection Limit	Result	Units	Date Analyzed
Ignitability (flash point)	SW-846 1010	NA	>200	° F	09/14/01

> 200 = no flash detected at a temperature up to 200 degrees Fahrenheit.

Waste Stream Technology, Inc.

TCLP Metals Analysis Result Report

Site: Depew DPW
Date Sampled: 09/13/01
Date Received: 09/13/01

Group Number: 2011-2229
Units: mg/L
Matrix: TCLP Extract
TCLP Extraction Date: 09/17/01

WST ID: WS86474
Client ID: Pile #1 - #4 Comp
Digestion Date: 09/18/01

Analyte	Detection Limit	Result	Date Analyzed	Analysis Method
Arsenic by ICP	0.045	Not detected	09/18/01	SW-846 6010
Barium by ICP	0.025	0.772	09/18/01	SW-846 6010
Cadmium by ICP	0.025	0.061	09/18/01	SW-846 6010
Chromium by ICP	0.025	Not detected	09/18/01	SW-846 6010
Lead by ICP	0.075	20.3	09/18/01	SW-846 6010
Mercury by Cold Vapor	0.001	Not detected	09/20/01	SW-846 7470
Selenium by ICP	0.095	Not detected	09/18/01	SW-846 6010
Silver by ICP	0.025	Not detected	09/18/01	SW-846 6010

Waste Stream Technology, Inc.
Wet Chemistry Analyses

Site: Depew DPW
Date Sampled: 09/13/01
Date Received: 09/13/01

Group Number: 2011-2229
Matrix: Soil

WST ID: WS85474
Client ID: Pile #1 - #4 Comp

Analysis	Method Reference	Detection Limit	Result	Units	Date Analyzed
Section 7.3.3.2 Reactive Cyanide	SW-846 9014	40.0	Not detected	mg/Kg	09/17/01
Section 7.3.4.2 Reactive Sulfide	SW-846 9034	40.0	Not detected	mg/Kg	09/17/01

Waste Stream Technology, Inc.

Paint Filter Test

SW-846 9095

Site: Depew DPW
Date Sampled: 09/13/01
Date Received: 09/13/01

Group Number: 2011-2229
Matrix: Soil
Units: Pass/Fail

WST ID	Client ID	Detection Limit	Result	Date Analyzed
WS86474	Pile #1 - #4 Comp	NA	Passed	09/14/01

Waste Stream Technology, Inc.

TCLP Volatile Organics Analysis

1311/8260B

Site: Depew DPW
Date Sampled: 09/13/01
Date Received: 09/13/01

Group Number: 2011-2229
Units: µg/L
Matrix: TCLP Extract

WST ID: WS86474
Client ID: Pile #1 - #4 Comp
TCLP Date: 09/18/01
Date Analyzed: 09/19/01

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
vinyl chloride	100	Not detected		U
1,1-dichloroethene	50	Not detected		U
chloroform	50	Not detected		U
2-butanone	1000	Not detected		U
1,2-dichloroethane	50	Not detected		U
carbon tetrachloride	50	Not detected		U
trichloroethene	50	Not detected		U
benzene	50	Not detected		U
tetrachloroethene	50	Not detected		U
chlorobenzene	50	Not detected		U
1,4-dichlorobenzene	50	Not detected		U
1,2-Dichloroethane-d4 (%)		111	70-121	
Toluene-d8 (%)		96	81-117	
Bromofluorobenzene (%)		119	74-121	
Dilution Factor	1			

Waste Stream Technology, Inc.

Method Blank for TCLP Volatiles

1311/8260B

Site: Depew DPW
Date Sampled: NA
Date Received: NA

Group Number: 2011-2229
Units: µg/L

WST ID: MB091901
Client ID: NA
TCLP Date: 09/18/01
Date Analyzed: 09/19/01

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
Vinyl Chloride	100	Not detected		U
1,1-Dichloroethane	50	Not detected		U
Chloroform	50	Not detected		U
2-Butanone	1000	Not detected		U
1,2-Dichloroethane	50	Not detected		U
Carbon Tetrachloride	50	Not detected		U
Trichloroethene	50	Not detected		U
Benzene	50	Not detected		U
Tetrachloroethene	50	Not detected		U
Chlorobenzene	50	Not detected		U
1,4-Dichlorobenzene	50	Not detected		U
1,2-Dichloroethane-d4 (%)		108	70-121	
Toluene-d8 (%)		95	81-117	
Bromofluorobenzene (%)		108	74-121	

Dilution Factor 1
MB denotes Method Blank
NA denotes Not Applicable

Waste Stream Technology, Inc.

8270 TCLP Semivolatile Organics

1311/8270

Site: Depew DPW
Date Sampled: 09/13/01
Date Received 09/13/01
TCLP Extraction Date: 09/18/01

Group Number: 2011-2229
Units: µg/L
Matrix: TCLP Extract

WST ID: WS86474
Client ID: Pile #1 - #4 Comp
Extraction Date: 09/18/01
Date Analyzed: 09/19/01

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
pyridine	10	Not detected		U
1,4-dichlorobenzene	10	Not detected		U
Total cresols(o,m & p)	30	Not detected		U
nitrobenzene	10	Not detected		U
hexachloroethane	10	Not detected		U
hexachlorobutadiene	10	Not detected		U
2,4,6-trichlorophenol	10	Not detected		U
2,4,5-trichlorophenol	10	Not detected		U
2,4-dinitrotoluene	10	Not detected		U
hexachlorobenzene	10	Not detected		U
pentachlorophenol	50	Not detected		U
2-Fluorophenol (%)		36	21-100	
Phenol-d6 (%)		29	10-94	
Nitrobenzene-d5 (%)		75	35-114	
2-Fluorobiphenyl (%)		77	43-116	
2,4,6-Tribromophenol (%)		95	10-123	
Terphenyl-d14 (%)		93	33-141	
Dilution Factor	1			

CHAIN OF CUSTODY

WASTE STREAM TECHNOLOGY

Waste Stream Technology Inc.
302 Grote Street, Buffalo, NY 14207
(716) 876-5290 • FAX (716) 876-2412

OFFICE USE ONLY
GROUP # [illegible]
DUE DATE 5 B D

PAGE ____ OF ____

REPORT TO: [illegible]
[illegible] Street
Buffalo NY
14201

CONTACT: Robert Hoffman
PH. # ( ) 716 626 1210
FAX # ( ) 716 630 8852
BILL TO: As above
PO#
PROJECT DESCRIPTION: Dennis DPW
SAMPLER SIGNATURE

DW DRINKING WATER · SL SLUDGE
GW GROUND WATER · SO SOIL
SW SURFACE WATER · S SOLID
WW WASTE WATER · W WIPE
O OIL · OTHER

TURN AROUND TIME:
QUOTATION NUMBER:

ARE SPECIAL DETECTION LIMITS REQUIRED: YES NO
If yes please attach requirements.

Is a QC Package required: YES NO
If yes please attach requirements

ANALYSES TO BE PERFORMED

	SAMPLE I.D.	DATE SAMPLED	TIME OF SAMPLING	SAMPLE TYPE	TOTAL NO. OF CONTAINERS	Full TCLP less Pesticide/Herb	RCRA Char.	Paint Filter								TYPE OF CONTAINER/ COMMENTS:	OFFICE USE ONLY WST. I.D.
1	pile #1					X	X	X								To be composited in Laboratory	WS56474
2	pile #2					X	X	X									
3	pile #3					X	X	X									
4	pile #4					X	X	X									
5																	
6																	
7																	
8																	
9																	
10																	

REMARKS:

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:	TIME:
[signature]	11.1.01	2:53 PM	[signature]	11/1/01	1453
RELINQUISHED BY:	DATE: / /	TIME:	RECEIVED BY:	DATE: / /	TIME:

CHAIN OF CUSTODY

WASTE STREAM TECHNOLOGY

Waste Stream Technology Inc.
302 Grote Street, Buffalo, NY 14207
(716) 876-5290 • FAX (716) 876-2412

OFFICE USE ONLY
GROUP # _____
DUE DATE _____

PAGE _____ OF _____

REPORT TO:
CONTACT
PH.# ( )
FAX # ( )
BILL TO:
P.O.#
PROJECT DESCRIPTION
SAMPLER SIGNATURE

DW DRINKING WATER
GW GROUND WATER
SW SURFACE WATER
WW WASTE WATER
O OIL
SL SLUDGE
SO SOIL
S SOLID
W WIPE
OTHER

TURN AROUND TIME:
_____
QUOTATION NUMBER:
_____

ARE SPECIAL DETECTION LIMITS REQUIRED:
YES NO
If yes please attach requirements.

Is a QC Package required:
YES NO
If yes please attach requirements

ANALYSES TO BE PERFORMED

	SAMPLE I.D.	DATE SAMPLED	TIME OF SAMPLING	SAMPLE TYPE	TOTAL NO. OF CONTAINERS	Full TCLP (less Pesticide/Herb	RCRA Char.	Paint Filter	TYPE OF CONTAINER/ COMMENTS:	OFFICE USE ONLY WST. I.D.
1	pile #1					X	X	X		
2	pile #2									
3	pile #3									
4	pile #4									
5										
6										
7										
8										
9										
10										

REMARKS:

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:	TIME:
	/ /	2:53 PM		/ /	
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:	TIME:
	/ /			/ /	

WASTE STREAM TECHNOLOGY, INC.
302 Grote Street
Buffalo, NY 14207
(716) 876-5290

Analytical Data Report
Report Date : 11/07/01
Group Number : 2011-2514

Prepared For :
Mr. Fred Kozminski
USACE - Buffalo District
1776 Niagara Street
Buffalo, NY 14207
Fax: (716) 879 - 4355

Site : Zubrick Rd.

Analytical Services

Analytical Parameters	Number of Samples	Turnaround Time
8270	1	Standard
8260	1	Standard
Lead	5	Standard
TAL Metals	2	Standard

Report Released By : _____
Brian S. Schepart, Ph. D., Laboratory Director

ENVIRONMENTAL LABORATORY ACCREDITATION CERTIFICATION NUMBERS
NYSDOH ELAP #11179 NJDEPE #73977 FDOH #E87581

Waste Stream Technology, Inc.
302 Grote Street
Buffalo, NY 14207
(716) 876-5290

Analytical Data Report

Group Number: 2011-2514
Site: Zurbrick Rd.

Field and Laboratory Information

WST ID	Client ID	Matrix	Date Sampled	Date Received	Time
WS88071	#1 SB	Soil	10/19/01	10/19/01	12:45
WS88072	#2 SB	Soil	10/19/01	10/19/01	12:45
WS88073	#3 SB	Soil	10/19/01	10/19/01	12:45
WS88074	#4 SB	Soil	10/19/01	10/19/01	12:45
WS88075	#5 SB	Soil	10/19/01	10/19/01	12:45
WS88076	#6 (Surface Water)	Aqueous	10/19/01	10/19/01	12:45
WS88077	#7 (Ground Water)	Aqueous	10/19/01	10/19/01	12:45

METHODOLOGIES

The specific methodologies employed in obtaining the analytical data reported are indicated on each of the result forms. The method numbers shown refer to the following U.S. Environmental Protection Agency Reference:

Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020, March 1979, Revised 1983, U.S. Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268.

Federal Register, 40 CFR Part 136: Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act. Revised July 1992.

Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. Third Edition, Revised December 1996, U.S. EPA SW-846.

Annual Book of ASTM Standards, Volume II. ASTM, 100 Harbor Drive, West Conshohocken, PA 19428-2959.

Standard Methods for the Examination of Water and Wastewater. (20th Edition). American Public Health Association, 1105 18th Street, NW, Washington, D.C. 20036.

ORGANIC DATA QUALIFIERS

U - Indicates compound was analyzed for but not detected.

J - Indicates an estimated value. This flag is used to qualify the following: when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed; a compound is detected in the sample but the result is less than the method quantitation limit but greater than the statistically calculated laboratory method detection limit; the result for a compound is estimated due to the analysis of a sample beyond the USEPA defined holding time; the result for a compound is estimated due to a quality control sample result that is outside the laboratory quality control recovery limits.

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS.

B - This flag is used when the analyte is found in the associated blank as well as the sample.

E - This flag identifies all compounds whose concentrations exceed the calibration range of the GC/MS instrument of that specific analysis.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.

G - Matrix spike recovery is greater than the expected upper limit of analytical performance.

L - Matrix spike recovery is less than the expected lower limit of analytical performance.

- Indicates that a surrogate recovery was found to be outside the expected limits of analytical performance.

$ - Indicates that the surrogate compound was diluted out. The sample had to be diluted to obtain analytical results and a recovery could not be calculated.

(%) - Indicates that the compound is a surrogate and that the value reported for this compound is in percent recovery. The quality control recovery limits are indicated in the detection limit or QC limits column.

Waste Stream Technology, Inc.

Semivolatile Organics in Water

3510/8270

Site: Zurbrick Rd.
Date Sampled: 10/19/01
Date Received: 10/19/01

Group Number: 2011-2514
Units: µg/L
Matrix: Aqueous

WST ID: WS88077
Client ID: #7 (Ground Water)
Extraction Date: 10/23/01
Date Analyzed: 10/29/01

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
n-nitrosodimethylamine	10	Not detected		U
bis(2-Chloroethyl)ether	10	Not detected		U
Phenol	10	Not detected		U
2-Chlorophenol	10	Not detected		U
1,3-Dichlorobenzene	10	Not detected		U
1,4-Dichlorobenzene	10	Not detected		U
1,2-Dichlorobenzene	10	Not detected		U
Benzyl alcohol	20	Not detected		U
bis(2-chloroisopropyl)ether	10	Not detected		U
2-Methylphenol	10	Not detected		U
Hexachloroethane	10	Not detected		U
N-Nitroso-di-n-propylamine	10	Not detected		U
3 & 4-methylphenol	10	Not detected		U
Benzoic acid	50	Not detected		U
Nitrobenzene	10	Not detected		U
Isophorone	10	Not detected		U
2-Nitrophenol	10	Not detected		U
2,4-Dimethylphenol	10	Not detected		U
bis(2-Chloroethoxy)methane	10	Not detected		U
2,4-Dichlorophenol	10	Not detected		U
1,2,4-Trichlorobenzene	10	Not detected		U
Naphthalene	10	Not detected		U
4-Chloroaniline	20	Not detected		U
Hexachlorobutadiene	10	Not detected		U
4-Chloro-3-methylphenol	20	Not detected		U
2-Methylnaphthalene	10	Not detected		U
Hexachlorocyclopentadiene	10	Not detected		U
2,4,6-Trichlorophenol	10	Not detected		U
2,4,5-Trichlorophenol	10	Not detected		U
2-Chloronaphthalene	10	Not detected		U
2-Nitroaniline	50	Not detected		U
Acenaphthylene	10	Not detected		U
Dimethylphthalate	10	Not detected		U
2,6-Dinitrotoluene	10	Not detected		U
Acenaphthene	10	Not detected		U
3-Nitroaniline	50	Not detected		U
2,4-Dinitrophenol	50	Not detected		U
Dibenzofuran	10	Not detected		U
2,4-Dinitrotoluene	10	Not detected		U

Waste Stream Technology, Inc.

Semivolatile Organics in Water

3510/8270

Site: Zurbrick Rd.
Date Sampled: 10/19/01
Date Received: 10/19/01

Group Number: 2011-2514
Units: µg/L
Matrix: Aqueous

WST ID: WS88077
Client ID: #7 (Ground Water)
Extraction Date: 10/23/01
Date Analyzed: 10/29/01

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
4-Nitrophenol	50	Not detected		U
Fluorene	10	Not detected		U
4-Chlorophenyl-phenylether	10	Not detected		U
Diethylphthalate	10	Not detected		U
4-Nitroaniline	20	Not detected		U
4,6-Dinitro-2-methylphenol	50	Not detected		U
n-Nitrosodiphenylamine	10	Not detected		U
4-Bromophenyl-phenylether	10	Not detected		U
Hexachlorobenzene	10	Not detected		U
Pentachlorophenol	50	Not detected		U
Phenanthrene	10	Not detected		U
Anthracene	10	Not detected		U
Di-n-butylphthalate	10	Not detected		U
Fluoranthene	10	Not detected		U
Carbazole	10	Not detected		U
Pyrene	10	Not detected		U
Benzidine	100	Not detected		U
Butylbenzylphthalate	10	Not detected		U
3,3'-Dichlorobenzidine	20	Not detected		U
Benzo[a]anthracene	10	Not detected		U
Chrysene	10	Not detected		U
bis(2-Ethylhexyl)phthalate	10	Not detected		U
Di-n-octylphthalate	10	Not detected		U
Benzo[b]fluoranthene	10	Not detected		U
Benzo[k]fluoranthene	10	Not detected		U
Benzo[a]pyrene	10	Not detected		U
Indeno[1,2,3-cd]pyrene	10	Not detected		U
Dibenz[a,h]anthracene	10	Not detected		U
Benzo[g,h,i]perylene	10	Not detected		U
2-Fluorophenol (%)		29	21-100	
Phenol-d6 (%)		19	10-94	
Nitrobenzene-d5 (%)		53	35-114	
2-Fluorobiphenyl (%)		59	43-116	
2,4,6-Tribromophenol (%)		77	10-123	
Terphenyl-d14 (%)		84	33-141	

Dilution Factor 1

Method 8270 Water Method Blank

SW-846 8270

Site: Zurbrick Rd.
Date Sampled: NA
Date Received: NA

Group Number: 2011-2514
Units: µg/L

WST ID: MB102301
Client ID: NA
Extraction Date: 10/23/01
Date Analyzed: 10/29/01

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
n-nitrosodimethylamine	10	Not detected		U
bis(2-Chloroethyl)ether	10	Not detected		U
Phenol	10	Not detected		U
2-Chlorophenol	10	Not detected		U
1,3-Dichlorobenzene	10	Not detected		U
1,4-Dichlorobenzene	10	Not detected		U
1,2-Dichlorobenzene	10	Not detected		U
Benzyl alcohol	20	Not detected		U
bis(2-chloroisopropyl)ether	10	Not detected		U
2-Methylphenol	10	Not detected		U
Hexachloroethane	10	Not detected		U
N-nitroso-di-n-propylamine	10	Not detected		U
3 & 4 Methylphenol	10	Not detected		U
Nitrobenzene	10	Not detected		U
Isophorone	10	Not detected		U
2-Nitrophenol	10	Not detected		U
2,4-Dimethylphenol	10	Not detected		U
bis(2-Chloroethoxy)methane	10	Not detected		U
2,4-Dichlorophenol	10	Not detected		U
1,2,4-Trichlorobenzene	10	Not detected		U
Naphthalene	10	Not detected		U
4-Chloroaniline	20	Not detected		U
Hexachlorobutadiene	10	Not detected		U
4-Chloro-3-methylphenol	20	Not detected		U
2-Methylnaphthalene	10	Not detected		U
Hexachlorocyclopentadiene	10	Not detected		U
2,4,6-Trichlorophenol	10	Not detected		U
2,4,5-Trichlorophenol	10	Not detected		U
2-Chloronaphthalene	10	Not detected		U
2-Nitroaniline	50	Not detected		U
Acenaphthylene	10	Not detected		U
Dimethylphthalate	10	Not detected		U
2,6-Dinitrotoluene	10	Not detected		U
Acenaphthene	10	Not detected		U
3-Nitroaniline	50	Not detected		U
2,4-Dinitrophenol	50	Not detected		U
Dibenzofuran	10	Not detected		U
2,4-Dinitrotoluene	10	Not detected		U
4-Nitrophenol	50	Not detected		U
Fluorene	10	Not detected		U

Waste Stream Technology, Inc.

Method 8270 Water Method Blank

SW-846 8270

Site: Zurbrick Rd.
Date Sampled: NA
Date Received: NA

Group Number: 2011-2514
Units: µg/L

WST ID: MB102301
Client ID: NA
Extraction Date: 10/23/01
Date Analyzed: 10/29/01

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
4-Chlorophenyl-phenylether	10	Not detected		U
Diethylphthalate	10	Not detected		U
4-Nitroaniline	20	Not detected		U
4,6-Dinitro-2-methylphenol	50	Not detected		U
n-Nitrosodiphenylamine	10	Not detected		U
4-Bromophenyl-phenylether	10	Not detected		U
Hexachlorobenzene	10	Not detected		U
Pentachlorophenol	50	Not detected		U
Phenanthrene	10	Not detected		U
Anthracene	10	Not detected		U
Di-n-butylphthalate	10	Not detected		U
Fluoranthene	10	Not detected		U
Pyrene	10	Not detected		U
Butylbenzylphthalate	10	Not detected		U
3,3'-Dichlorobenzidine	20	Not detected		U
Benzo[a]anthracene	10	Not detected		U
Chrysene	10	Not detected		U
bis(2-Ethylhexyl)phthalate	10	Not detected		U
Di-n-octylphthalate	10	Not detected		U
Benzo[b]fluoranthene	10	Not detected		U
Benzo[k]fluoranthene	10	Not detected		U
Benzo[a]pyrene	10	Not detected		U
Indeno[1,2,3-cd]pyrene	10	Not detected		U
Dibenz[a,h]anthracene	10	Not detected		U
Benzo[g,h,i]perylene	10	Not detected		U
Benzidine	100	Not detected		U
Benzoic acid	50	Not detected		U
Carbazole	10	Not detected		U
2-Fluorophenol (%)		40	21-100	
Phenol-d6 (%)		27	10-94	
Nitrobenzene-d5 (%)		77	35-114	
2-Fluorobiphenyl (%)		79	43-116	
2,4,6-Tribromophenol (%)		86	10-123	
Terphenyl-d14 (%)		94	33-141	

Dilution Factor 1

MB denotes Method Blank

NA denotes Not Applicable

Waste Stream Technology, Inc.

Volatile Organics Analysis

SW-846 8260B

Site: Zurbrick Rd.
Date Sampled: 10/19/01
Date Received: 10/19/01

Group Number: 2011-2514
Units: µg/L
Matrix: Aqueous

WST ID: WS88077
Client ID: #7 (Ground Water)
Extraction Date: NA
Date Analyzed: 10/25/01

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
chloromethane	10	Not detected		U
vinyl chloride	10	Not detected		U
bromomethane	10	Not detected		U
chloroethane	10	Not detected		U
1,1-dichloroethene	5	Not detected		U
acetone	100	Not detected		U
carbon disulfide	5	Not detected		U
methylene chloride	5	Not detected		U
trans-1,2-dichloroethene	5	Not detected		U
1,1-dichloroethane	5	Not detected		U
vinyl acetate	50	Not detected		U
2-butanone	100	Not detected		U
cis-1,2-dichloroethene	5	Not detected		U
chloroform	5	Not detected		U
1,1,1-trichloroethane	5	Not detected		U
carbon tetrachloride	5	Not detected		U
benzene	5	Not detected		U
1,2-dichloroethane	5	Not detected		U
trichloroethene	5	Not detected		U
1,2-dichloropropane	5	Not detected		U
bromodichloromethane	5	Not detected		U
2-chloroethylvinyl ether	10	Not detected		U
4-methyl-2-pentanone	50	Not detected		U
cis-1,3-dichloropropene	5	Not detected		U
toluene	5	Not detected		U
trans-1,3-dichloropropene	5	Not detected		U
1,1,2-trichloroethane	5	Not detected		U
2-hexanone	50	Not detected		U
tetrachloroethene	5	Not detected		U
dibromochloromethane	5	Not detected		U
chlorobenzene	5	1		J
ethylbenzene	5	Not detected		U
m,p-xylene	5	Not detected		U
o-xylene	5	Not detected		U
styrene	5	Not detected		U
bromoform	5	Not detected		U
1,1,2,2-tetrachloroethane	5	Not detected		U
1,2-Dichloroethane-d4 (%)		101	76-119	
Toluene-d8 (%)		99	80-117	
Bromofluorobenzene (%)		99	82-117	

Dilution Factor 1

VOC Water Method Blank

SW-846 8260B

Site: Zurbrick Rd.
Date Sampled: NA
Date Received: NA

Group Number: 2011-2514
Units: µg/L

WST ID: MB102501
Client ID: NA
Extraction Date: NA
Date Analyzed: 10/25/01

Compound	Detection Limit	Result	QC Limits (%)	Qualifier
chloromethane	10	Not detected		U
vinyl chloride	10	Not detected		U
bromomethane	10	Not detected		U
chloroethane	10	Not detected		U
1,1-dichloroethene	5	Not detected		U
acetone	100	Not detected		U
carbon disulfide	5	Not detected		U
methylene chloride	5	6		
trans-1,2-dichloroethene	5	Not detected		U
1,1-dichloroethane	5	Not detected		U
vinyl acetate	50	Not detected		U
2-butanone	100	Not detected		U
cis-1,2-dichloroethene	5	Not detected		U
chloroform	5	Not detected		U
1,1,1-trichloroethane	5	Not detected		U
carbon tetrachloride	5	Not detected		U
benzene	5	Not detected		U
1,2-dichloroethane	5	Not detected		U
trichloroethene	5	Not detected		U
1,2-dichloropropane	5	Not detected		U
bromodichloromethane	5	Not detected		U
2-chloroethylvinyl ether	10	Not detected		U
4-methyl-2-pentanone	50	Not detected		U
cis-1,3-dichloropropene	5	Not detected		U
toluene	5	Not detected		U
trans-1,3-dichloropropene	5	Not detected		U
1,1,2-trichloroethane	5	Not detected		U
2-hexanone	50	Not detected		U
tetrachloroethene	5	Not detected		U
libromochloromethane	5	Not detected		U
chlorobenzene	5	Not detected		U
ethylbenzene	5	Not detected		U
ı,p-xylene	5	Not detected		U
-xylene	5	Not detected		U
styrene	5	Not detected		U
romoform	5	Not detected		U
,1,2,2-tetrachloroethane	5	Not detected		U
1,2-Dichloroethane-d4 (%)		98	76-119	
oluene-d8 (%)		99	80-117	
romofluorobenzene (%)		98	82-117	

Dilution Factor 1

"B denotes Method Blank

A denotes Not Applicable

Waste Stream Technology, Inc.

Metals Analysis Report

Lead by ICP

SW-846 6010

Site: Zurbrick Rd.
Date Sampled: 10/19/01
Date Received: 10/19/01

Group Number: 2011-2514
Units: mg/Kg
Matrix: Soil

Date Digested: 10/23/01

WST ID	Client ID	Detection Limit	Result	Date Analyzed
WS88071	#1 SB - 1A	20.5	36000	10/24/01
WS88072	#2 SB - 2A	102	32500	10/24/01
WS88073	#3 SB - 3A	4.10	9700	10/24/01
WS88074	#4 SB - 4A	4.10	958	10/24/01
WS88075	#5 SB - 5A	4.10	927	10/24/01

Surface Samples (1-2 ft)

Waste Stream Technology, Inc.
Metals Analysis Result Report

Site: Zurbrick Rd.
Date Sampled: 10/19/01
Date Received: 10/19/01

Group Number: 2011-2514-
Units: mg/L
Matrix: Aqueous

WST ID: WS88076
Client ID: #6 (Surface Water)
Digestion Date: 10/23/01

Analyte	Detection Limit	Result	Date Analyzed	Analysis Method
Aluminum by ICP	0.025	0.060	10/23/01	SW-846 6010
Antimony by ICP	0.011	Not detected	10/23/01	SW-846 6010
Arsenic by ICP	0.009	Not detected	10/23/01	SW-846 6010
Barium by ICP	0.005	0.192	10/23/01	SW-846 6010
Beryllium by ICP	0.005	Not detected	10/23/01	SW-846 6010
Cadmium by ICP	0.005	Not detected	10/23/01	SW-846 6010
Calcium by ICP	0.024	157	10/23/01	SW-846 6010
Chromium by ICP	0.005	Not detected	10/23/01	SW-846 6010
Cobalt by ICP	0.005	Not detected	10/23/01	SW-846 6010
Copper by ICP	0.009	0.009	10/23/01	SW-846 6010
Iron by ICP	0.083	0.500	10/23/01	SW-846 6010
Lead by ICP	0.015	Not detected	10/23/01	SW-846 6010
Magnesium by ICP	0.120	32.4	10/23/01	SW-846 6010
Manganese by ICP	0.005	0.480	10/23/01	SW-846 6010
Mercury by Cold Vapor	0.001	Not detected	11/01/01	SW-846 7470
Nickel by ICP	0.005	0.006	10/23/01	SW-846 6010
Potassium by ICP	0.140	20.7	10/29/01	SW-846 6010
Selenium by ICP	0.019	Not detected	10/23/01	SW-846 6010
Silver by ICP	0.005	Not detected	10/23/01	SW-846 6010
Sodium by ICP	0.450	64.1	10/29/01	SW-846 6010
Thallium by ICP	0.008	Not detected	10/23/01	SW-846 6010
Vanadium by ICP	0.005	Not detected	10/23/01	SW-846 6010
Zinc by ICP	0.013	0.014	10/23/01	SW-846 6010

Waste Stream Technology, Inc.
Metals Analysis Result Report

Site: Zurbrick Rd.
Date Sampled: 10/19/01
Date Received: 10/19/01

Group Number: 2011-2514
Units: mg/L
Matrix: Aqueous

WST ID: WS88077
Client ID: #7 (Ground Water)
Digestion Date: 10/23/01

Analyte	Detection Limit	Result	Date Analyzed	Analysis Method
Aluminum by ICP	0.025	0.304	10/23/01	SW-846 6010
Antimony by ICP	0.011	Not detected	10/23/01	SW-846 6010
Arsenic by ICP	0.009	Not detected	10/23/01	SW-846 6010
Barium by ICP	0.005	0.241	10/23/01	SW-846 6010
Beryllium by ICP	0.005	Not detected	10/23/01	SW-846 6010
Cadmium by ICP	0.005	Not detected	10/23/01	SW-846 6010
Calcium by ICP	0.024	162	10/23/01	SW-846 6010
Chromium by ICP	0.005	Not detected	10/23/01	SW-846 6010
Cobalt by ICP	0.005	Not detected	10/23/01	SW-846 6010
Copper by ICP	0.009	0.019	10/23/01	SW-846 6010
Iron by ICP	0.083	5.65	10/23/01	SW-846 6010
Lead by ICP	0.015	0.030	10/23/01	SW-846 6010
Magnesium by ICP	0.120	32.8	10/23/01	SW-846 6010
Manganese by ICP	0.005	0.730	10/23/01	SW-846 6010
Mercury by Cold Vapor	0.001	Not detected	11/02/01	SW-846 7470
Nickel by ICP	0.005	0.005	10/23/01	SW-846 6010
Potassium by ICP	0.140	19.7	10/29/01	SW-846 6010
Selenium by ICP	0.019	Not detected	10/23/01	SW-846 6010
Silver by ICP	0.005	Not detected	10/23/01	SW-846 6010
Sodium by ICP	0.120	63.9	10/29/01	SW-846 6010
Thallium by ICP	0.008	Not detected	10/23/01	SW-846 6010
Vanadium by ICP	0.005	Not detected	10/23/01	SW-846 6010
Zinc by ICP	0.013	0.037	10/23/01	SW-846 6010

WASTE STREAM TECHNOLOGY, INC.
302 Grote Street
Buffalo, NY 14207
(716) 876-5290

Analytical Data Report
Report Date : 11/20/01
Group Number : 2011-2660

Prepared For :
Mr. Fred Kozminski
USACE - Buffalo District
1776 Niagara Street
Buffalo, NY 14207
Fax: (716) 879 - 4355

Site : Zuburick Rd.

Analytical Parameters	Analytical Services Number of Samples	Turnaround Time
Lead	15	Standard

Report Released By : Daniel W. Vollmer

Daniel W. Vollmer, Laboratory QA/QC Director

ENVIRONMENTAL LABORATORY ACCREDITATION CERTIFICATION NUMBERS
NYSDOH ELAP #11179 NJDEPE #73977 FDOH #E87581

Waste Stream Technology, Inc.
302 Grote Street
Buffalo, NY 14207
(716) 876-5290

Analytical Data Report

Group Number: 2011-2660
Site: Zurburick Rd.

Field and Laboratory Information

WST ID	Client ID	Matrix	Date Sampled	Date Received	Time
WS88780	1B	Soil	11/07/01	11/07/01	12:25
WS88781	2B	Soil	11/07/01	11/07/01	12:25
WS88782	3B	Soil	11/07/01	11/07/01	12:25
WS88783	4B	Soil	11/07/01	11/07/01	12:25
WS88784	5B	Soil	11/07/01	11/07/01	12:25
WS88785	6	Soil	11/07/01	11/07/01	12:25
WS88786	7	Soil	11/07/01	11/07/01	12:25
WS88787	8	Soil	11/07/01	11/07/01	12:25
WS88788	9	Soil	11/07/01	11/07/01	12:25
WS88789	10	Soil	11/07/01	11/07/01	12:25
WS88790	10B	Soil	11/07/01	11/07/01	12:25
WS88791	11	Soil	11/07/01	11/07/01	12:25
WS88792	11B	Soil	11/07/01	11/07/01	12:25
WS88793	12	Soil	11/07/01	11/07/01	12:25
WS88794	12B	Soil	11/07/01	11/07/01	12:25

ORGANIC DATA QUALIFIERS

U - Indicates compound was analyzed for but not detected.

J - Indicates an estimated value. This flag is used to qualify the following: when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed; a compound is detected in the sample but the result is less than the method quantitation limit but greater than the statistically calculated laboratory method detection limit; the result for a compound is estimated due to the analysis of a sample beyond the USEPA defined holding time; the result for a compound is estimated due to a quality control sample result that is outside the laboratory quality control recovery limits.

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS.

B - This flag is used when the analyte is found in the associated blank as well as the sample.

E - This flag identifies all compounds whose concentrations exceed the calibration range of the GC/MS instrument of that specific analysis.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.

G - Matrix spike recovery is greater than the expected upper limit of analytical performance.

L - Matrix spike recovery is less than the expected lower limit of analytical performance.

- Indicates that a surrogate recovery was found to be outside the expected limits of analytical performance.

$ - Indicates that the surrogate compound was diluted out. The sample had to be diluted to obtain analytical results and a recovery could not be calculated.

(%) - Indicates that the compound is a surrogate and that the value reported for this compound is in percent recovery. The quality control recovery limits are indicated in the detection limit or QC limits column.

METHODOLOGIES

The specific methodologies employed in obtaining the analytical data reported are indicated on each of the result forms. The method numbers shown refer to the following U.S. Environmental Protection Agency Reference:

Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020, March 1979, Revised 1983, U.S. Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268.

Federal Register, 40 CFR Part 136: Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act. Revised July 1992.

Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. Third Edition, Revised December 1996, U.S. EPA SW-846.

Annual Book of ASTM Standards, Volume II. ASTM, 100 Harbor Drive, West Conshohocken, PA 19428-2959.

Standard Methods for the Examination of Water and Wastewater. (20th Edition). American Public Health Association, 1105 18th Street, NW, Washington, D.C. 20036.

Waste Stream Technology, Inc.

Metals Analysis Report

Lead by ICP

SW-846 6010

Site: Zurburick Rd.
Date Sampled: 11/07/01
Date Received: 11/07/01

Group Number: 2011-2660
Units: mg/Kg
Matrix: Soil

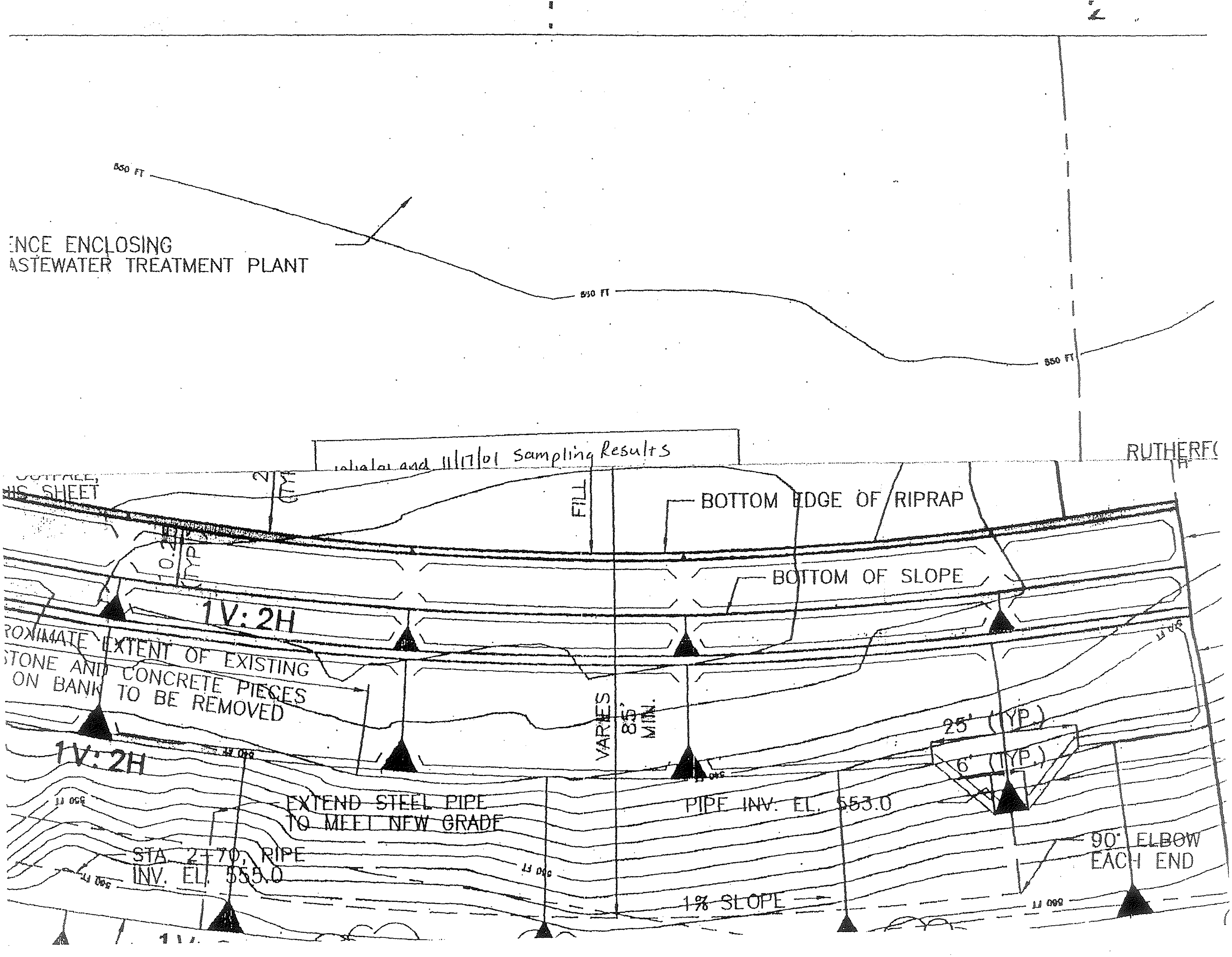
Date Digested: 11/12/01

WST ID	Client ID	Detection Limit	Result	Date Analyzed
WS88780	1B	4.10	543	11/13/01
WS88781	2B	410	61000	11/15/01
WS88782	3B	41.0	9810	11/15/01
WS88783	4B	410	86600	11/15/01
WS88784	5B	4.10	64.3	11/15/01
WS88785	6 - 6A	4.10	313	11/13/01
WS88786	7 - 7A	4.10	9860	11/13/01
WS88787	8 - 8A	4.10	994	11/13/01
WS88788	9 - 9A	4.10	584	11/13/01
WS88789	10 - 10A	4.10	8100	11/13/01
WS88790	10B	4.10	461	11/13/01
WS88791	11 - 11A	4.10	85.0	11/15/01
WS88792	11B	20.5	3690	11/15/01
WS88793	12 - 12A	4.10	101	11/15/01
WS88794	12B	20.5	1180	11/15/01

Surface (A) and Subsurface (B) Samples

A = 1 - 2 ft

B = ±4.5 ft



850 FT
ENCE ENCLOSING
ASTEWATER TREATMENT PLANT
850 FT
850 FT
RUTHERF
Sampling Results
IIS SHEET
FILL
BOTTOM EDGE OF RIPRAP
BOTTOM OF SLOPE
1V: 2H
ROXIMATE EXTENT OF EXISTING
STONE AND CONCRETE PIECES
ON BANK TO BE REMOVED
VARIES
8.5' MIN.
25' (TYP.)
6' (TYP.)
1V: 2H
EXTEND STEEL PIPE
TO MEET NEW GRADE
PIPE INV. EL. 553.0
STA. 2+70, PIPE
INV. EL. 555.0
90° ELBOW
EACH END
1% SLOPE
560 FT

APPENDIX B

TEST PIT LOGS

TEST PIT LOG

Panamerican Environmental, Inc.
2390 Clinton Street
Buffalo, New York 14227
(716) 821-1650

PROJECT: Zubrick Road / Village of Depew - DPW	SHEET: OF
CLIENT: Village of Depew	JOB NUMBER:
CONTRACTOR: SLC	LOCATION: Zubrick Road
DATE STARTED: June 10, 2003	GROUND ELEVATION: N/A
DATE COMPLETED: June 10, 2003	OPERATOR: Ron Brown
PIT NUMBER: ZR-TP-01	GEOLOGIST: J. Ryszkiewicz
	GROUND WATER: 7 feet below ground surface

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	DESCRIPTION
1–3			Brown, silty loam topsoil with organic detritus (grass, roots, etc.), coarse to fine (C-F) gravel, and light brown medium to fine (M-F) sand
4–5			Black, incinerator fill debris, consisting of ash, glass pieces, bottles, and rusted metal. Layer was damp to wet.
6			Light brown, sandy silt with traces of C-F gravel
7			Grey, silty sand. Layer was enveloped with water.
8			Ended Test Pit due to groundwater.
9–12			

COMMENTS: Sampled the surface soil for metals and semi-volatiles and the subsurface soil from four to five feet below ground surface. Also, sampled groundwater at the bottom of the test pit. Readings on the PID were 0.0ppm (background) throughout the stratigraphy of the test pit.

TEST PIT LOG

Panamerican Environmental, Inc.
2390 Clinton Street
Buffalo, New York 14227
(716) 821-1650

PROJECT: Zubrick Road / Village of Depew - DPW	SHEET: OF
CLIENT: Village of Depew	JOB NUMBER:
CONTRACTOR: SLC	LOCATION: Zubrick Road
DATE STARTED: June 10, 2003	GROUND ELEVATION: N/A
DATE COMPLETED: June 10, 2003	OPERATOR: Ron Brown
PIT NUMBER: ZR-TP-02	GEOLOGIST: J. Ryszkiewicz
	GROUND WATER: 9.5 feet below ground surface

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	DESCRIPTION
1 – 3			- Brown, silty loam topsoil with organic detritus (roots, grass, etc.), medium to fine (M-F) sand, coarse to fine (C-F) gravel, and light brown medium to fine (M-F) sand
4 – 5			- Rust (orange) and black incinerator debris consisting of ash, glass pieces, bottles, and rusted metal objects.
6 – 7			- Reddish (light) brown, C-F sandy silt. Layer was cohesive.
8 – 9			- Grey, C-F gravel with traces of sand and silt. Bottom portion of the layer was wet.
10 – 12			Ended Test Pit due to groundwater.

COMMENTS: Sampled the surface soil for metals and semi-volatiles and the subsurface soil from three and a half to five and a half feet below ground surface. Readings on the PID were 0.0ppm (background) throughout the stratigraphy of the test pit.

TEST PIT LOG

Panamerican Environmental, Inc.
2390 Clinton Street
Buffalo, New York 14227
(716) 821-1650

PROJECT: Zubrick Road / Village of Depew - DPW	SHEET: OF
CLIENT: Village of Depew	JOB NUMBER:
CONTRACTOR: SLC	LOCATION: Zubrick Road
DATE STARTED: June 10, 2003	GROUND ELEVATION: N/A
DATE COMPLETED: June 10, 2003	OPERATOR: Ron Brown
PIT NUMBER: ZR-TP-03	GEOLOGIST: J. Ryszkiewicz
	GROUND WATER: Not Encountered

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	DESCRIPTION
1			- Brown, silty loam topsoil with organic detritus (grass, roots, etc.), coarse to fine (C-F) gravel, light brown medium to fine (M-F) sand
2			
3			- Black, incinerator debris consisting of ash, glass pieces, bottles, and rusted metal objects. Layer was damp to wet.
4			
5			- Rust (orange) colored incinerator debris consitsting of ash, glass pieces, bottles, and rusted metal objects.
6			
7			- Black, incinerator debris consisting of ash, glass pieces, bottles, and rusted metal objects, screening, roofing and building materials. Layer was damp. There was a strong odor of sewage/waste.
8			
9			Ended Test Pit due to sufficient amount of material observed.
10			
11			
12			

COMMENTS: Sampled the surface soil for total lead constituents and the subsurface soil from four and a half to five and a half feet in one sample and five and a half to eight feet below ground surface. Readings on the PID were 0.0ppm (background) throughout the stratigraphy of the test pit.

TEST PIT LOG

Panamerican Environmental, Inc.
2390 Clinton Street
Buffalo, New York 14227
(716) 821-1650

PROJECT: Zubrick Road / Village of Depew - DPW	SHEET: OF
CLIENT: Village of Depew	JOB NUMBER:
CONTRACTOR: SLC	LOCATION: Zubrick Road
DATE STARTED: June 10, 2003	GROUND ELEVATION: N/A
DATE COMPLETED: June 10, 2003	OPERATOR: Ron Brown
PIT NUMBER: ZR-TP-05	GEOLOGIST: J. Ryszkiewicz
	GROUND WATER: Not Encountered

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	DESCRIPTION
1 – 2			- Brown, silty loam topsoil with organic detrtius (grass, roots, etc.), coarse to fine (C-F) gravel, light brown, medium to fine (M-F) sand with glass pieces and bottles.
3 – 5			- Rust (orange) colored incinerator debris consisting of ash, glass pieces, bottles, and rusted metal objects.
6 – 7			- Black incenerator debris consisting of ash, glass pieces, bottles, and rusted metal objects. Layer was damp to wet.
8 – 9			- Grey silty sand. Layer was cohesive and assumed to be native to the area.
10 – 12			Ended Test Pit due to the encountering of apparent native material.

COMMENTS: Sampled the surface soil for metals and semi-volatiles and the subsurface soil at eight feet below ground surface. Readings on the PID were 0.0ppm (background) throughout the stratigraphy of the test pit.

TEST PIT LOG

Panamerican Environmental, Inc.
2390 Clinton Street
Buffalo, New York 14227
(716) 821-1650

PROJECT: Zubrick Road / Village of Depew - DPW	SHEET: OF
CLIENT: Village of Depew	JOB NUMBER:
CONTRACTOR: SLC	LOCATION: Zubrick Road
DATE STARTED: June 10, 2003	GROUND ELEVATION: N/A
DATE COMPLETED: June 10, 2003	OPERATOR: Ron Brown
PIT NUMBER: ZR-TP-07	GEOLOGIST: J. Ryszkiewicz
	GROUND WATER: Not Encountered

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	DESCRIPTION
1			- Brown, silty loam topsoil with organic detritus (grass, roots, etc.), light brown silty clay and trace amounts of coarse to fine (C-F) gravel. Layer appeared to be a cap for underlying fill.
2			
3			
4			
6			- Black incinerator debris consisting of ash, glass pieces, bottles, and rusted metal objects, screening, roofing and building materials. Layer was damp. There was a strong odor of sewage/waste.
8			
10			
12			
14			- Grey silty sand. Layer was cohesive and assumed to be native to the area.
16			Ended Test Pit due to the encountering of apparent native material.

COMMENTS: Sampled the surface soil for total lead constituents and the subsurface soil at seven feet below ground surface. Readings on the PID were 0.0ppm (background) throughout the stratigraphy of the test pit.

TEST PIT LOG

Panamerican Environmental, Inc.
2390 Clinton Street
Buffalo, New York 14227
(716) 821-1650

PROJECT: Zubrick Road / Village of Depew - DPW	SHEET: OF
CLIENT: Village of Depew	JOB NUMBER:
CONTRACTOR: SLC	LOCATION: Zubrick Road
DATE STARTED: June 10, 2003	GROUND ELEVATION: N/A
DATE COMPLETED: June 10, 2003	OPERATOR: Ron Brown
PIT NUMBER: ZR-TP-08	GEOLOGIST: J. Ryszkiewicz
	GROUND WATER: 8 +/- feet below ground surface

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	DESCRIPTION
1			- Brown, silty loam topsoil with organic detritus (grass, roots, etc.), coarse to fine (C-F) gravel, light brown, medium to fine (M-F) sand with glass pieces and bottles.
2			
3			- Rust (orange) colored incinerator debris consisting of ash, glass pieces, bottles, and rusted metal objects.
4			
5			
6			
7			- Black incinerator debris consisting of ash, glass pieces, bottles, and rusted metal objects, screening, roofing and building materails, rubber hoses and gaskets. Layer was damp. There was a strong odor of sewage/waste.
8			
9			- Grey, silty (M-F) sand. Layer was cohesive and assumed to be native to the area.
10			
11			Ended Test Pit due to the encountering of apparent natural material being observed.
12			

COMMENTS: Sampled the surface soil for total lead constituents and the subsurface soil at five feet below ground surface. Readings on the PID were 0.0ppm (background) throughout the stratigraphy of the test pit. Water at the 8+/- bgs level was observed, but appeared to be pearched water which was trapped in the fill materials - possible petroleum sheen was observed on the top of the pooled water.

TEST PIT LOG

Panamerican Environmental, Inc.
2390 Clinton Street
Buffalo, New York 14227
(716) 821-1650

PROJECT: Zubrick Road / Village of Depew - DPW	SHEET: OF
CLIENT: Village of Depew	JOB NUMBER:
CONTRACTOR: SLC	LOCATION: Zubrick Road
DATE STARTED: June 10, 2003	GROUND ELEVATION: N/A
DATE COMPLETED: June 10, 2003	OPERATOR: Ron Brown
PIT NUMBER: ZR-TP-09	GEOLOGIST: J. Ryszkiewicz
	GROUND WATER: 11 feet below ground surface

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	DESCRIPTION
1			- Brown, silty loam topsoil with organic detritus (grass, roots, etc.), coarse to fine (C-F) gravel, light brown, medium to fine (M-F) sand
2			
3			- Rust (orange) colored, incinerator debris consisting of ash, glass pieces, bottles, and rusted metal objects.
4			
5			
6			
7			
8			- Black, incinerator debris consisting of ash, glass pieces, bottles, and rusted metal objects, screening, roofing and building materials. Layer was damp. There was a strong odor of sewage/waste.
9			
10			
11			- Grey, silty (M-F) sand. Layer was enveloped with water.
12			Ended Test Pit due to groundwater.
13			

COMMENTS: Sampled the surface soil for total lead constituents and the subsurface soil at eight feet below ground surface. Also, sampled groundwater at the bottom of the test pit. Readings on the PID were 0.0ppm (background) throughout the stratigraphy of the test pit.

TEST PIT LOG

Panamerican Environmental, Inc.
2390 Clinton Street
Buffalo, New York 14227
(716) 821-1650

PROJECT: Zubrick Road / Village of Depew - DPW	SHEET: OF
CLIENT: Village of Depew	JOB NUMBER:
CONTRACTOR: SLC	LOCATION: Zubrick Road
DATE STARTED: June 10, 2003	GROUND ELEVATION: N/A
DATE COMPLETED: June 10, 2003	OPERATOR: Ron Brown
PIT NUMBER: ZR-TP-11	GEOLOGIST: J. Ryszkiewicz
	GROUND WATER: 8 feet below ground surface

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	DESCRIPTION
1–2			Brown, silty loam topsoil with organic detritus (grass, roots, etc.), medium to fine (M-F) sand and traces of coarse to fine (C-F) gravel.
3–7			Light brown, M-F sand with traces of silt and rust (orange) and black colored incinerator debris consisting of ash, glass pieces, bottles, and rusted metal objects, with rubber and plastic debris.
8			Grey, C-F gravel with trace amounts of M-F sand. Groundwater was evident.
9–12			Ended Test Pit due to groundwater.

COMMENTS: Sampled the surface soil for metals and semi-volatiles and the subsurface soil from two to four feet below ground surface. Also, sampled groundwater at the bottom of the test pit. Readings on the PID were 0.0ppm (background) throughout the stratigraphy of the test pit.

TEST PIT LOG

Panamerican Environmental, Inc.
2390 Clinton Street
Buffalo, New York 14227
(716) 821-1650

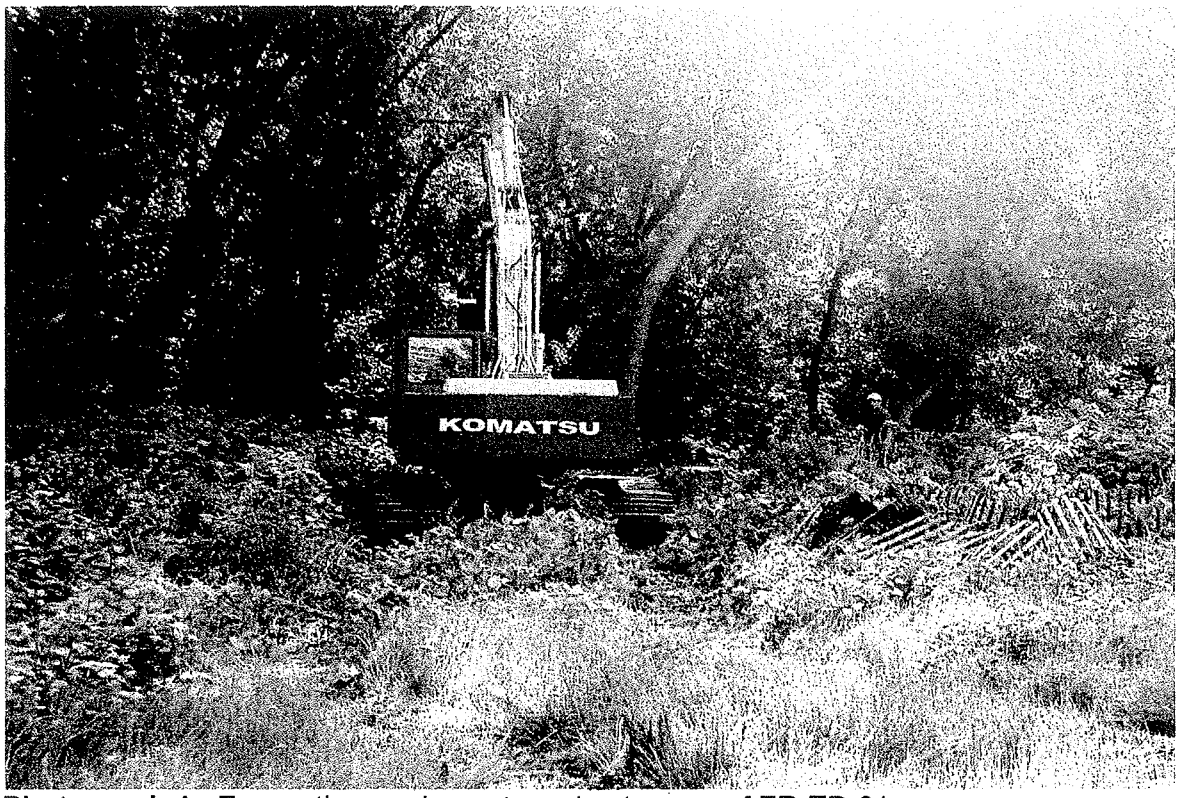
PROJECT: Zubrick Road / Village of Depew - DPW	SHEET: OF
CLIENT: Village of Depew	JOB NUMBER:
CONTRACTOR: SLC	LOCATION: Zubrick Road
DATE STARTED: June 10, 2003	GROUND ELEVATION: N/A
DATE COMPLETED: June 10, 2003	OPERATOR: Ron Brown
PIT NUMBER: ZR-TP-12	GEOLOGIST: J. Ryszkiewicz
	GROUND WATER: 11 feet below ground surface

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	DESCRIPTION
1 – 2			- Brown, silty loam topsoil with organic detritus (grass, roots, etc.), light brown clay and trace amounts of coarse to fine (C-F) gravel. Layer appeared to be an apparent cap for underlying fill.
3 – 7			- Black, with traces of rust (orange) colored incinerator debris consisting of ash, glass pieces, and numerous bottles of various sizes and colors, and rusted metal objects.
8 – 11			- Rust (orange) with traces of black colored incinerator debris consisting of ash, glass pieces, numerous bottles of various sizes and colors, and rusted metal objects, mixed with grey, sandy silt.
11 – 12			- Grey, C-F gravel with traces of sand and silt. Layer was wet.
12			- Grey, tight sandy and clayey silt. Layer was enveloped with water. Ended Test Pit due to groundwater.

COMMENTS: Sampled the surface soil for total lead constituents and the subsurface soil from seven to seven and a half feet below ground surface. Also, sampled groundwater at the bottom of the test pit. Readings on the PID were 0.0ppm (background) throughout the stratigraphy of the test pit.

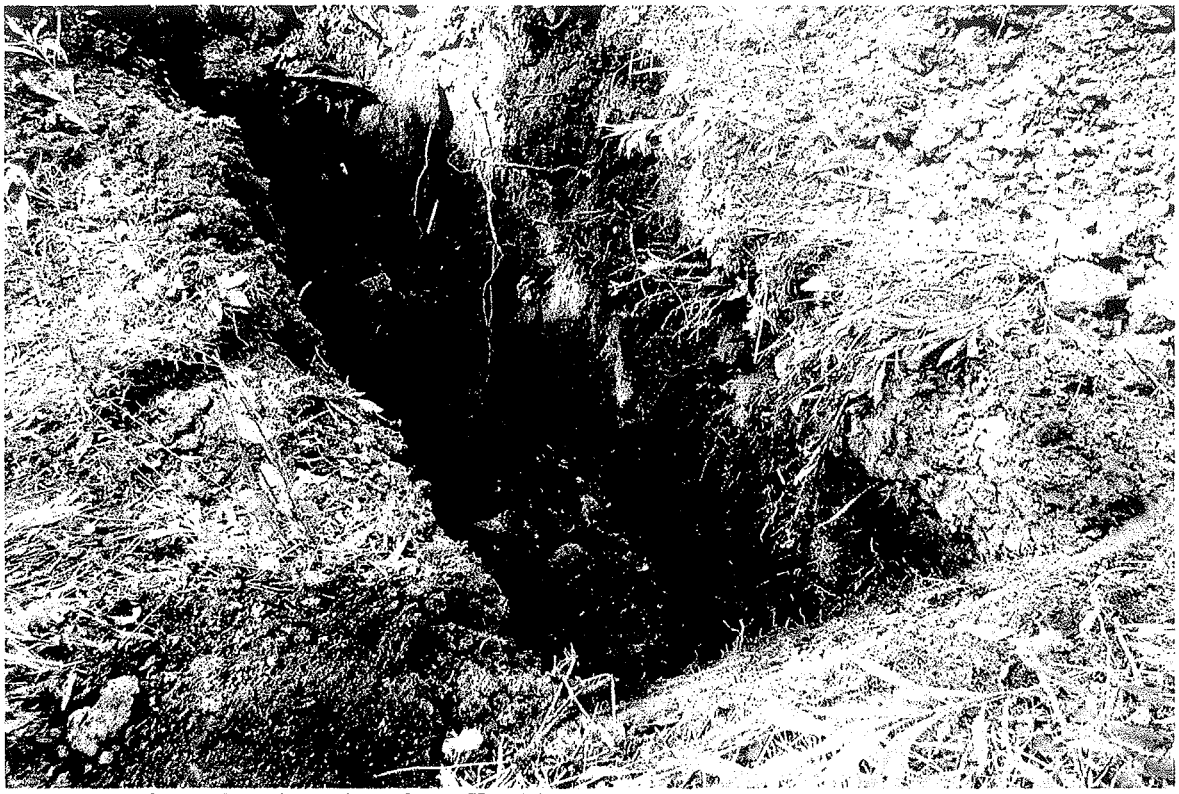
APPENDIX C

PHOTOGRAPHS



Photograph 1. Excavation equipment moving to area of ZR-TP-01

Photograph 2. Stratigraphy and groundwater of ZR-TP-02

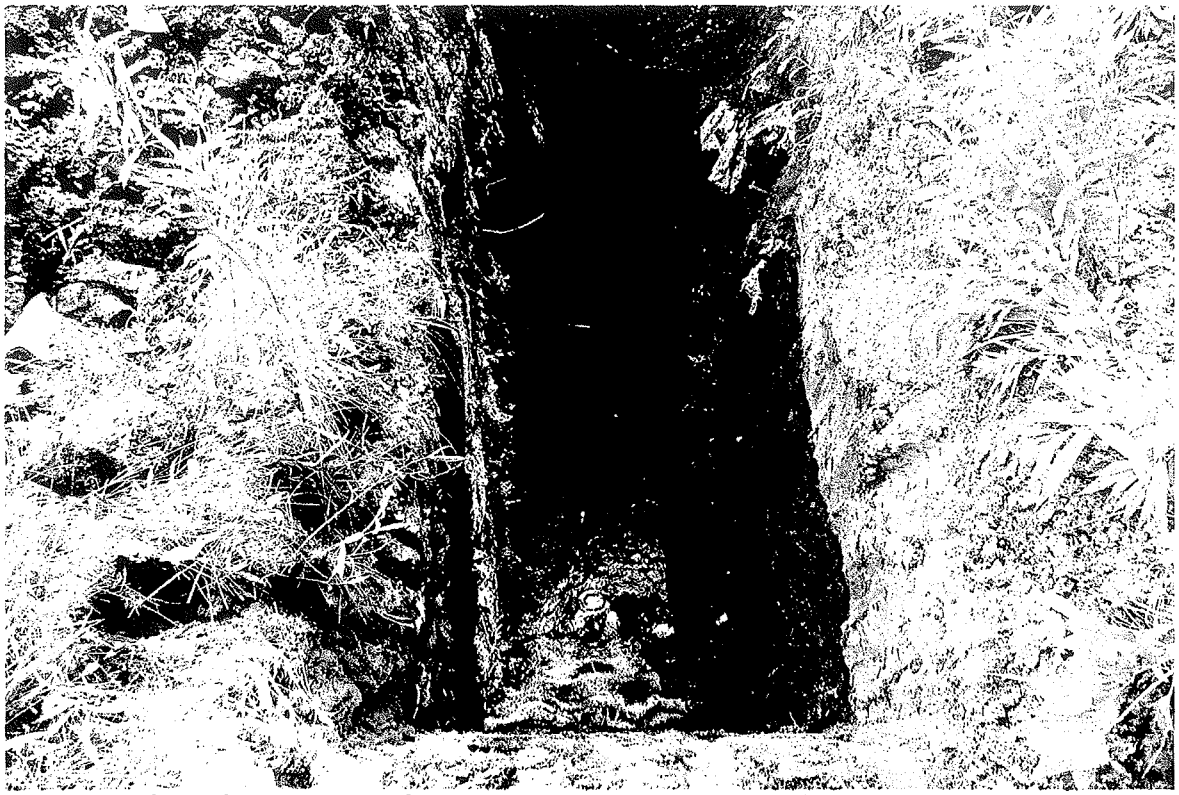


Photograph 3. Stratigraphy of ZR-TP-03

Photograph 4. Stratigraphy of ZR-TP-03

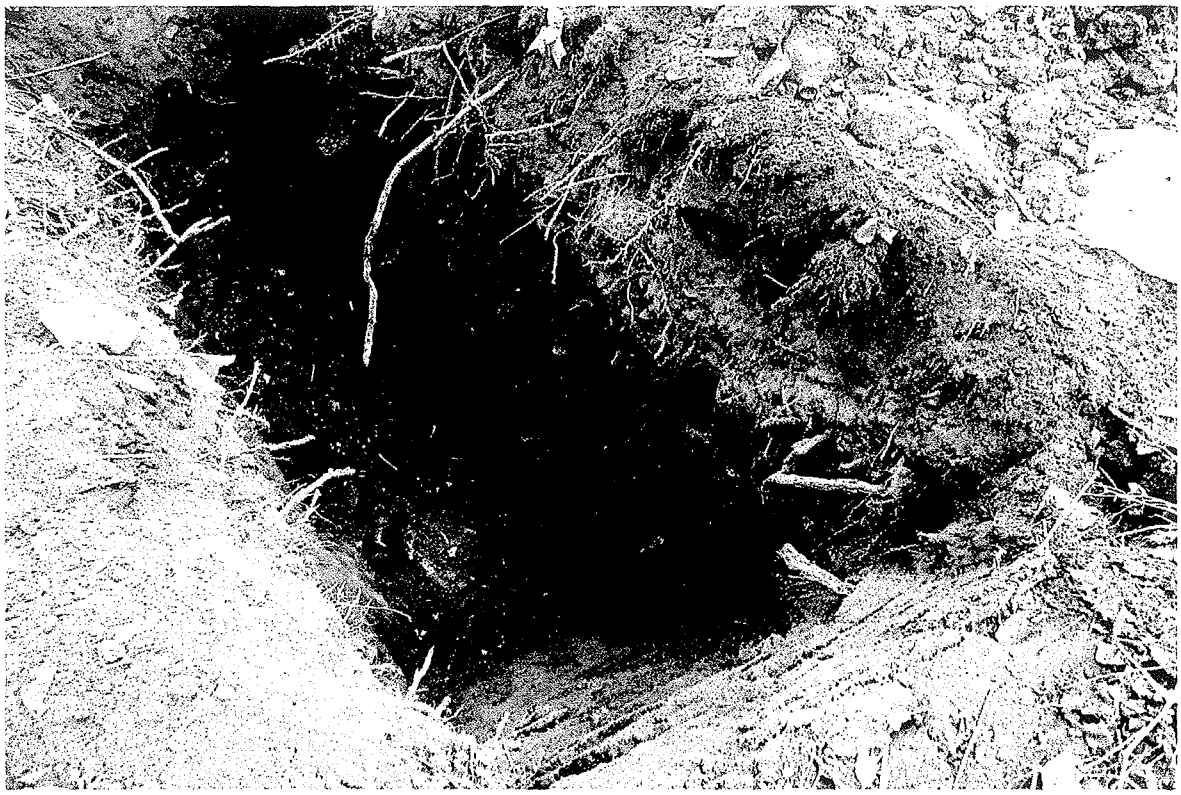
Photograph 5. Stockpiled material excavated from ZR-TP-07

Photograph 6. Stratigraphy of material within ZR-TP-07



Photograph 7. Stratigraphy of material and groundwater within ZR-TP-11

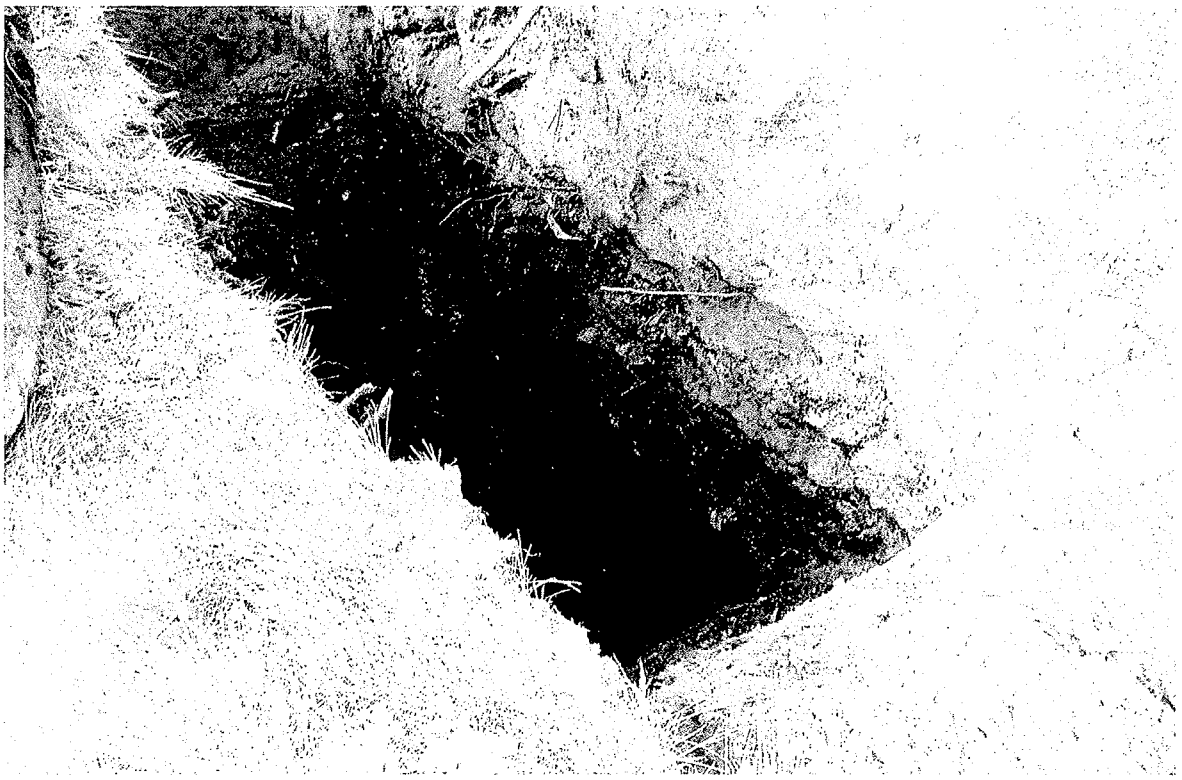
Photograph 8. Stockpile of material excavated from ZR-TP-12



Photograph 9. Stratigraphy of material within ZR-TP-12

Photograph 10. View of test trench through mounded area, labeled ZR-TP-06

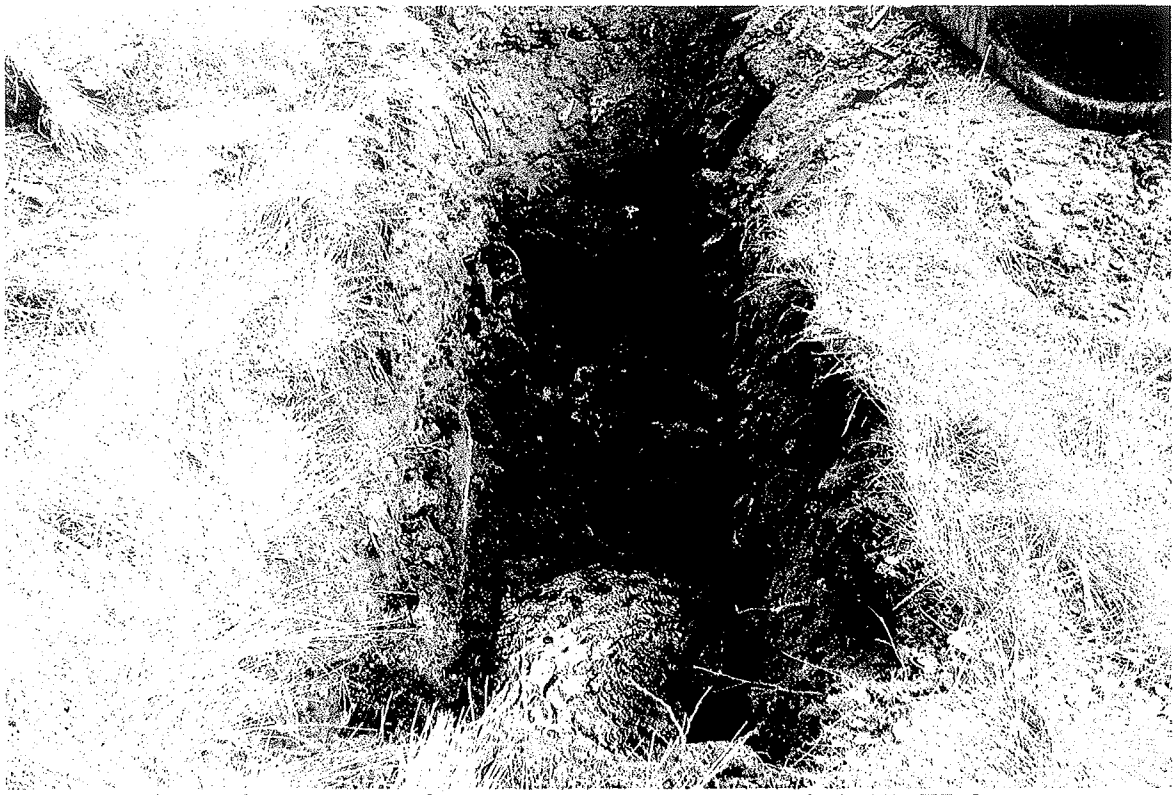
Photograph 11. Stratigraphy of material and groundwater within ZR-TP-09



Photograph 12. Stratigraphy of material within ZR-TP-05

Photograph 13. Stockpile of material excavated from ZR-TP-05

Photograph 14. Stratigraphy of material within ZR-TP-08



Photograph 15. Stratigraphy of material and groundwater within ZR-TP-08

Photograph 16. Stockpile of material excavated from ZR-TP-08

Photograph 17. Material and perched groundwater within the trench ZR-TP-08

Photograph 18. Material and perched groundwater within the trench ZR-TP-08

APPENDIX D

JOURNAL OF SOIL CONTAMINATION ARTICLE

Journal of Soil Contamination, 3(4): (1994)

Background Levels of Polycyclic Aromatic Hydrocarbons (PAH) and Selected Metals in New England Urban Soils

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ABSTRACT: Polycyclic aromatic hydrocarbons (PAH) are byproducts of combustion and are ubiquitous in the urban environment. They are also present in industrial chemical wastes, such as coal tar, petroleum refinery sludges, waste oils and fuels, and wood-treating residues. Thus, PAHs are chemicals of concern at many waste sites. Risk assessment methods will yield risk-based cleanup levels for PAHs that range from 0.1 to 0.7 mg/kg. Given their universal presence in the urban environment, it is important to compare risk-based cleanup levels with typical urban background levels before utilizing unrealistically low cleanup targets. However, little data exist on PAH levels in urban, nonindustrial soils. In this study, 60 samples of surficial soils from urban locations in three New England cities were analyzed for PAH compounds. In addition, all samples were analyzed for total petroleum hydrocarbons (TPH) and seven metals. The upper 95% confidence interval on the mean was 3 mg/kg for benzo(*a*)pyrene toxic equivalents, 12 mg/kg for total potentially carcinogenic PAH, and 25 mg/kg for total PAH. The upper 95% confidence interval was 373 mg/kg for TPH, which exceeds the target level of 100 mg/kg used by many state regulatory agencies. Metal concentrations were similar to published background levels for all metals except lead. The upper 95% confidence interval for lead was 737 mg/kg in Boston, 463 mg/kg in Providence, and 378 mg/kg in Springfield.

KEY WORDS: background, PAH, metals, urban, anthropogenic, soil.

I. INTRODUCTION

Polycyclic aromatic hydrocarbons (PAHs) are byproducts of combustion and are naturally occurring chemicals in the environment. Forest fires and volcanoes are major natural sources of PAHs, but there are anthropogenic sources as well due to burning of fossil fuels, including automobile and industrial emissions. PAHs are chemicals of concern in many waste site investigations that are undertaken pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), and state

hazardous waste programs. Risk assessments performed according to federal guidance for former manufactured gas plant sites, wood treating facilities, petroleum refineries, and other sites generally conclude that PAHs pose unreasonable risks to human health and that remedial actions must be taken to reduce risks to acceptable levels. The majority of the risk posed by PAHs is generally due to benzo(*a*)pyrene and the other PAHs that have been shown to cause cancer in laboratory animals after repeated dosings. The U.S. EPA (1993a) currently identifies seven PAHs as "probable human (B2) carcinogens": benzo(*a*)pyrene, benzo(*a*)anthracene, benzo(*b*)fluoranthene, benzo(*k*)fluoranthene, chrysene, dibenz(*a,h*)anthracene, and indeno(1,2,3-c,d)pyrene.

Because of the very health-protective assumptions used in regulatory risk assessments, very low risk-based clean-up levels for PAHs are derived for such sites. In Michigan, residential soil cleanup levels of 0.33 mg/kg for each carcinogenic PAH have been set (MDNR, 1993). In New Jersey, proposed residential soil cleanup levels are 0.66 mg/kg for benzo(*a*)pyrene (New Jersey *Register*, 1992). The use of standard CERCLA risk assessment guidance (U.S. EPA, 1993b) results in the derivation of a risk-based cleanup level for benzo(*a*)pyrene of 0.1 mg/kg.

All of these risk-based soil cleanup levels are below the urban, nonindustrial background soil concentrations presently reported in the literature. However, the availability of such data is very limited. Blumer (1961) reports that benzo(*a*)pyrene concentrations in Cape Cod, MA, soils range from 0.04 to 1.3 mg/kg. Menzie et al. (1992) report that urban background soil levels of total carcinogenic PAH range from 0.06 to 5.8 mg/kg. Butler et al. (1984) report that total PAH levels in soils alongside roadways in England range from 4 to 20 mg/kg, and potentially carcinogenic PAH range from 0.8 to 11.5 mg/kg. Blumer et al. (1977) report that total PAH levels in soils in a Swiss town range from 6 to 300 mg/kg.

It is very difficult to compare the data from those studies to the results of site risk assessments due to the limited dataset and the nonuniformity of the PAH compounds evaluated. Clearly, more data are required from nonindustrial urban locations to define the urban background level for PAH and to critically evaluate the role of risk assessment in setting remedial goals for PAH in soils. Accordingly, we have collected 60 samples of surficial soils from urban locations in three New England cities and analyzed them for all 17 PAH compounds present on the EPA's Target Compound List, which is used in the Superfund program. In addition, all samples were analyzed for total petroleum hydrocarbons (TPH) and for seven metals: arsenic, barium, cadmium, chromium, lead, mercury, and selenium.

II. METHODS

A. Sample Collection

Samples of surficial soils from urban locations in three New England cities were collected: Boston, MA; Providence, RI; and Springfield, MA. Twenty independent

samples and duplicates of two samples were collected in each city. The samples were collected on July 21, 22, and 23, 1992, respectively. The samples were taken at a depth of 0 to 6 in. in areas considered to be not directly affected by industrial sites. Generally, the locations were along roads and sidewalks, and in parks and open lots. Each location was characterized in writing, including a soil description, and photographically documented. The samples were collected following standard environmental sampling protocols (U.S. EPA, 1986).

B. Sample Analysis

Chemical analysis of the samples was performed by AnalytiKEM, Inc. (Cherry Hill, NJ). The samples were analyzed by GC-MS for the 17 PAH compounds present on the EPA's Target Compound List using the methods required by EPA Method 8270 for the analysis of semivolatile compounds. In addition, the samples were analyzed for the eight RCRA metals, total petroleum hydrocarbons (TPH; EPA Method 418.1), and total solids. The complete analyte list is given in Table 1.

C. Data Validation

Validation of the data received from AnalytiKEM was performed according to U.S. EPA (1991) guidelines. The data were reviewed for completeness, holding times, GC-MS tuning and system performance, initial and continuing calibrations, laboratory method blank analysis, surrogate recoveries, matrix spike and matrix spike duplicate analysis, field duplication precision, and compound quantitation and detection limits.

D. Data Analysis

The analytical data were summarized in accordance with U.S. EPA (1989) risk assessment guidance. If a compound was detected at least once in surface soil, one half the sample quantitation limit (SQL) was used as a proxy concentration for all samples reported as "below detection limit" in the estimation of exposure point concentrations. However, if a compound was not detected in any sample, that compound was omitted from further consideration. In addition, when a proxy concentration (i.e., one half the detection limit) was greater than the highest actual detected value for a compound in any sample, that concentration was considered to be an aberration and was omitted from the database. This is consistent with U.S. EPA (1989) guidance, which recognizes that high sample quantitation limits can lead to unrealistic concentration estimates.

TABLE 1
Chemical Analyses of Urban Soils

Semivolatile Organics, EPA Target Compound List
Naphthalene
Acenaphthylene
Acenaphthene
Fluorene
Phenanthrene
Anthracene
Fluoranthene
Pyrene
Benzo(*a*)anthracene
Chrysene
Benzo(*b*)fluoranthene
Benzo(*k*)fluoranthene
Benzo(*a*)pyrene
Indeno(1,2,3-cd)pyrene
Dibenzo(*a,h*)anthracene
Benzo(*g,h,i*)perylene
2-Methylnaphthalene
Metals
Arsenic, total
Barium, total
Cadmium, total
Chromium, total
Lead, total
Mercury, total
Selenium, total
Silver, total
Other
Total petroleum hydrocarbons
Solids

A slightly different method of analysis was used to evaluate PAH. Because PAH are generally found in groups, it was conservatively assumed that if one PAH was detected in a sample, other compounds in that class might also be present in that sample. Therefore, if one PAH was detected in a sample, all undetected PAH were assigned a proxy concentration equal to one half the SQL. If a sample had no detected PAH, no PAH were assumed to be present in the sample, and a concentration of zero was used for all nondetects.

Summary statistics (minimum, maximum, arithmetic mean, upper 95% confidence limit on the arithmetic mean, and frequency of detection) were generated for each compound for each city and for all three cities combined.

The data for PAH were summarized in several different ways. Of the 17 PAH analyzed in each sample, seven are considered to be probable human carcinogens (Group B2) by the U.S. EPA (1993a). The U.S. EPA has derived a cancer slope factor, which is a measure of the carcinogenic potency of a compound, only for benzo(*a*)pyrene (B(*a*)P) (U.S. EPA, 1993a). Review of the literature indicates that not all PAH are equally potent with respect to tumor induction. Several researchers have proposed toxic equivalency schemes that relate the tumorigenic potency of each PAH to that of B(*a*)P (ICF-Clement Associates, 1988; Woo, 1989). B(*a*)P toxic equivalency factors (B(*a*)P-TEFs) can be used to adjust either the B(*a*)P dose-response value to provide a compound-specific dose-response value, or the concentration of each PAH in a sample to be expressed in terms of B(*a*)P toxic equivalents (B(*a*)P-TE). The latter method was used here. B(*a*)P-TE were calculated using the B(*a*)P toxic equivalency factors recommended for use by the U.S. EPA (1993c), as shown in Table 2. For each sample, PAH concentrations were reported for each of the 17 PAH on the analyte list, for total PAH (tPAH), for total carcinogenic PAH (cPAH), and for B(*a*)P-TE, and these values were used to generate the summary statistics for each group of samples.

III. RESULTS

Analysis of the laboratory results for the PAH indicates that quality control criteria were acceptable. The data were analyzed to determine if any statistically significant differences existed between the datasets for the three cities. A Hartley test for homogeneity of variances (Mendenhall, 1979) and a one-factor analysis of variance to test for equality of the means (Mendenhall, 1979) indicated no statistically significant differences. The results indicate that the PAH data can be pooled and treated as one dataset for further statistical analyses.

TABLE 2
Benzo(*a*)Pyrene Toxic Equivalent Factors (BAP-TEF)

Compound	EPA TEF
Benzo(*a*)pyrene	1.0
Benz(*a*)anthracene	0.1
Benzo(*b*)fluoranthene	0.1
Benzo(*k*)fluoranthene	0.1
Chrysene	0.001
Dibenzo(*a,h*)anthracene	1.0
Indeno(1,2,3-c,d)pyrene	0.1

The results of the PAH analyses are presented in Table 3 for all cities combined. A summary of the PAH results by city and for all cities combined is presented in Table 4, which reports for each: tPAH, total cPAH, and total B(*a*)P-TE. The arithmetic mean and the upper 95% confidence limit concentration are reported for each. Table 4 provides a summary of the data by city, and the results are graphically presented in Figure 1.

Table 5 presents a summary of the metals, TPH, and solids data by city. A Hartley test for homogeneity of variances and a one-factor analysis of variance to test for equality of the means indicated that the metals and TPH data from the three cities cannot be combined. This is due to the fact that the concentrations in each city are not normally distributed and did not have equal variances. The concentrations of the metals are compared to the arithmetic mean concentrations in the eastern U.S. (ATSDR, 1992) in Table 5. Most notably, lead concentrations are much higher than background concentrations. This is most likely due to the effects of automobile exhaust.

In order to determine if sample location significantly affected PAH concentration results, individual samples were classified based on the sample location's

TABLE 3
Summary Statistics for PAH — All Areas Combined

Compound	Minimum detect (mg/kg)	Maximum detect (mg/kg)	Arithmetic mean	Upper 95% interval (mg/kg)	Frequency of detection[a]	
2-Methylnaphthalene	0.017	0.64	0.151	0.173	19	62
Acenaphthene	0.024	0.34	0.201	0.306	30	62
Acenaphthylene	0.018	1.10	0.173	0.208	24	62
Anthracene	0.029	5.70	0.351	0.535	54	62
Benzo(*a*)anthracene	0.048	15.00	1.319	1.858	58	62
Benzo(*a*)pyrene	0.040	13.00	1.323	1.816	57	62
Benzo(*b*)fluoranthene	0.049	12.00	1.435	1.973	55	62
Benzo(*g,h,i*)perylene	0.200	5.90	0.891	1.195	36	62
Benzo(*k*)fluoranthene	0.043	25.00	1.681	2.522	59	62
Chrysene	0.038	21.00	1.841	2.693	60	62
Dibenzo(*a,h*)anthracene	0.020	2.90	0.388	0.521	32	62
Fluoranthene	0.110	39.00	3.047	4.444	60	62
Fluorene	0.022	3.30	0.214	0.317	35	62
Indeno(1,2,3-c,d)pyrene	0.093	6.00	0.987	1.293	43	62
Naphthalene	0.018	0.66	0.125	0.149	35	62
Phenanthrene	0.071	36.00	1.838	2.982	61	62
Pyrene	0.082	11.00	2.398	2.945	61	62
Total BAP-TE	0.257	21.31	2.437	3.324	62	62
Total carcinogenic PAH	0.680	77.70	8.973	12.423	62	62
Total PAH	2.292	166.65	18.361	24.819	62	62

[a] Frequency of detection = number detected: number samples.

TABLE 4
Background PAH Concentrations in Urban Surface Soils[a]

Compound	Boston (n = 20)		Providence (n = 20)		Springfield (n = 20)		All cities (n = 60)	
	Arithmetic mean (ppm)	Upper 95% CI (ppm)	Arithmetic mean (ppm)	Upper 95% CI (ppm)	Arithmetic mean (ppm)	Upper 95% CI (ppm)	Arithmetic mean (ppm)	Upper 95% CI (ppm)
Total B(*a*)P-TE	2.4	4.6	2.1	2.9	2.8	4.5	2.4	3.3
Total cPAH	8.4	16.0	7.8	11.0	10.6	18.3	9.0	12.4
Total PAH	18.7	35.9	16.8	23.5	19.1	29.9	18.4	24.8
TPH	474.9	652.6	267.4	338.2	184.4	233.3	306.2	372.8

[a] 0 to 6 in.

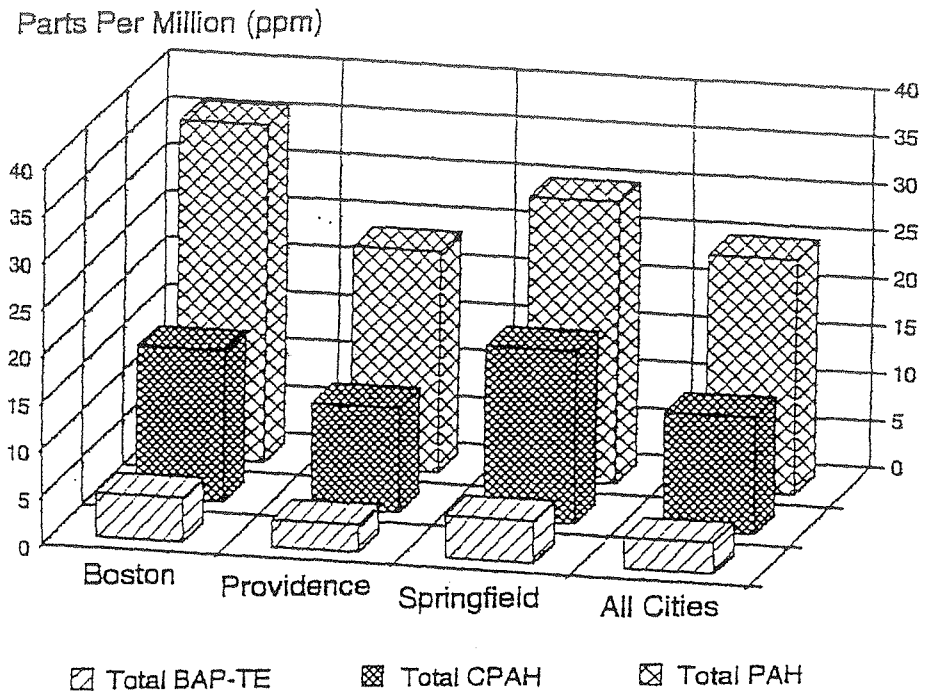

FIGURE 1. Background concentrations of PAH in urban soils. Data presented are the upper 95% confidence interval on the arithmetic mean. Data are presented numerically in Table 4.

proximity to asphalt pavement, based on both written and photographic documentation of sample location. Generally, samples collected within 4 to 6 ft of a road were considered to be near pavement. Of the 60 separate locations, 42 were considered to be near pavement and 18 were not. When tested for equality of variance and means as above, the two populations were determined to be significantly different. The mean total PAH concentration near pavement was 22 ppm compared to 8 ppm not near pavement. These results are shown in Table 6.

Similar analyses were performed to see if TPH or total organic carbon concentrations could be used as surrogates for PAH concentrations. The results showed that there is no correlation between PAH and TPH concentrations, nor between PAH and total organic carbon concentrations (data not shown).

The highest total PAH concentration detected was 166 mg/kg, taken from a street corner in Boston. The next highest PAH concentration was 109 mg/kg, taken at the base of a telephone pole. Four of the 60 samples were taken at the bases of telephone poles, with widely varying results. The total PAH concentrations in the other three locations were 62, 4, and 45 mg/kg.

TABLE 5
Summary Statistics for Metals, TPH, and Soils by City

Compound	Boston (n = 20)		Providence (n = 20)		Springfield (n = 20)		
	Arithmetic mean (mg/kg)	Upper 95% Interval (mg/kg)	Arithmetic mean (mg/kg)	Upper 95% Interval (mg/kg)	Arithmetic mean (mg/kg)	Upper 95% Interval (mg/kg)	Arithmetic mean in U.S. soils[a] (mg/kg)
Arsenic, total	4.20	5.59	3.53	4.27	5.63	9.23	7.4
Barium, total	53.95	66.25	45.29	59.43	45.17	51.03	420
Cadmium, total	1.55	2.79	ND	ND	ND	ND	0.25[b]
Chromium, total	23.00	27.69	12.08	14.35	12.62	14.45	52
Lead, total	398.70	737.44	305.76	462.98	261.69	377.76	17
Mercury, total	0.29	0.39	0.19	0.24	0.20	0.25	0.12
Selenium, total	0.51	0.57	0.39	0.48	0.53	0.55	0.45
Total petroleum hydrocarbons	474.90	652.62	267.43	338.19	184.38	233.27	—
Total solids	90%	93%	93%	95%	90%	92%	—

[a] ATSDR. 1992. *Public Health Assessment Guidance Manual.* PB92-147164. U.S. Department of Health and Human Services.
[b] ATSDR. 1991. *Toxicological Profile for Cadmium.* PB92-147164. Draft. U.S. Department of Health and Human Services.

TABLE 6
Comparison of Background PAH Concentrations in Urban Soils: The Effects of Proximity to Pavement

					Results of statistical analysis					
					Test for homogeneity of variances			Test of equality of means		
	Near pavement		Not near pavement							
Compound	Arithmetic mean (ppm)	Standard deviation	Arithmetic mean (ppm)	Standard deviation	Sample F-statistics	Associated degrees of freedom	Statistically significant at 0.05 level of significance	Sample Student's *t*	Associated degrees of freedom	Statistically significant at 0.05 level of significance
Total B(*a*)P-TE	2.9	4.2	1.1	0.92	21.3	41, 17	Yes	2.69	50	Yes
Total PAH	21.9	30.7	8.3	7.2	18.4	41, 17	Yes	2.69	50	Yes

IV. CONCLUSION

In this study, 20 surface soil samples were collected from each of three New England cities and analyzed for PAH, TPH, and metals. The results of the statistical analyses described in the previous section show that, with respect to PAH, the three datasets are not significantly different and can be considered as one dataset representative of urban environments. The samples were taken in typical urban areas but not near known industrial sites. Therefore, these data are considered to be representative of the generalized effects of urban activities.

It is clear from the results presented here that common regulatory target cleanup levels for cPAH and B(*a*)P-TE (0.1 to 0.66 mg/kg) are much below the background concentrations of these compounds in urban surface soils (upper 95% confidence interval of 3.3 and 12.4 mg/kg for total B(*a*)P-TE and total cPAH, respectively). Figure 2 graphically compares the "bright line" target cleanup level for B(*a*)P of 0.1 mg/kg with the total B(*a*)P-TE (upper 95% confidence interval on the arithmetic mean) measured in urban environments.

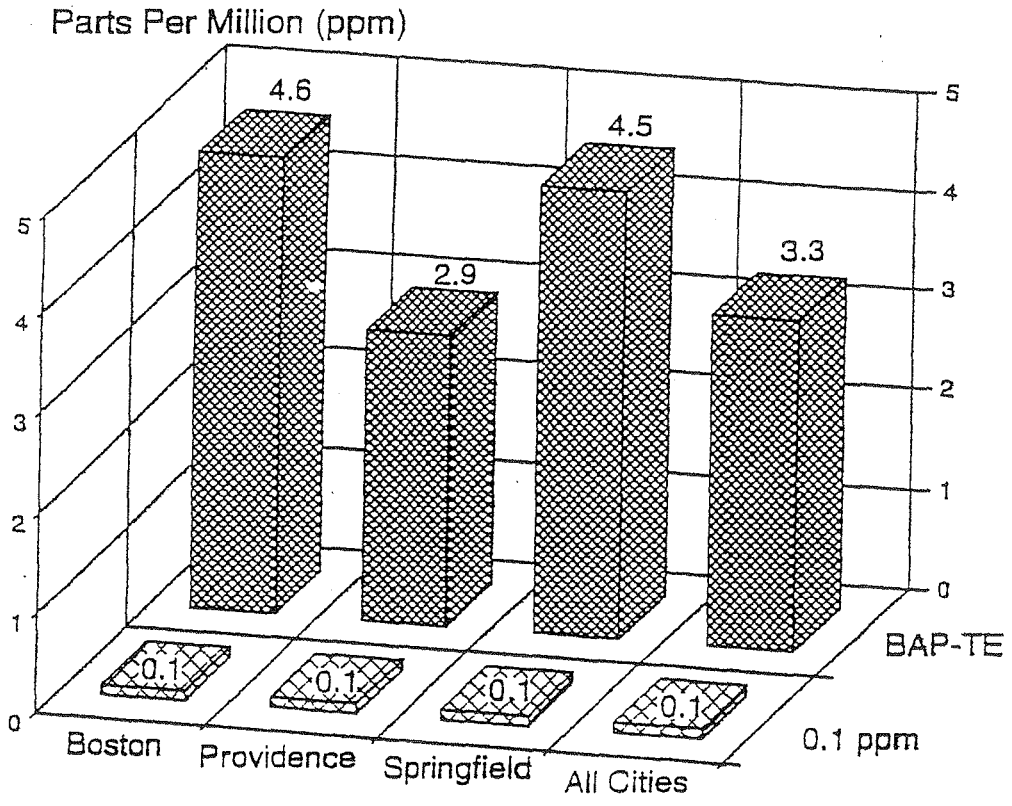

FIGURE 2. Comparison of B(*a*)P-TE with U.S. EPA Region III[4] risk-based concentration for B(*a*)P. B(*a*)P data presented are the upper 95% confidence interval on the arithmetic mean.

APPENDIX E

DATA USABILITY SUMMARY REPORTS

DATA USABILITY SUMMARY REPORT

ZURBRICK ROAD SITE
SITE INVESTIGATION / REMEDIAL PROGRAM
DEPEW, ERIE COUNTY, NEW YORK

Analyses Performed by:

SEVERN TRENT LABORATORIES, INC.

Prepared for:

PANAMERICAN ENVIRONMENTAL, INC.
2390 CLINTON STREET
BUFFALO, NEW YORK 14227

Prepared by:

URS CORPORATION
640 ELLICOTT STREET
BUFFALO, NY 14203

SEPTEMBER 2003

TABLE OF CONTENTS

TABLES
(following text)

ATTACHMENTS

I. INTRODUCTION

This Data Usability Summary Report (DUSR) has been prepared following the guidelines provided in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation *Guidance for the Development of Data Usability Summary Reports*, dated June 1999.

II. ANALYTICAL METHODOLOGIES

The data that was evaluated is from the sampling conducted on June 10 and July 15, 2003 of 19 surface soil/ash samples, 6 groundwater samples, and 5 sediment samples, plus 4 matrix spike/matrix spike duplicate (MS/MSD) pairs. Severn Trent Laboratories, Inc., located in Amherst, New York performed the sample analyses. Table 1 summarizes the samples collected and the requested analytical parameters. It should be noted that Work Plan required equipment rinse blanks to be collected for the ash and groundwater sampling events. The samples were collected using dedicated sampling equipment, therefore equipment rinse blanks were not necessary.

Of the 19 soil/ash samples collected, 10 soil/ash samples were analyzed for Target Compound List (TCL) semivolatile organic compounds (SVOCs) by United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) Statement of Work (SOW) for Organic Analysis, Multi-Media, Multi-Concentration, Document No. OLM04.2, Target Analyte Metals (TAL) (23), and total cyanide by USEPA CLP SOW for Inorganic Analysis, Multi-Media, Multi-Concentration, Document No. ILM05.2; and 9 soil/ash samples were analyzed for Pb by USEPA CLP SOW ILM05.2.

Of the 19 soil/ash samples collected, 4 were analyzed for Toxicity Characteristic Leaching Procedure (TCLP) lead (Pb) by USEPA Methods SW1311 / CLP SOW ILM05.2, in accordance with the Site Investigation / Remedial Program Work Plan (March 2003), which states that if the total Pb result is greater than 1,500 mg/kg, then the laboratory is required to perform TCLP Pb analysis. The affected samples include ZR-SS-08, ZR-SS-12, ZR-TP-03 (4.5-5.5'), and ZR-TP-09 (8').

The groundwater samples were analyzed for total and filtered (dissolved) Pb by USEPA CLP SOW ILM05.2. The sediment samples were analyzed for Pb by USEPA CLP SOW ILM05.2.

The validated analytical results are presented in Attachment A. A limited data validation was performed following the general USEPA Region II guidelines:

- *Contract Laboratory Program (CLP) Organics Data Review (CLP/SOW OLM04.2)*, SOP No. HW-6, Revision #12, March 2001; and
- *Evaluation of Metals Data for the CLP*, SOP No. HW-2, Revision XI, January 1992

Qualifications applied to the data include "J/UJ" (estimated concentration/estimated quantitation limit), and "R" (rejected). A summary of data qualification is presented in Table 2. Support documentation for the qualification of data is presented in Attachment B. Only data requiring qualification for method and/or technical non-conformances are discussed in this report.

III. DATA DELIVERABLE COMPLETENESS

The laboratory deliverable data packages were in accordance with NYSDEC Analytical Services Protocol (ASP) Category B requirements.

IV. CHAIN-OF-CUSTODY DOCUMENTATION / PRESERVATION

The samples were received at the laboratory intact, properly preserved, and under proper chain-of-custody (COC), except for the following instances:

- The laboratory manually edited the soil/ash sample COCs for the requested analytical parameters, after consultation with Panamerican Environmental, Inc.

- The groundwater samples collected for filtered (dissolved) Pb were not field-filtered. Instead, they were filtered upon receipt at the laboratory and then preserved to pH<2 with HNO_3. No data qualification was necessary because the samples arrived at the laboratory on the same day as they were collected.

- The sediment samples arrived at the laboratory at ambient temperature. No data qualification was necessary because the samples arrived at the laboratory on the same day as they were collected. Also, Pb is not expected to significantly degrade at ambient temperature in solid matrices.

V. QUALITY CONTROL DATA

A. Initial and Continuing Calibrations

The percent difference (%D) between the initial calibration (ICAL) average relative response factors (RRF) and continuing calibration (CCAL) RRFs exceeded 25% for several SVOCs. The SVOCs include benzaldehyde, bis(2-chloroethyl ether, 2,2'-oxybis(1-chloropropane), n-nitroso-di-n-propylamine, hexachlorobutadiene, hexachlorocyclopentadiene, 4-nitrphenol, butylbenzyl phthalate, and 3,3'-dichlorobenzidine. The associated soil/ash sample results for these compounds were qualified "J" and "UJ," as listed in Table 2. Support documentation (i.e., Form 5 and 7) is provided in Attachment B.

It should be noted that all NYSDEC ASP contractual calibration criteria were met.

B. Matrix Spike/Matrix Spike Duplicate, Matrix Duplicate, and Matrix Spike Blank Analyses

The TAL metal MS/MSD analyses of ash sample ZR-TP-02 (3.5-5.5') exhibited low recoveries (i.e., <75%) for antimony (Sb), arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), Pb, nickel (Ni), and zinc (Zn), and no recovery for manganese (Mn). The results for all affected metals (except Mn) were qualified "J" and "UJ" in the associated soil/ash samples, as listed in Table 2, while the Mn results were qualified "R" (rejected). Support documentation (i.e., Form 5A) is provided in Attachment B.

The matrix duplicate (MD) analysis of sediment sample ZR-SED-01 exhibited an elevated relative percent difference (RPD) (i.e., >20%) for Pb. The Pb results for all sediment samples were

qualified "J", as listed on Table 2. Support documentation (i.e., Form 6) is provided in Attachment B.

C. Serial Dilutions

The TCLP serial dilution of soil sample ZR-SS-12 exceeded the percent difference (%D) QC limit of 10% for Pb. The TCLP results for Pb that were greater than 10 times the instrument detection limit (IDL) were qualified "J", as listed in Table 2. Support documentation (i.e., Form 9) is provided in Attachment B.

The initial TAL metal serial dilution analysis of ash sample ZR-TP-02 (3.5-5.5') exhibited very high %Ds (i.e., >100%) for aluminum (Al), barium (Ba), calcium (Ca), Cr, cobalt (Co), Cu, magnesium (Mg), Mn, Ni, potassium (K), vanadium (V), and Zn. EPA Region II requires sample data to be rejected for %Ds >100%. Hence, the laboratory was asked to confirm the serial dilution results (see Attachment B – Support Documentation), because it is unusual for so many metals to exhibit such high %Ds. The laboratory believes that this anomaly may have been attributed to a dilution error. The laboratory was directed by URS to re-prepare the serial dilution from the original sample extract, and reanalyze it along with the parent sample.

The serial dilution reanalysis exceeded the 10%D, but <100%D QC limit for Sb, Ni, selenium (Se), and thallium (Tl). The Se and Tl soil/ash sample results greater than 10 times the IDL were qualified "J", as listed in Table 2. Support documentation (i.e., Form 9) is provided in Attachment B. The Sb and Ni results did not require further qualification because they were previously qualified as estimated due to MS/MSD outliers. It should be noted that the reanalysis of ash sample ZR-TP-02 (3.5-5.5') did not include mercury (serial dilution not required for cold vapor technique analyses), and for Fe because it required a separate serial dilution from that referenced above. All other metal results for ash sample ZR-TP-02 (3.5-5.5') were reported from the reanalysis.

The serial dilutions of both the total and filtered portions of groundwater sample ZR-GW-09 exceeded the %D QC limit of 10% for Pb. The associated results that were greater than 10 times the IDL were qualified "J", as listed in Table 2. Support documentation (i.e., Form 9) is provided in Attachment B.

VI. SAMPLE RESULTS

A. Sample Dilutions

The SVOC analyses for ash samples ZR-TP-03 (5.5-9'), ZR-TP-09 (8'), and ZR-TP-07 (7') samples required secondary dilutions for bis(2-ethylhexyl)phthalate. The secondary dilution results were manually transcribed to the initial analysis Form 1s and qualified "D". The secondary dilution results (i.e., Form 1s) were crossed out.

B. Quantitation Limits

The TAL metal CRDL standards associated with the soil/ash samples [except for ash sample ZR-TP-02 (3.5-5.5')] exceeded quality control (QC) limits (i.e., 80-120%) for Sb and Cd. The affected results were qualified "J" and "UJ", as listed in Table 2. Support documentation (i.e., Form 2A and 14) is provided in Attachment B.

The TAL metal CRDL standards associated with the ash sample ZR-TP-02 (3.5-5.5') exceeded quality control (QC) limits (i.e., 80-120%) for K and sodium (Na). The Na result was qualified "J", as listed in Table 2. Support documentation (i.e., Form 2A and 14) is provided in Attachment B. The K result did not require qualification because the sample concentration was greater than the action level (i.e., true value ± 2 times CRDL, which equates to 1,428 mg/kg).

All quantitation limits were reported in accordance with method requirements, and were adjusted for dilution factors. Several organic sample results were qualified "J" by the laboratory indicating estimated concentrations below the quantitation limits.

C. Moisture Content

The percent moistures for soil/ash samples ZR-TP-03 (5.5-9') and ZR-TP-07 (7') were greater than 50% for the SVOC analyses only. The SVOC sample results were qualified "J" and "UJ."

D. Total versus Filtered Analytes

The filtered Pb concentration for groundwater sample ZR-GW-11 (i.e., 2,630 µg/L) was significantly greater (i.e. >50%) than its total concentration (i.e., 1,110 µg/L). In accordance with USEPA Region II data validation guidelines, the total and filtered results were rejected ("R"). Noting the discrepancy between filtered and total concentrations, the laboratory re-digested additional sample aliquots for sample ZR-GW-11. The reanalyses yielded similar results, as noted in the laboratory case narrative. Support documentation is provided in Attachment B.

VII. SUMMARY

All sample analyses were found to be compliant with the method criteria, except where previously noted. Those results qualified "J/UJ"(estimated) are considered conditionally usable, while the results qualified "R" are considered unusable. All other sample results are usable as reported. URS Corporation does not recommend the recollection of any samples at this time.

TABLE 1
SAMPLE AND ANALYSIS SUMMARY
ZURBRICK ROAD SITE - DEPEW, NEW YORK

Sample ID	Date Sampled	TCLP Lead (1311/ILM05.2)[1,2]	TCL SVOCs (OLM04.2)[1]	TAL Metals/Cyanide (ILM05.2)[2]	TOTAL Lead (ILM05.2)[2]	Filtered Lead (ILM05.2)[2]	Comments
Soil/Ash Samples							
ZR-SS-01	6/10/03	---	X	X	---	---	---
ZR-SS-02	6/10/03	---	X	X	---	---	---
ZR-SS-03	6/10/03	---	---	---	X	---	---
ZR-SS-05	6/10/03	---	X	X	---	---	---
ZR-SS-07	6/10/03	---	---	---	X	---	---
ZR-SS-08	6/10/03	X	---	---	X	---	---
ZR-SS-09	6/10/03	---	---	---	X	---	---
ZR-SS-11	6/10/03	---	X	X	---	---	---
ZR-SS-12	6/10/03	X	---	---	X	---	MS/MSD
ZR-TP-01 (4-5')	6/10/03	---	---	---	X	---	---
ZR-TP-02 (3.5-5.5')	6/10/03	---	X	X	---	---	MS/MSD
ZR-TP-03 (4.5-5.5')	6/10/03	X	---	---	X	---	---
ZR-TP-03 (5.5-9')	6/10/03	---	X	X	---	---	---
ZR-TP-05 (8')	6/10/03	---	---	---	X	---	---
ZR-TP-07 (7')	6/10/03	---	X	X	---	---	---
ZR-TP-08 (5')	6/10/03	---	X	X	---	---	---
ZR-TP-09 (8')	6/10/03	X	X	X	---	---	---
ZR-TP-11 (2-4')	6/10/03	---	X	X	---	---	---
ZR-TP-12 (7-7.5')	6/10/03	---	---	---	X	---	---
Groundwater Samples							
ZR-GW-01	6/10/03	---	---	---	X	X	---
ZR-GW-09	6/10/03	---	---	---	X	X	MS/MSD
ZR-GW-11	6/10/03	---	---	---	X	X	---
Sediment Samples							
ZR-SED-01	7/15/03	---	---	---	X	---	MS/MSD
ZR-SED-02	7/15/03	---	---	---	X	---	---
ZR-SED-03	7/15/03	---	---	---	X	---	---
ZR-SED-04	7/15/03	---	---	---	X	---	---
ZR-SED-05	7/15/03	---	---	---	X	---	---

Notes:

[1] - NYSDEC, Analytical Services Protocol (ASP), June 2000 Edition.

[2] - USEPA, Contract Laboratory Program (CLP), Statement of Work for Inorganic Analysis, Multi-Media, Multi-Concentration, Document No. ILM05.2.

TCLP - Toxicity Charateristic Leaching Procedure
TCL - Target Compound List
SVOC - Semivolatile Organic Compounds
TAL - Target Analyte List
X - Analysis performed
--- - Parameter not requested or no comment
MS/MSD - Matrix Spike/Matrix Spike Duplicate

TABLE 2

SUMMARY OF DATA QUALIFICATION

SAMPLE ID	FRACTION	ANALYTICAL DEVIATION	QUALIFICATION
ZR-SS-01, ZR-SS-02, ZR-SS-05, ZR-SS-11, ZR-TP-03 (5.5-9'), ZR-TP-07 (7'), ZR-TP-08 (5'), ZR-TP-09 (8'), ZR-TP-11 (2-4')	TAL Metals	CRDL standard recovery outside 80-120% control limit for Sb	Qualify detects "J" and non-detects "UJ"
ZR-TP-02 (3.5-5.5')	TAL Metals	CRDL standard recovery outside 80-120% control limit for Na	Qualify detects "J" and non-detects "UJ"
ZR-SS-11, ZR-TP-07 (7')	TAL Metals	CRDL standard recovery outside 80-120% control limit for Cd	Qualify detects "J"
ZR-SS-01, ZR-SS-02, ZR-SS-05, ZR-SS-11, ZR-TP-02 (3.5-5.5'), ZR-TP-03 (5.5-9'), ZR-TP-07 (7'), ZR-TP-08 (5'), ZR-TP-09 (8'), ZR-TP-11 (2-4')	TAL Metals	MS/MSD percent recoveries less than 75% for Sb, As, Cd, Cr, Cu, Pb, Ni, Zn, and 0% for Mn	Qualify detects "J" and non-detects "UJ" for all metas except Mn, qualify Mn results "R"
ZR-SS-03, ZR-SS-07, ZR-SS-08, ZR-SS-09, ZR-SS-12, ZR-TP-01 (4-5'), ZR-TP-03 (4.5-5.5'), ZR-TP-05 (8"), ZR-TP-12 (7-7.5')	Lead only	MS/MSD percent recoveries less than 75% for Pb	Qualify detects "J"
ZR-TP-02 (3.5-5.5'), ZR-TP-03 (5.5-9'), ZR-TP-09 (8')	TAL Metals	Serial dilution exceeded 10%D for Se	Qualify detects >10 times IDL "J"
ZR-TP-02 (3.5-5.5')	TAL Metals	Serial dilution exceeded 10%D for Tl	Qualify detects >10 times IDL "J"
ZR-SS-08, ZR-SS-12, ZR-TP-03 (4.5-5.5'), ZR-TP-09 (8')	TCLP Lead	Serial dilution exceeded 10%D	Qualify detects >10 times IDL "J"
ZR-GW-01, ZR-GW-09	Total/Filtered Lead	Serial dilution exceeded 10%D	Qualify detects >10 times IDL "J"
ZR-GW-11	Total/Filtered Lead	Filtered concentration greater than 150% of total concentration	Qualify results "R"
ZR-SED-01, ZR-SED-02, ZR-SED-03, ZR-SED-04, ZR-SED-05	Lead	Matrix duplicate RPD greater than 20%	Qualify detects "J"
ZR-SS-01, ZR-SS-02, ZR-SS-05, ZR-SS-11, ZR-TP-02 (3.5-5.5'), ZR-TP-08 (5'), ZR-TP-09 (8')	SVOCs	CCAL %D greater than 25% for bis(2-chloroethyl ether, 2,2'-oxybis(1-chloropropane), n-nitroso-di-n-propylamine, hexachlorobutadiene, hexachlorocyclopentadiene, 4-nitrophenol, butylbenzyl phthalate, and 3,3'-dichlorobenzidine	Qualify detects "J" and non-detects "UJ"
ZR-TP-11 (2-4')	SVOCs	CCAL %D greater than 25% for benzaldehyde	Qualify non-detect "UJ"
ZR-TP-03 (5.5-9') and ZR-TP-07 (7')	SVOCs	Percent moisture greater than 50%	Qualify detects "J" and non-detects "UJ"

ATTACHMENT A
VALIDATED ANALYTICAL RESULTS
(FORM 1s)

DEFINITION OF VALIDATION QUALIFIERS

The following are definitions of the validation qualifiers assigned to results during the data review process.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

D - The sample results were reported from a secondary dilution.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet QC criteria.

STL BUFFALO

PANAMERICAN ENVIRONMENTAL

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-SS-08

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: A03-6226

Matrix (soil/water): WATER Lab Sample ID: AD331367

Level (low/med): LOW Date Received: 6/10/03

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7439-92-1	Lead	136000		E	P	J

2/24/03

Color Before: GRAY Clarity Before: CLOUDY Texture: NONE

Color After: GRAY Clarity After: CLEAR Artifacts:

Comments: TCLP

STL BUFFALO

PANAMERICAN ENVIRONMENTAL

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-SS-12

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: A03-6226

Matrix (soil/water): WATER Lab Sample ID: AD331368

Level (low/med): LOW Date Received: 6/10/03

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7439-92-1	Lead	75700		E	P	J

7/24/03

Color Before: GRAY Clarity Before: CLOUDY Texture: NONE

Color After: GRAY Clarity After: CLEAR Artifacts:

Comments: TCLP

STL BUFFALO

PANAMERICAN ENVIRONMENTAL

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-TP-03 (4.5-5.5')

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: A03-6226

Matrix (soil/water): WATER Lab Sample ID: AD331366

Level (low/med): LOW Date Received: 6/10/03

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	469000		E	P

J

7/24/03

Color Before: GRAY Clarity Before: CLOUDY Texture: NONE

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments: TCLP

STL BUFFALO

PANAMERICAN ENVIRONMENTAL

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-TP-09 (8')

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: A03-6226

Matrix (soil/water): WATER Lab Sample ID: AD331365

Level (low/med): LOW Date Received: 6/10/03

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	20200		E	P

J

7/14/03

Color Before: GRAY Clarity Before: CLOUDY Texture: NONE

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments: TCLP

PANAMERICAN ENVIRONMENTAL INC.

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.: ZR-SS-01

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: 5603

Matrix (soil/water): SOIL Lab Sample ID: AD327989

Level (low/med): LOW Date Received: 6/10/03

% Solids: 81

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	7130			P	
7440-36-0	Antimony	7.4	U	N	P	UJ
7440-38-2	Arsenic	5.1		N*	P	J
7440-39-3	Barium	54.3		*	P	
7440-41-7	Beryllium	0.37	B		P	
7440-43-9	Cadmium	0.62	U	N	P	UJ
7440-70-2	Calcium	15700			P	
7440-47-3	Chromium	13.1		N*	P	J
7440-48-4	Cobalt	7.5			P	
7440-50-8	Copper	25.4		N	P	J
7439-89-6	Iron	16500		*	P	
7439-92-1	Lead	69.2		N	P	J
7439-95-4	Magnesium	5400			P	
7439-96-5	Manganese	408		N*	P	~~J~~ R
7440-02-0	Nickel	22.3		N*	P	J
7440-09-7	Potassium	1040		*	P	
7782-49-2	Selenium	1.6	B		P	
7439-97-6	Mercury	0.030	B		CV	
7440-22-4	Silver	1.2	U		P	
7440-23-5	Sodium	57.8	B	*	P	
7440-28-0	Thallium	1.2	U	*	P	
7440-62-2	Vanadium	14.5			P	
7440-66-6	Zinc	87.0		N*	P	J

9/11/03

Color Before: BLACK Clarity Before: N/A Texture: SILT

Color After: GREEN Clarity After: CLDY/FI Artifacts:

Comments:

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PANAMERICAN ENVIRONMENTAL INC.

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-SS-02

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: 5603

Matrix (soil/water): SOIL Lab Sample ID: AD327985

Level (low/med): LOW Date Received: 6/10/03

% Solids: 77

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	9040			P	
7440-36-0	Antimony	7.9	U	N	P	UJ
7440-38-2	Arsenic	6.3		N*	P	J
7440-39-3	Barium	72.8		*	P	
7440-41-7	Beryllium	0.47	B		P	
7440-43-9	Cadmium	0.66	U	N	P	UJ
7440-70-2	Calcium	17200			P	
7440-47-3	Chromium	13.8		N*	P	J
7440-48-4	Cobalt	9.3			P	
7440-50-8	Copper	28.3		N	P	J
7439-89-6	Iron	20200		*	P	
7439-92-1	Lead	47.4		N	P	J
7439-95-4	Magnesium	6140			P	
7439-96-5	Manganese	566		N*	P	~~J~~ R
7440-02-0	Nickel	27.2		N*	P	J
7440-09-7	Potassium	1270		*	P	
7782-49-2	Selenium	2.0	B		P	
7439-97-6	Mercury	0.040			CV	
7440-22-4	Silver	1.3	U		P	
7440-23-5	Sodium	42.5	B	*	P	
7440-28-0	Thallium	1.3	U	*	P	
7440-62-2	Vanadium	17.3			P	
7440-66-6	Zinc	97.5		N*	P	J

9/11/03

Color Before: BLACK Clarity Before: N/A Texture: SILT

Color After: GRAY Clarity After: CLDY/FI Artifacts:

Comments:

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-SS-03

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: 5603

Matrix (soil/water): SOIL Lab Sample ID: AD328000

Level (low/med): LOW Date Received: 6/10/03

% Solids: 87

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7439-92-1	Lead	17.5		N	P	J

9/11/03

Color Before: BROWN Clarity Before: N/A Texture: CLAY

Color After: GRAY Clarity After: CLDY/FI Artifacts:

Comments:

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-SS-05

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: 5603

Matrix (soil/water): SOIL Lab Sample ID: AD327987

Level (low/med): LOW Date Received: 6/10/03

% Solids: 83

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	7110			P	
7440-36-0	Antimony	7.3	U	N	P	UJ
7440-38-2	Arsenic	4.3		N*	P	J
7440-39-3	Barium	77.1		*	P	
7440-41-7	Beryllium	0.39	B		P	
7440-43-9	Cadmium	3.3		N	P	J
7440-70-2	Calcium	8710			P	
7440-47-3	Chromium	10.7		N*	P	J
7440-48-4	Cobalt	7.7			P	
7440-50-8	Copper	23.2		N	P	J
7439-89-6	Iron	21400		*	P	
7439-92-1	Lead	117		N	P	J
7439-95-4	Magnesium	4110			P	
7439-96-5	Manganese	365		N*	P	~~J~~ R
7440-02-0	Nickel	21.6		N*	P	J
7440-09-7	Potassium	964		*	P	
7782-49-2	Selenium	1.7	B		P	
7439-97-6	Mercury	0.226			CV	
7440-22-4	Silver	0.13	B		P	
7440-23-5	Sodium	110	B	*	P	
7440-28-0	Thallium	1.2	U	*	P	
7440-62-2	Vanadium	14.8			P	
7440-66-6	Zinc	1100		N*	P	J

9/11/03 e

Color Before: BROWN Clarity Before: N/A Texture: SILT

Color After: GRAY Clarity After: CLDY/FI Artifacts:

Comments:

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-SS-07

Contract: NY02-457

Lab Code: STLBFLO Case No.: _____ SAS No.: _____ SDG NO.: 5603

Matrix (soil/water): SOIL Lab Sample ID: AD328001

Level (low/med): LOW Date Received: 6/10/03

% Solids: 86

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7439-92-1	Lead	14.9		N	P	J

9/11/13

Color Before: BROWN Clarity Before: N/A Texture: CLAY

Color After: GRAY Clarity After: CLDY/FI Artifacts: _____

Comments: _____

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-SS-08

Contract: NY02-457

Lab Code: STLBFLO Case No.: _____ SAS No.: _____ SDG NO.: 5603

Matrix (soil/water): SOIL Lab Sample ID: AD327998

Level (low/med): LOW Date Received: 6/10/03

% Solids: 80

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7439-92-1	Lead	2520		N	P	J

9/11/03

Color Before: BROWN Clarity Before: N/A Texture: SILT

Color After: GRAY Clarity After: CLDY/FI Artifacts: _____

Comments: _____

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-SS-09

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: 5603

Matrix (soil/water): SOIL Lab Sample ID: AD327996

Level (low/med): LOW Date Received: 6/10/03

% Solids: 85

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7439-92-1	Lead	97.5		N	P	J

9/11/12

Color Before: BROWN Clarity Before: N/A Texture: SILT

Color After: GRAY Clarity After: CLDY/FI Artifacts:

Comments:

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-SS-11

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: 5603

Matrix (soil/water): SOIL Lab Sample ID: AD327995

Level (low/med): LOW Date Received: 6/10/03

% Solids: 81

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5260			P	
7440-36-0	Antimony	7.3	U	N	P	UJ
7440-38-2	Arsenic	4.8		N*	P	J
7440-39-3	Barium	49.4		*	P	
7440-41-7	Beryllium	0.29	B		P	
7440-43-9	Cadmium	0.10	B	N	P	J
7440-70-2	Calcium	11500			P	
7440-47-3	Chromium	13.3		N*	P	J
7440-48-4	Cobalt	6.0	B		P	
7440-50-8	Copper	28.0		N	P	J
7439-89-6	Iron	14500		*	P	
7439-92-1	Lead	83.3		N	P	J
7439-95-4	Magnesium	3910			P	
7439-96-5	Manganese	258		N*	P	~~J~~ R
7440-02-0	Nickel	18.1		N*	P	J
7440-09-7	Potassium	843		*	P	
7782-49-2	Selenium	1.7	B		P	
7439-97-6	Mercury	0.111			CV	
7440-22-4	Silver	0.40	B		P	
7440-23-5	Sodium	47.4	B	*	P	
7440-28-0	Thallium	1.2	U	*	P	
7440-62-2	Vanadium	11.8			P	
7440-66-6	Zinc	107		N*	P	J

9/11/03

Color Before: BLACK Clarity Before: N/A Texture: SILT

Color After: GRAY Clarity After: CLDY/FI Artifacts:

Comments:

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-SS-12

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: 5603

Matrix (soil/water): SOIL Lab Sample ID: AD327999

Level (low/med): LOW Date Received: 6/10/03

% Solids: 80

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7439-92-1	Lead	4210		N	P	J

6/11/03

Color Before: BROWN Clarity Before: N/A Texture: SILT

Color After: GRAY Clarity After: CLDY/FI Artifacts:

Comments:

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-TP-01 (4-5')

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: 5603

Matrix (soil/water): SOIL Lab Sample ID: AD327988

Level (low/med): LOW Date Received: 6/10/03

% Solids: 79

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7439-92-1	Lead	178		N	P	J

9/11/03

Color Before: BROWN Clarity Before: N/A Texture: SILT

Color After: GRAY Clarity After: CLDY/FI Artifacts:

Comments:

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-TP-02 (3.5-5.5')

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: 5603

Matrix (soil/water): SOIL Lab Sample ID: AD327980

Level (low/med): LOW Date Received: 6/10/03

% Solids: 77

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5840			P	
7440-36-0	Antimony	5.2	B	N	P	J
7440-38-2	Arsenic	87.5		N*	P	J
7440-39-3	Barium	100			P	
7440-41-7	Beryllium	0.23	B		P	
7440-43-9	Cadmium	0.65	U	N	P	UJ
7440-70-2	Calcium	2150			P	
7440-47-3	Chromium	36.7		N*	P	J
7440-48-4	Cobalt	14.3			P	
7440-50-8	Copper	48.1		N	P	J
7439-92-1	Lead	77.6		N	P	J
7439-95-4	Magnesium	1450			P	
7439-96-5	Manganese	227		N*	P	~~J~~ R
7440-02-0	Nickel	45.4		N*	P	J
7440-09-7	Potassium	1570		*	P	
7782-49-2	Selenium	7.6			P	J
7440-22-4	Silver	0.18	B		P	
7440-23-5	Sodium	239	B	*	P	J
7440-28-0	Thallium	14.2		*	P	J
7440-62-2	Vanadium	13.2			P	
7440-66-6	Zinc	132		N*	P	J

9/11/03

Color Before: BROWN Clarity Before: N/A Texture: SILT

Color After: BROWN Clarity After: CLDY/FI Artifacts:

Comments:

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-TP-02 (3.5-5.5')

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: 5603

Matrix (soil/water): SOIL Lab Sample ID: AD327980

Level (low/med): LOW Date Received: 6/10/03

% Solids: 77

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3780			P
7440-36-0	Antimony	2.2	B	N	P
7440-38-2	Arsenic	89.1		N*	P
7440-39-3	Barium	89.1		*	P
7440-41-7	Beryllium	0.20	B		P
7440-43-9	Cadmium	0.65	U	N	P
7440-70-2	Calcium	1780			P
7440-47-3	Chromium	35.9		N*	P
7440-48-4	Cobalt	14.2			P
7440-50-8	Copper	47.1		N	P
7439-89-6	Iron	123000		*	P
7439-92-1	Lead	77.7		N	P
7439-95-4	Magnesium	1280			P
7439-96-5	Manganese	225		N*	P
7440-02-0	Nickel	45.4		N*	P
7440-09-7	Potassium	997		*	P
7782-49-2	Selenium	9.9			P
7440-22-4	Silver	0.45	B		P
7439-97-6	Mercury	0.127			CV
7440-23-5	Sodium	649	U	*	P
7440-28-0	Thallium	1.3	U	*	P
7440-62-2	Vanadium	9.4			P
7440-66-6	Zinc	136		N*	P

6/11/03

Color Before: BROWN Clarity Before: N/A Texture: SILT

Color After: BROWN Clarity After: CLDY/FI Artifacts:

Comments:

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-TP-03 (4.5-5.5')

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: 5603

Matrix (soil/water): SOIL Lab Sample ID: AD327997

Level (low/med): LOW Date Received: 6/10/03

Solids: 61

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7439-92-1	Lead	13600		N	P	J

4/11/03

Color Before: BROWN Clarity Before: N/A Texture: PEAT

Color After: GRAY Clarity After: CLDY/FI Artifacts:

Comments:

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-TP-03 (5.5-9')

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: 5603

Matrix (soil/water): SOIL Lab Sample ID: AD327986

Level (low/med): LOW Date Received: 6/10/03

% Solids: 51

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5830			P	
7440-36-0	Antimony	4.2	B	N	P	J
7440-38-2	Arsenic	11.6		N*	P	J
7440-39-3	Barium	341		*	P	
7440-41-7	Beryllium	0.23	B		P	
7440-43-9	Cadmium	1.0	U	N	P	UJ
7440-70-2	Calcium	35600			P	
7440-47-3	Chromium	61.4		N*	P	J
7440-48-4	Cobalt	14.9			P	
7440-50-8	Copper	137		N	P	J
7439-89-6	Iron	72000		*	P	
7439-92-1	Lead	975		N	P	J
7439-95-4	Magnesium	4800			P	
7439-96-5	Manganese	826		N*	P	~~J~~ R
7440-02-0	Nickel	28.3		N*	P	J
7440-09-7	Potassium	894	B	*	P	
7782-49-2	Selenium	5.3	B		P	J
7439-97-6	Mercury	3.8			CV	
7440-22-4	Silver	6.4			P	
7440-23-5	Sodium	314	B	*	P	
7440-28-0	Thallium	2.0	U	*	P	
7440-62-2	Vanadium	9.9	B		P	
7440-66-6	Zinc	955		N*	P	J

9/11/03

Color Before: GRAY Clarity Before: N/A Texture: SILT

Color After: GRAY Clarity After: CLDY/FI Artifacts:

Comments:

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-TP-05 (8')

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: 5603

Matrix (soil/water): SOIL Lab Sample ID: AD327991

Level (low/med): LOW Date Received: 6/10/03

% Solids: 77

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7439-92-1	Lead	12.4		N	P	J

9/11/03

Color Before: GRAY Clarity Before: N/A Texture: CLAY

Color After: GRAY Clarity After: CLDY/FI Artifacts:

Comments:

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-TP-07 (7')

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: 5603

Matrix (soil/water): SOIL Lab Sample ID: AD327994

Level (low/med): LOW Date Received: 6/10/03

% Solids: 50

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	4410			P	
7440-36-0	Antimony	2.3	B	N	P	J
7440-38-2	Arsenic	5.5		N*	P	J
7440-39-3	Barium	125		*	P	
7440-41-7	Beryllium	0.27	B		P	
7440-43-9	Cadmium	1.3		N	P	J
7440-70-2	Calcium	69600			P	
7440-47-3	Chromium	22.2		N*	P	J
7440-48-4	Cobalt	3.9	B		P	
7440-50-8	Copper	158		N	P	J
7439-89-6	Iron	18300		*	P	
7439-92-1	Lead	662		N	P	J
7439-95-4	Magnesium	5470			P	
7439-96-5	Manganese	341		N*	P	J R
7440-02-0	Nickel	27.0		N*	P	J
7440-09-7	Potassium	812	B	*	P	
7782-49-2	Selenium	1.8	B		P	
7439-97-6	Mercury	0.304			CV	
7440-22-4	Silver	0.52	B		P	
7440-23-5	Sodium	95.6	B	*	P	
7440-28-0	Thallium	2.0	U	*	P	
7440-62-2	Vanadium	11.2			P	
7440-66-6	Zinc	551		N*	P	J

9/11/03

Color Before: BLACK Clarity Before: N/A Texture: SILT

Color After: GRAY Clarity After: CLDY/FI Artifacts:

Comments:

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-TP-08 (5')

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: 5603

Matrix (soil/water): SOIL Lab Sample ID: AD327993

Level (low/med): LOW Date Received: 6/10/03

% Solids: 68

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5930			P	
7440-36-0	Antimony	5.0	B	N	P	J
7440-38-2	Arsenic	1.9		N*	P	J
7440-39-3	Barium	80.3		*	P	
7440-41-7	Beryllium	0.42	B		P	
7440-43-9	Cadmium	0.74	U	N	P	UJ
7440-70-2	Calcium	183000			P	
7440-47-3	Chromium	6.8		N*	P	J
7440-48-4	Cobalt	2.8	B		P	
7440-50-8	Copper	185		N	P	J
7439-89-6	Iron	8770		*	P	
7439-92-1	Lead	7.6		N	P	J
7439-95-4	Magnesium	15900			P	
7439-96-5	Manganese	372		N*	P	J
7440-02-0	Nickel	6.3		N*	P	J
7440-09-7	Potassium	625	B	*	P	
7782-49-2	Selenium	5.2	U		P	
7439-97-6	Mercury	0.039	U		CV	
7440-22-4	Silver	1.5	U		P	
7440-23-5	Sodium	262	B	*	P	
7440-28-0	Thallium	1.5	U	*	P	
7440-62-2	Vanadium	9.2			P	
7440-66-6	Zinc	173		N*	P	J

q/ulz

Color Before: MIX Clarity Before: N/A Texture: CLAY

Color After: GRAY Clarity After: CLDY/FI Artifacts:

Comments:

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-TP-09 (8')

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: 5603

Matrix (soil/water): SOIL Lab Sample ID: AD327990

Level (low/med): LOW Date Received: 6/10/03

% Solids: 62

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	4800			P	
7440-36-0	Antimony	17.3		N	P	J
7440-38-2	Arsenic	30.2		N*	P	J
7440-39-3	Barium	284		*	P	
7440-41-7	Beryllium	0.23	B		P	
7440-43-9	Cadmium	0.81	U	N	P	UJ
7440-70-2	Calcium	22800			P	
7440-47-3	Chromium	52.8		N*	P	J
7440-48-4	Cobalt	26.7			P	
7440-50-8	Copper	334		N	P	J
7439-89-6	Iron	237000		*	P	
7439-92-1	Lead	3510		N	P	J
7439-95-4	Magnesium	1940			P	
7439-96-5	Manganese	1070		N*	P	~~J~~ R
7440-02-0	Nickel	88.9		N*	P	J
7440-09-7	Potassium	394	B	*	P	
7782-49-2	Selenium	13.2			P	J
7439-97-6	Mercury	0.567			CV	
7440-22-4	Silver	0.87	B		P	
7440-23-5	Sodium	294	B	*	P	
7440-28-0	Thallium	1.6	U	*	P	
7440-62-2	Vanadium	6.9	B		P	
7440-66-6	Zinc	789		N*	P	J 9/11/03

Color Before: BLACK Clarity Before: N/A Texture: SILT

Color After: GRAY Clarity After: CLDY/FI Artifacts:

Comments:

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-TP-11 (2-4')

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: 5603

Matrix (soil/water): SOIL Lab Sample ID: AD327992

Level (low/med): LOW Date Received: 6/10/03

% Solids: 86

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5150			P	
7440-36-0	Antimony	7.0	U	N	P	UJ
7440-38-2	Arsenic	4.4		N*	P	J
7440-39-3	Barium	80.3		*	P	
7440-41-7	Beryllium	0.28	B		P	
7440-43-9	Cadmium	0.58	U	N	P	UJ
7440-70-2	Calcium	12100			P	
7440-47-3	Chromium	12.0		N*	P	J
7440-48-4	Cobalt	5.6	B		P	
7440-50-8	Copper	26.5		N	P	J
7439-89-6	Iron	13900		*	P	
7439-92-1	Lead	125		N	P	J
7439-95-4	Magnesium	3790			P	
7439-96-5	Manganese	244		N*	P	J/R
7440-02-0	Nickel	17.8		N*	P	J
7440-09-7	Potassium	743		*	P	
7782-49-2	Selenium	1.1	B		P	
7439-97-6	Mercury	0.090			CV	
7440-22-4	Silver	0.36	B		P	
7440-23-5	Sodium	48.3	B	*	P	
7440-28-0	Thallium	1.2	U	*	P	
7440-62-2	Vanadium	11.0			P	
7440-66-6	Zinc	132		N*	P	J

q/uals

Color Before: BROWN Clarity Before: N/A Texture: SILT

Color After: GRAY Clarity After: CLDY/FI Artifacts:

Comments:

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

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INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-TP-12 (7-7.5')

Contract: NY02-457

Lab Code: STLBFLO Case No.: _____ SAS No.: _____ SDG NO.: 5603

Matrix (soil/water): SOIL Lab Sample ID: AD327984

Level (low/med): LOW Date Received: 6/10/03

Solids: 81

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7439-92-1	Lead	14.2		N	P	J

9/11/03

Color Before: BROWN Clarity Before: N/A Texture: SILT

Color After: GRAY Clarity After: CLDY/FI Artifacts: _____

Comments: _____

Panamerican Environmental Inc.
Panamerican Environmental, Inc.
Wet Chemistry Analysis

Client Sample No.
ZR-TP-02 (3.5-5.5')

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: 5603

Matrix (soil/water): SOIL Lab Sample ID: A3560301

Solids: 78.0 Date Samp/Recv: 06/10/2003 06/10/2003

Parameter Name	Units of Measure	Result	C	Q	M	Method Number	Analyzed Date
Cyanide - Total	MG/KG	1.0	U			CLP-WC	06/13/2003

Comments:

Panamerican Environmental Inc.
Panamerican Environmental, Inc.
Wet Chemistry Analysis

Client Sample No.: ZR-SS-02

ab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: 5603

atrix (soil/water): SOIL Lab Sample ID: A3560303

% Solids: 77.2 Date Samp/Recv: 06/10/2003 06/10/2003

Parameter Name	Units of Measure	Result	C	Q	M	Method Number	Analyzed Date
Cyanide - Total	MG/KG	1.2	U			CLP-WC	06/13/2003

Comments:

Panamerican Environmental Inc.
Panamerican Environmental, Inc.
Wet Chemistry Analysis

Client Sample No.

ZR-TP-03 (5.5-9')

ab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: 5603

.atrix (soil/water): SOIL Lab Sample ID: A3560304

Solids: 0.0 Date Samp/Recv: 06/10/2003 06/10/2003

Parameter Name	Units of Measure	Result	C	Q	M	Method Number	Analyzed Date
Cyanide - Total	MG/KG	0.95	U			CLP-WC	06/13/2003

Comments:

Panamerican Environmental Inc.
Panamerican Environmental, Inc.
Wet Chemistry Analysis

Client Sample No.

ZR-SS-05

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: 5603

Matrix (soil/water): SOIL Lab Sample ID: A3560305

% Solids: 83.5 Date Samp/Recv: 06/10/2003 06/10/2003

Parameter Name	Units of Measure	Result	C	Q	M	Method Number	Analyzed Date
Cyanide - Total	MG/KG	1.1	U			CLP-WC	06/13/2003

Comments:

Panamerican Environmental Inc.
Panamerican Environmental, Inc.
Wet Chemistry Analysis

Client Sample No.: ZR-SS-01

ab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: S603

..atrix (soil/water): SOIL Lab Sample ID: A3560307

Solids: 81.2 Date Samp/Recv: 06/10/2003 06/10/2003

Parameter Name	Units of Measure	Result	C	Q	M	Method Number	Analyzed Date
Cyanide - Total	MG/KG	1.2	U			CLP-WC	06/13/2003

Comments:

Panamerican Environmental Inc.
Panamerican Environmental, Inc.
Wet Chemistry Analysis

Client Sample No.: ZR-TP-09 (8')

ab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: 5603

atrix (soil/water): SOIL Lab Sample ID: A3560308

% Solids: 50.5 Date Samp/Recv: 06/10/2003 06/10/2003

Parameter Name	Units of Measure	Result	C	Q	M	Method Number	Analyzed Date
Cyanide - Total	MG/KG	1.9	U			CLP-WC	06/13/2003

Comments:

_____

_____

_____

_____

Panamerican Environmental Inc.
Panamerican Environmental, Inc.
Wet Chemistry Analysis

Client Sample No.

ZR-TP-11 (2-4')

ab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: 5603

atrix (soil/water): SOIL Lab Sample ID: A3560310

% Solids: 85.0 Date Samp/Recv: 06/10/2003 06/10/2003

Parameter Name	Units of Measure	Result	C	Q	M	Method Number	Analyzed Date
Cyanide - Total	MG/KG	1.1	U			CLP-WC	06/13/2003

Comments:

_____

_____

_____

_____

Panamerican Environmental Inc.
Panamerican Environmental, Inc.
Wet Chemistry Analysis

Client Sample No.: ZR-TP-08 (5')

Lab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: 5603

Matrix (soil/water): SOIL Lab Sample ID: A3560311

% Solids: 65.1 Date Samp/Recv: 06/10/2003 06/10/2003

Parameter Name	Units of Measure	Result	C	Q	M	Method Number	Analyzed Date
Cyanide - Total	MG/KG	1.5	U			CLP-WC	06/13/2003

Comments:

Panamerican Environmental Inc.
Panamerican Environmental, Inc.
Wet Chemistry Analysis

Client Sample No.: ZR-TP-07 (7')

ab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: 5603

atrix (soil/water): SOIL Lab Sample ID: A3560312

% Solids: 51.0 Date Samp/Recv: 06/10/2003 06/10/2003

Parameter Name	Units of Measure	Result	C	Q	M	Method Number	Analyzed Date
Cyanide - Total	MG/KG	1.9	U			CLP-WC	06/13/2003

Comments:

Panamerican Environmental Inc.
Panamerican Environmental, Inc.
Wet Chemistry Analysis

Client Sample No.: ZR-SS-11

ab Name: STL Buffalo Contract: _____

Lab Code: RECNY Case No.: _____ SAS No.: _____ SDG No.: 5603

atrix (soil/water): SOIL Lab Sample ID: A3560313

% Solids: 80.6 Date Samp/Recv: 06/10/2003 06/10/2003

Parameter Name	Units of Measure	Result	C	Q	M	Method Number	Analyzed Date
Cyanide - Total	MG/KG	0.86	U			CLP-WC	06/13/2003

Comments:

LABORATORY TEST RESULTS

Job Number: 203900

Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-TP-02 (3.5-5.5')
Date Sampled.....: 06/10/2003
Time Sampled.....: 09:30
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-1
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
ASTM D-2216												
	% Solids, Solid	71.7			0.10	0.10	1	%	18321		06/13/03 0000	mmw
	% Moisture, Solid	28.3			0.10	0.10	1	%	18321		06/13/03 0000	mmw
OLM04.2	CLP BNA Extractable Organics											
	Phenol, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Bis(2-chloroethyl)ether, Solid*	ND	U	UJ	46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	2-Chlorophenol, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	2-Methylphenol, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	2,2-oxybis (1-chloropropane), Solid*	ND	U	UJ	46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	4-Methylphenol, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	n-Nitroso-di-n-propylamine, Solid*	ND	U	UJ	46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Hexachloroethane, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Nitrobenzene, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Isophorone, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	2-Nitrophenol, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	2,4-Dimethylphenol, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Bis(2-chloroethoxy)methane, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	2,4-Dichlorophenol, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Naphthalene, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	4-Chloroaniline, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Hexachlorobutadiene, Solid*	ND	U	UJ	46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	4-Chloro-3-methylphenol, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	2-Methylnaphthalene, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Hexachlorocyclopentadiene, Solid*	ND	U	UJ	46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	2,4,6-Trichlorophenol, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	2,4,5-Trichlorophenol, Solid*	ND	U		120	1200	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	2-Chloronaphthalene, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	2-Nitroaniline, Solid*	ND	U		120	1200	1.00000	ug/Kg	18721		06/17/03 1306	jdw

* In Description = Dry Wgt.

8/20/03

564/1539

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-TP-02 (3.5-5.5')
Date Sampled.....: 06/10/2003
Time Sampled.....: 09:30
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-1
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Dimethyl phthalate, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Acenaphthylene, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	2,6-Dinitrotoluene, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	3-Nitroaniline, Solid*	ND	U		120	1200	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Acenaphthene, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	2,4-Dinitrophenol, Solid*	ND	U		120	1200	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	4-Nitrophenol, Solid*	ND	U	UJ	120	1200	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Dibenzofuran, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	2,4-Dinitrotoluene, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Diethyl phthalate, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	4-Chlorophenyl phenyl ether, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Fluorene, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	4-Nitroaniline, Solid*	ND	U		120	1200	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	4,6-Dinitro-2-methylphenol, Solid*	ND	U		120	1200	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	n-Nitrosodiphenylamine, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	4-Bromophenyl phenyl ether, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Hexachlorobenzene, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Pentachlorophenol, Solid*	ND	U		120	1200	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Phenanthrene, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Anthracene, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Carbazole, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Di-n-butyl phthalate, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Fluoranthene, Solid*	250	J		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Pyrene, Solid*	190	J		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Butyl benzyl phthalate, Solid*	ND	U	UJ	46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	3,3-Dichlorobenzidine, Solid*	ND	U	UJ	46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Benzo(a)anthracene, Solid*	110	J		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Chrysene, Solid*	120	J		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Bis(2-ethylhexyl)phthalate, Solid*	630		M	46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw

* In Description = Dry Wgt.

8/28/03

565/1539

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-TP-02 (3.5-5.5')
Date Sampled.....: 06/10/2003
Time Sampled.....: 09:30
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-1
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Di-n-octyl phthalate, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Benzo(b)fluoranthene, Solid*	140	J		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Benzo(k)fluoranthene, Solid*	100	J		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Benzo(a)pyrene, Solid*	91	J		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Indeno(1,2,3-cd)pyrene, Solid*	57	J		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Dibenzo(a,h)anthracene, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Benzo(ghi)perylene, Solid*	69	J		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Benzaldehyde, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Acetophenone, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Caprolactam, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	1,1'-Biphenyl, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw
	Atrazine, Solid*	ND	U		46	460	1.00000	ug/Kg	18721		06/17/03 1306	jdw

0000004

* In Description = Dry Wgt.

566/1539

567/1539
EPA SAMPLE NO.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ZR-TP-02
(3.5-5.5')

Lab Name: STL-CT Contract:

Lab Code: STLCT Case No.: 203900 SAS No.: SDG No.: 203900

Matrix: (soil/water) SOIL Lab Sample ID: 203900-1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QO9391

Level: (low/med) LOW Date Received: 06/13/03

% Moisture: 28 decanted: (Y/N) N Date Extracted:06/16/03

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/17/03

Injection Volume: _____(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) ~~N~~ Y pH: ___

Number TICs found: 30 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	9.88	500	J
2.		UNKNOWN	10.93	360	J
3.		UNKNOWN	11.26	640	J
4.		UNKNOWN	11.34	290	J
5.		UNKNOWN	11.48	590	J
6.		UNKNOWN	11.60	320	J
7.		UNKNOWN	11.69	390	J
8.		UNKNOWN	11.75	310	J
9.		UNKNOWN	11.82	280	J
10.		UNKNOWN	11.86	420	J
11.		UNKNOWN	11.98	460	J
12.		UNKNOWN	12.01	300	J
13.		UNKNOWN	12.06	260	J
14.		UNKNOWN	12.21	320	J
15.		UNKNOWN	12.29	420	J
16.		UNKNOWN	12.48	570	J
17.		UNKNOWN	12.60	270	J
18.	205-99-2	BENZ[E]ACEPHENANTHRYLENE	12.68	360	NJ
19.		UNKNOWN	12.73	350	J
20.		UNKNOWN	12.90	300	J
21.		UNKNOWN	13.01	280	J
22.		UNKNOWN	13.13	270	J
23.		UNKNOWN	13.17	270	J
24.		UNKNOWN	13.37	370	J
25.		UNKNOWN	13.53	360	J
26.		UNKNOWN	13.74	310	J
27.		UNKNOWN	13.86	270	J
28.		UNKNOWN	14.29	320	J
29.		UNKNOWN	14.47	430	J
30.		UNKNOWN	14.54	270	J

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-SS-02
Date Sampled.....: 06/10/2003
Time Sampled.....: 09:15
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-2
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
ASTM D-2216												
	% Solids, Solid	77.0			0.10	0.10	1	%	18321		06/13/03 0000	mmw
	% Moisture, Solid	23.0			0.10	0.10	1	%	18321		06/13/03 0000	mmw
OLM04.2	CLP BNA Extractable Organics											
	Phenol, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Bis(2-chloroethyl)ether, Solid*	ND	U	UJ	42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	2-Chlorophenol, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	2-Methylphenol, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	2,2-oxybis (1-chloropropane), Solid*	ND	U	UJ	42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	4-Methylphenol, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	n-Nitroso-di-n-propylamine, Solid*	ND	U	UJ	42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Hexachloroethane, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Nitrobenzene, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Isophorone, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	2-Nitrophenol, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	2,4-Dimethylphenol, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Bis(2-chloroethoxy)methane, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	2,4-Dichlorophenol, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Naphthalene, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	4-Chloroaniline, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Hexachlorobutadiene, Solid*	ND	U	UJ	42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	4-Chloro-3-methylphenol, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	2-Methylnaphthalene, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Hexachlorocyclopentadiene, Solid*	ND	U	UJ	42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	2,4,6-Trichlorophenol, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	2,4,5-Trichlorophenol, Solid*	ND	U		110	1100	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	2-Chloronaphthalene, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	2-Nitroaniline, Solid*	ND	U		110	1100	1.00000	ug/Kg	18721		06/17/03 1452	jdw

* In Description = Dry Wgt.

8/28/03

Job Number: 203900

LABORATORY TEST RESULTS

Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-SS-02
Date Sampled.....: 06/10/2003
Time Sampled.....: 09:15
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-2
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Dimethyl phthalate, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Acenaphthylene, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	2,6-Dinitrotoluene, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	3-Nitroaniline, Solid*	ND	U		110	1100	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Acenaphthene, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	2,4-Dinitrophenol, Solid*	ND	U		110	1100	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	4-Nitrophenol, Solid*	ND	U	UJ	110	1100	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Dibenzofuran, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	2,4-Dinitrotoluene, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Diethyl phthalate, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	4-Chlorophenyl phenyl ether, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Fluorene, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	4-Nitroaniline, Solid*	ND	U		110	1100	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	4,6-Dinitro-2-methylphenol, Solid*	ND	U		110	1100	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	n-Nitrosodiphenylamine, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	4-Bromophenyl phenyl ether, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Hexachlorobenzene, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Pentachlorophenol, Solid*	ND	U		110	1100	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Phenanthrene, Solid*	190	J		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Anthracene, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Carbazole, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Di-n-butyl phthalate, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Fluoranthene, Solid*	380	J		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Pyrene, Solid*	260	J		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Butyl benzyl phthalate, Solid*	ND	U	UJ	42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	3,3-Dichlorobenzidine, Solid*	ND	U	UJ	42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Benzo(a)anthracene, Solid*	150	J		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Chrysene, Solid*	180	J		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Bis(2-ethylhexyl)phthalate, Solid*	84	J		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw

* In Description = Dry Wgt.

8/28/03

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-SS-02
Date Sampled.....: 06/10/2003
Time Sampled.....: 09:15
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-2
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Di-n-octyl phthalate, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Benzo(b)fluoranthene, Solid*	340	J		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Benzo(k)fluoranthene, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Benzo(a)pyrene, Solid*	140	J		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Indeno(1,2,3-cd)pyrene, Solid*	85	J		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Dibenzo(a,h)anthracene, Solid*	42	J		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Benzo(ghi)perylene, Solid*	88	J		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Benzaldehyde, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Acetophenone, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Caprolactam, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	1,1'-Biphenyl, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw
	Atrazine, Solid*	ND	U		42	420	1.00000	ug/Kg	18721		06/17/03 1452	jdw

* In Description = Dry Wgt.

571/1539
EPA SAMPLE NO.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ZR-SS-02

Lab Name: STL-CT Contract:

Lab Code: STLCT Case No.: 203900 SAS No.: SDG No.: 203900

Matrix: (soil/water) SOIL Lab Sample ID: 203900-2

Sample wt/vol: 30.6 (g/mL) G Lab File ID: QO9395

Level: (low/med) LOW Date Received: 06/13/03

% Moisture: 23 decanted: (Y/N) N Date Extracted: 06/16/03

Concentrated Extract Volume: 500 (uL) Date Analyzed: 06/17/03

Injection Volume: _____(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) ~~N~~ Y pH: ___

8/28/03

Number TICs found: 30 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN C16H34O2 ISOMER	11.25	270	J
2.		UNKNOWN	11.57	160	J
3.		UNKNOWN	11.76	160	J
4.		UNKNOWN	11.83	160	J
5.		UNKNOWN	11.98	180	J
6.		UNKNOWN	12.16	240	J
7.		UNKNOWN	12.28	270	J
8.		UNKNOWN	12.36	160	J
9.		UNKNOWN	12.52	210	J
10.		UNKNOWN	12.57	140	J
11.		UNKNOWN	12.61	200	J
12.	205-99-2	BENZ[E]ACEPHENANTHRYLENE	12.68	240	NJ
13.		UNKNOWN	12.90	280	J
14.		UNKNOWN	13.11	240	J
15.		UNKNOWN	13.17	200	J
16.		UNKNOWN	13.34	200	J
17.		UNKNOWN	13.37	170	J
18.		UNKNOWN	13.43	180	J
19.		UNKNOWN	13.51	290	J
20.		UNKNOWN	13.55	170	J
21.		UNKNOWN	13.66	200	J
22.		UNKNOWN	13.71	200	J
23.		UNKNOWN	13.86	270	J
24.		UNKNOWN	14.15	310	J
25.		UNKNOWN C29H50O ISOMER	14.46	610	J
26.		UNKNOWN	14.54	170	J
27.		UNKNOWN	14.66	150	J
28.		UNKNOWN	15.29	280	J
29.		UNKNOWN	15.89	150	J
30.		UNKNOWN	16.07	240	J

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-TP-03 (5.5-9')
Date Sampled.....: 06/10/2003
Time Sampled.....: 10:45
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-3
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
ASTM D-2216												
	% Solids, Solid	37.4			0.10	0.10	1	%	18321		06/13/03 0000	mmw
	% Moisture, Solid	62.6			0.10	0.10	1	%	18321		06/13/03 0000	mmw
OLM04.2	CLP BNA Extractable Organics											
	Phenol, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Bis(2-chloroethyl)ether, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	2-Chlorophenol, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	2-Methylphenol, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	2,2-oxybis (1-chloropropane), Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	4-Methylphenol, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	n-Nitroso-di-n-propylamine, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Hexachloroethane, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Nitrobenzene, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Isophorone, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	2-Nitrophenol, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	2,4-Dimethylphenol, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Bis(2-chloroethoxy)methane, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	2,4-Dichlorophenol, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Naphthalene, Solid*	510	J		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	4-Chloroaniline, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Hexachlorobutadiene, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	4-Chloro-3-methylphenol, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	2-Methylnaphthalene, Solid*	92	J		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Hexachlorocyclopentadiene, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	2,4,6-Trichlorophenol, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	2,4,5-Trichlorophenol, Solid*	ND	U		220	2200	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	2-Chloronaphthalene, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	2-Nitroaniline, Solid*	ND	U		220	2200	1.00000	ug/Kg	18721		06/17/03 1519	jdw

* In Description = Dry Wgt.

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LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-TP-03 (5.5-9')
Date Sampled.....: 06/10/2003
Time Sampled.....: 10:45
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-3
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Dimethyl phthalate, Solid*	ND	U	UJ	88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Acenaphthylene, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	2,6-Dinitrotoluene, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	3-Nitroaniline, Solid*	ND	U		220	2200	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Acenaphthene, Solid*	140	J	J	88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	2,4-Dinitrophenol, Solid*	ND	U	UJ	220	2200	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	4-Nitrophenol, Solid*	ND	U		220	2200	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Dibenzofuran, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	2,4-Dinitrotoluene, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Diethyl phthalate, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	4-Chlorophenyl phenyl ether, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Fluorene, Solid*	320	J	J	88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	4-Nitroaniline, Solid*	ND	U	UJ	220	2200	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	4,6-Dinitro-2-methylphenol, Solid*	ND	U		220	2200	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	n-Nitrosodiphenylamine, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	4-Bromophenyl phenyl ether, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Hexachlorobenzene, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Pentachlorophenol, Solid*	ND	U		220	2200	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Phenanthrene, Solid*	610	J	J	88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Anthracene, Solid*	200	J	J	88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Carbazole, Solid*	ND	U	UJ	88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Di-n-butyl phthalate, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Fluoranthene, Solid*	1300		J	88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Pyrene, Solid*	1000		J	88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Butyl benzyl phthalate, Solid*	ND	U	UJ	88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	3,3-Dichlorobenzidine, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Benzo(a)anthracene, Solid*	590	J	J	88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Chrysene, Solid*	490	J	J	88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Bis(2-ethylhexyl)phthalate, Solid*	~~37000~~ 4000		DJ	88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw

* In Description = Dry Wgt.

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LABORATORY TEST RESULTS

Job Number: 203900

Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO | PROJECT: A03-5605 DEPEW | ATTN: Brian Fischer

Customer Sample ID: ZR-TP-03 (5.5-9')
Date Sampled.....: 06/10/2003
Time Sampled.....: 10:45
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-3
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Di-n-octyl phthalate, Solid*	ND	U	UJ	88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Benzo(b)fluoranthene, Solid*	330	J	J	88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Benzo(k)fluoranthene, Solid*	400	J		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Benzo(a)pyrene, Solid*	470	J		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Indeno(1,2,3-cd)pyrene, Solid*	270	J		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Dibenzo(a,h)anthracene, Solid*	160	J		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Benzo(ghi)perylene, Solid*	270	J		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Benzaldehyde, Solid*	ND	U	UJ	88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Acetophenone, Solid*	180	J	J	88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Caprolactam, Solid*	ND	U	UJ	88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	1,1'-Biphenyl, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw
	Atrazine, Solid*	ND	U		88	880	1.00000	ug/Kg	18721		06/17/03 1519	jdw

* In Description = Dry Wgt.

8/28/03

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

575/1539
EPA SAMPLE NO.

ZR-TP-03
(5.5-9')

Lab Name: STL-CT Contract:

Lab Code: STLCT Case No.: 203900 SAS No.: SDG No.: 203900

Matrix: (soil/water) SOIL Lab Sample ID: 203900-3

Sample wt/vol: 30.0 (g/mL) G Lab File ID: Q09396

Level: (low/med) LOW Date Received: 06/13/03

% Moisture: 63 decanted: (Y/N) N Date Extracted: 06/16/03

Concentrated Extract Volume: 500 (uL) Date Analyzed: 06/17/03

Injection Volume: _____ (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) ~~N~~ Y pH: ___

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	9.69	17000	J
2.	1000197-14-	4B,8-DIMETHYL-2-ISOPROPYLPH	9.79	23000	NJ
3.		UNKNOWN	9.88	26000	J
4.		UNKNOWN	9.99	14000	J
5.		UNKNOWN C18H22 ISOMER	10.11	31000	J
6.		UNKNOWN ACID	10.15	25000	J
7.	7396-38-5	PHENANTHRENE, 2,4,5,7-TETRA	10.59	840	NJ
8.		UNKNOWN	12.23	1300	J
9.		UNKNOWN	12.31	1500	J
10.		UNKNOWN	12.39	840	J
11.		UNKNOWN	12.52	1100	J
12.		UNKNOWN	12.59	1500	J
13.		UNKNOWN	12.91	1100	J
14.		UNKNOWN	13.04	1400	J
15.		UNKNOWN	13.29	1100	J
16.		UNKNOWN	13.41	3600	J
17.	6079-19-2	CHOLESTANE, 4,5-EPOXY-, (4.	13.60	2500	NJ
18.	80-97-7	CHOLESTANOL	13.63	1300	NJ
19.		UNKNOWN	13.80	1500	J
20.		UNKNOWN C27H43NO ISOMER	13.89	1200	J
21.		UNKNOWN	13.93	860	J
22.		UNKNOWN	14.14	880	J
23.		UNKNOWN	14.24	1300	J
24.		UNKNOWN	14.31	1400	J
25.	83-47-6	.GAMMA.-SITOSTEROL	14.56	2000	NJ
26.		UNKNOWN	14.64	1600	J
27.		UNKNOWN	14.78	1500	J
28.		UNKNOWN	14.89	920	J
29.		UNKNOWN C30H48O ISOMER	15.01	1200	J
30.		UNKNOWN	15.27	930	J

J

FORM I SV-TIC OLM03.0

8/26/03

LABORATORY TEST RESULTS

Job Number: 203900

Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO | PROJECT: A03-5605 DEPEW | ATTN: Brian Fischer

Customer Sample ID: ZR-TP-03 (5.5-9')
Date Sampled.....: 06/10/2003
Time Sampled.....: 10:45
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-3
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
OLM04.2	CLP BNA Extractable Organics											
	Phenol, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Bis(2-chloroethyl)ether, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	2-Chlorophenol, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	2-Methylphenol, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	2,2-oxybis (1-chloropropane), Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	4-Methylphenol, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	n-Nitroso-di-n-propylamine, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Hexachloroethane, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Nitrobenzene, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Isophorone, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	2-Nitrophenol, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	2,4-Dimethylphenol, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Bis(2-chloroethoxy)methane, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	2,4-Dichlorophenol, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Naphthalene, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	4-Chloroaniline, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Hexachlorobutadiene, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	4-Chloro-3-methylphenol, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	2-Methylnaphthalene, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Hexachlorocyclopentadiene, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	2,4,6-Trichlorophenol, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	2,4,5-Trichlorophenol, Solid*	ND	U		2200	22000	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	2-Chloronaphthalene, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	2-Nitroaniline, Solid*	ND	U		2200	22000	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Dimethyl phthalate, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Acenaphthylene, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	2,6-Dinitrotoluene, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	3-Nitroaniline, Solid*	ND	U		2200	22000	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw

* In Description = Dry Wgt.

8/28/03

LABORATORY TEST RESULTS

Job Number: 203900 Date: 06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-TP-03 (5.5-9')
Date Sampled.....: 06/10/2003
Time Sampled.....: 10:45
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-3
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Acenaphthene, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	2,4-Dinitrophenol, Solid*	ND	U		2200	22000	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	4-Nitrophenol, Solid*	ND	U		2200	22000	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Dibenzofuran, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	2,4-Dinitrotoluene, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Diethyl phthalate, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	4-Chlorophenyl phenyl ether, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Fluorene, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	4-Nitroaniline, Solid*	ND	U		2200	22000	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	4,6-Dinitro-2-methylphenol, Solid*	ND	U		2200	22000	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	n-Nitrosodiphenylamine, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	4-Bromophenyl phenyl ether, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Hexachlorobenzene, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Pentachlorophenol, Solid*	ND	U		2200	22000	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Phenanthrene, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Anthracene, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Carbazole, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Di-n-butyl phthalate, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Fluoranthene, Solid*	1100	J		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Pyrene, Solid*	890	J		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Butyl benzyl phthalate, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	3,3-Dichlorobenzidine, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Benzo(a)anthracene, Solid*	ND	U	M	880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Chrysene, Solid*	ND	U	M	880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Bis(2-ethylhexyl)phthalate, Solid*	41000		H	880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Di-n-octyl phthalate, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Benzo(b)fluoranthene, Solid*	ND	U	M	880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Benzo(k)fluoranthene, Solid*	ND	U	M	880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Benzo(a)pyrene, Solid*	ND	U	M	880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw

* In Description = Dry Wgt.

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ST00015

577/1539

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-TP-03 (5.5-9')
Date Sampled.....: 06/10/2003
Time Sampled.....: 10:45
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-8
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Indeno(1,2,3-cd)pyrene, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Dibenzo(a,h)anthracene, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Benzo(ghi)perylene, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Benzaldehyde, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Acetophenone, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Caprolactam, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	1,1'-Biphenyl, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw
	Atrazine, Solid*	ND	U		880	8800	10.00000	ug/Kg	18721	DL	06/20/03 1831	jdw

* In Description = Dry Wgt.

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578/1539

579/1539
EPA SAMPLE NO.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ZR-TP-03
(5.5-9')DL

Lab Name: STL-CT Contract:

Lab Code: STLCT Case No.: 203900 SAS No.: SDG No.: 203900

Matrix: (soil/water) SOIL Lab Sample ID: 203900-3DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: P8050

Level: (low/med) LOW Date Received: 06/13/03

% Moisture: 63 decanted: (Y/N) N Date Extracted:06/16/03

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/20/03

Injection Volume: _____(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 30 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	9.54	6700	JD
2.		UNKNOWN	9.67	7600	JD
3.	1000197-14-	4B,8-DIMETHYL-2-ISOPROPYLPH	9.77	8900	JD
4.		UNKNOWN	9.86	7200	JD
5.	69009-90-1	1,1'-BIPHENYL, BIS(1-METHYL	10.09	9100	JD
6.	7396-38-5	PHENANTHRENE, 2,4,5,7-TETRA	10.57	6800	JD
7.		UNKNOWN	11.14	6600	JD
8.		UNKNOWN C15H28O3 ACID	11.53	8900	JD
9.		UNKNOWN	11.64	9300	JD
10.		UNKNOWN	11.93	8800	JD
11.		UNKNOWN	12.01	8700	JD
12.		UNKNOWN	12.19	7000	JD
13.	4602-84-0	2,6,10-DODECATRIEN-1-OL, 3,	12.26	9500	JD
14.		UNKNOWN	12.47	7900	JD
15.		UNKNOWN	12.56	7500	JD
16.		UNKNOWN	12.61	6400	JD
17.		UNKNOWN	12.77	12000	JD
18.		UNKNOWN	13.07	6500	JD
19.		UNKNOWN	13.17	7100	JD
20.		UNKNOWN	13.22	6500	JD
21.		UNKNOWN	13.37	9200	JD
22.		UNKNOWN	13.41	7800	JD
23.		UNKNOWN	13.53	12000	JD
24.		UNKNOWN	13.73	8500	JD
25.		UNKNOWN	13.76	7800	JD
26.		UNKNOWN	14.25	6200	JD
27.		UNKNOWN	14.47	11000	JD
28.		UNKNOWN	14.66	6000	JD
29.		UNKNOWN	14.77	8900	JD
30.		UNKNOWN	14.93	7200	JD

6/20/03

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-SS-05
Date Sampled.....: 06/10/2003
Time Sampled.....: 16:00
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-4
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
ASTM D-2216												
	% Solids, Solid	85.2			0.10	0.10	1	%	18321		06/13/03 0000	mmw
	% Moisture, Solid	14.8			0.10	0.10	1	%	18321		06/13/03 0000	mmw
OLM04.2	CLP BNA Extractable Organics											
	Phenol, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Bis(2-chloroethyl)ether, Solid*	ND	U	UJ	39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	2-Chlorophenol, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	2-Methylphenol, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	2,2-oxybis (1-chloropropane), Solid*	ND	U	UJ	39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	4-Methylphenol, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	n-Nitroso-di-n-propylamine, Solid*	ND	U	UJ	39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Hexachloroethane, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Nitrobenzene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Isophorone, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	2-Nitrophenol, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	2,4-Dimethylphenol, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Bis(2-chloroethoxy)methane, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	2,4-Dichlorophenol, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Naphthalene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	4-Chloroaniline, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Hexachlorobutadiene, Solid*	ND	U	UJ	39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	4-Chloro-3-methylphenol, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	2-Methylnaphthalene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Hexachlorocyclopentadiene, Solid*	ND	U	UJ	39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	2,4,6-Trichlorophenol, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	2,4,5-Trichlorophenol, Solid*	ND	U		97	970	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	2-Chloronaphthalene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	2-Nitroaniline, Solid*	ND	U		97	970	1.00000	ug/Kg	18721		06/17/03 1545	jdw

* In Description = Dry Wgt.

8/26/03

Job Number: 203900

LABORATORY TEST RESULTS

Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO | PROJECT: A03-5605 DEPEW | ATTN: Brian Fischer

Customer Sample ID: ZR-SS-05
Date Sampled.....: 06/10/2003
Time Sampled.....: 16:00
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-4
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Dimethyl phthalate, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Acenaphthylene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	2,6-Dinitrotoluene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	3-Nitroaniline, Solid*	ND	U		97	970	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Acenaphthene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	2,4-Dinitrophenol, Solid*	ND	U		97	970	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	4-Nitrophenol, Solid*	ND	U	UJ	97	970	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Dibenzofuran, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	2,4-Dinitrotoluene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Diethyl phthalate, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	4-Chlorophenyl phenyl ether, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Fluorene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	4-Nitroaniline, Solid*	ND	U		97	970	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	4,6-Dinitro-2-methylphenol, Solid*	ND	U		97	970	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	n-Nitrosodiphenylamine, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	4-Bromophenyl phenyl ether, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Hexachlorobenzene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Pentachlorophenol, Solid*	ND	U		97	970	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Phenanthrene, Solid*	570			39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Anthracene, Solid*	110	J		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Carbazole, Solid*	78	J		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Di-n-butyl phthalate, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Fluoranthene, Solid*	850			39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Pyrene, Solid*	510			39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Butyl benzyl phthalate, Solid*	ND	U	UJ	39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	3,3-Dichlorobenzidine, Solid*	ND	U	UJ	39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Benzo(a)anthracene, Solid*	310	J		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Chrysene, Solid*	280	J		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Bis(2-ethylhexyl)phthalate, Solid*	79	J		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw

* In Description = Dry Wgt.

8/28/03

581/1539

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-SS-05
Date Sampled.....: 06/10/2003
Time Sampled.....: 16:00
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-4
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Di-n-octyl phthalate, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Benzo(b)fluoranthene, Solid*	270	J		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Benzo(k)fluoranthene, Solid*	220	J		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Benzo(a)pyrene, Solid*	240	J		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Indeno(1,2,3-cd)pyrene, Solid*	130	J		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Dibenzo(a,h)anthracene, Solid*	64	J		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Benzo(ghi)perylene, Solid*	140	J		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Benzaldehyde, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Acetophenone, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Caprolactam, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	1,1'-Biphenyl, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw
	Atrazine, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/17/03 1545	jdw

00000120

582/1539

* In Description = Dry Wgt.

583/1539
EPA SAMPLE NO.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ZR-SS-05

Lab Name: STL-CT Contract:

Lab Code: STLCT Case No.: 203900 SAS No.: SDG No.: 203900

Matrix: (soil/water) SOIL Lab Sample ID: 203900-4

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QO9397

Level: (low/med) LOW Date Received: 06/13/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 06/16/03

Concentrated Extract Volume: 500 (uL) Date Analyzed: 06/17/03

Injection Volume: _____ (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) ~~N~~ Y 8/28/03 pH: ___

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	57-10-3	N-HEXADECANOIC ACID	9.39	15000	NJ
2.	112-80-1	OLEIC ACID	10.07	3500	NJ
3.	57-11-4	OCTADECANOIC ACID	10.16	5400	NJ
4.	82-05-3	7H-BENZ[DE]ANTHRACEN-7-ONE	11.58	320	NJ
5.		UNKNOWN	11.66	370	J
6.		UNKNOWN	11.78	550	J
7.		UNKNOWN C19H14 PAH	11.83	380	J
8.		UNKNOWN	11.87	680	J
9.		UNKNOWN	11.96	430	J
10.		UNKNOWN	12.05	400	J
11.		UNKNOWN	12.11	480	J
12.		UNKNOWN	12.16	270	J
13.		UNKNOWN	12.21	280	J
14.		UNKNOWN	12.29	480	J
15.		UNKNOWN	12.38	280	J
16.	192-97-2	BENZO[E]PYRENE	12.53	350	NJ
17.		UNKNOWN	12.56	290	J
18.		UNKNOWN	12.62	290	J
19.	198-55-0	PERYLENE	12.69	500	NJ
20.		UNKNOWN	12.89	350	J
21.		UNKNOWN	13.00	330	J
22.		UNKNOWN	13.07	280	J
23.		UNKNOWN	13.10	250	J
24.		UNKNOWN	13.22	230	J
25.		UNKNOWN	13.27	240	J
26.		UNKNOWN	13.38	210	J
27.		UNKNOWN	14.18	230	J
28.		UNKNOWN	14.47	240	J
29.		UNKNOWN	14.61	240	J
30.		UNKNOWN	15.89	300	J

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-SS-01
Date Sampled.....: 06/10/2003
Time Sampled.....: 08:25
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-5
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
ASTM D-2216												
	% Solids, Solid	81.3			0.10	0.10	1	%	18321		06/13/03 0000	mmw
	% Moisture, Solid	18.7			0.10	0.10	1	%	18321		06/13/03 0000	mmw
OLM04.2	CLP BNA Extractable Organics											
	Phenol, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Bis(2-chloroethyl)ether, Solid*	ND	U	UJ	40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	2-Chlorophenol, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	2-Methylphenol, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	2,2-oxybis (1-chloropropane), Solid*	ND	U	UJ	40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	4-Methylphenol, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	n-Nitroso-di-n-propylamine, Solid*	ND	U	UJ	40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Hexachloroethane, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Nitrobenzene, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Isophorone, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	2-Nitrophenol, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	2,4-Dimethylphenol, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Bis(2-chloroethoxy)methane, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	2,4-Dichlorophenol, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Naphthalene, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	4-Chloroaniline, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Hexachlorobutadiene, Solid*	ND	U	UJ	40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	4-Chloro-3-methylphenol, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	2-Methylnaphthalene, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Hexachlorocyclopentadiene, Solid*	ND	U	UJ	40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	2,4,6-Trichlorophenol, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	2,4,5-Trichlorophenol, Solid*	ND	U		100	1000	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	2-Chloronaphthalene, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	2-Nitroaniline, Solid*	ND	U		100	1000	1.00000	ug/Kg	18721		06/17/03 1612	jdw

* In Description = Dry Wgt.

8/28/03

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-SS-01
Date Sampled.....: 06/10/2003
Time Sampled.....: 08:25
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-5
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Dimethyl phthalate, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Acenaphthylene, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	2,6-Dinitrotoluene, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	3-Nitroaniline, Solid*	ND	U		100	1000	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Acenaphthene, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	2,4-Dinitrophenol, Solid*	ND	U		100	1000	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	4-Nitrophenol, Solid*	ND	U	UJ	100	1000	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Dibenzofuran, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	2,4-Dinitrotoluene, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Diethyl phthalate, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	4-Chlorophenyl phenyl ether, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Fluorene, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	4-Nitroaniline, Solid*	ND	U		100	1000	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	4,6-Dinitro-2-methylphenol, Solid*	ND	U		100	1000	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	n-Nitrosodiphenylamine, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	4-Bromophenyl phenyl ether, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Hexachlorobenzene, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Pentachlorophenol, Solid*	ND	U		100	1000	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Phenanthrene, Solid*	260	J		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Anthracene, Solid*	71	J		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Carbazole, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Di-n-butyl phthalate, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Fluoranthene, Solid*	460			40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Pyrene, Solid*	310	J		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Butyl benzyl phthalate, Solid*	ND	U	UJ	40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	3,3-Dichlorobenzidine, Solid*	ND	U	UJ	40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Benzo(a)anthracene, Solid*	180	J		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Chrysene, Solid*	170	J		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Bis(2-ethylhexyl)phthalate, Solid*	83	J		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-SS-01
Date Sampled.....: 06/10/2003
Time Sampled.....: 08:25
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-5
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Di-n-octyl phthalate, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Benzo(b)fluoranthene, Solid*	97	J		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Benzo(k)fluoranthene, Solid*	210	J		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Benzo(a)pyrene, Solid*	140	J		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Indeno(1,2,3-cd)pyrene, Solid*	85	J		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Dibenzo(a,h)anthracene, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Benzo(ghi)perylene, Solid*	97	J		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Benzaldehyde, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Acetophenone, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Caprolactam, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	1,1'-Biphenyl, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw
	Atrazine, Solid*	ND	U		40	400	1.00000	ug/Kg	18721		06/17/03 1612	jdw

* In Description = Dry Wgt.

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ZR-SS-01

Lab Name: STL-CT Contract:

Lab Code: STLCT Case No.: 203900 SAS No.: SDG No.: 203900

Matrix: (soil/water) SOIL Lab Sample ID: 203900-5

Sample wt/vol: 30.1 (g/mL) G Lab File ID: QO9398

Level: (low/med) LOW Date Received: 06/13/03

% Moisture: 19 decanted: (Y/N) N Date Extracted: 06/16/03

Concentrated Extract Volume: 500 (uL) Date Analyzed: 06/17/03

Injection Volume: _____ (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) ~~N~~ Y 6/23/03 pH: 2 ___

Number TICs found: 30 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.25	210	J
2.		UNKNOWN	11.77	160	J
3.		UNKNOWN	11.82	150	J
4.		UNKNOWN	11.93	150	J
5.		UNKNOWN	11.98	210	J
6.		UNKNOWN	12.01	170	J
7.		UNKNOWN	12.05	200	J
8.		UNKNOWN	12.15	250	J
9.		UNKNOWN	12.28	230	J
10.		UNKNOWN	12.34	140	J
11.		UNKNOWN	12.38	150	J
12.		UNKNOWN	12.52	310	J
13.		UNKNOWN	12.56	160	J
14.		UNKNOWN	12.61	240	J
15.		UNKNOWN	12.65	130	J
16.	198-55-0	PERYLENE	12.69	250	NJ
17.		UNKNOWN	12.89	290	J
18.		UNKNOWN	12.98	130	J
19.		UNKNOWN	13.00	180	J
20.		UNKNOWN	13.12	220	J
21.		UNKNOWN	13.17	170	J
22.		UNKNOWN	13.34	200	J
23.		UNKNOWN	13.43	150	J
24.		UNKNOWN	13.52	230	J
25.		UNKNOWN	13.57	150	J
26.		UNKNOWN	13.67	190	J
27.		UNKNOWN	13.86	160	J
28.		UNKNOWN	14.16	200	J
29.		UNKNOWN	14.47	250	J
30.		UNKNOWN	15.30	150	J

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-TP-09 (8')
Date Sampled.....: 06/10/2003
Time Sampled.....: 15:25
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-6
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
ASTM D-2216												
	% Solids, Solid	55.2			0.10	0.10	1	%	18321		06/13/03 0000	mmw
	% Moisture, Solid	44.8			0.10	0.10	1	%	18321		06/13/03 0000	mmw
OLM04.2	CLP BNA Extractable Organics											
	Phenol, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Bis(2-chloroethyl)ether, Solid*	ND	U	UJ	60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	2-Chlorophenol, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	2-Methylphenol, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	2,2-oxybis (1-chloropropane), Solid*	ND	U	UJ	60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	4-Methylphenol, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	n-Nitroso-di-n-propylamine, Solid*	ND	U	UJ	60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Hexachloroethane, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Nitrobenzene, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Isophorone, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	2-Nitrophenol, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	2,4-Dimethylphenol, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Bis(2-chloroethoxy)methane, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	2,4-Dichlorophenol, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Naphthalene, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	4-Chloroaniline, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Hexachlorobutadiene, Solid*	ND	U	UJ	60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	4-Chloro-3-methylphenol, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	2-Methylnaphthalene, Solid*	220	J		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Hexachlorocyclopentadiene, Solid*	ND	U	UJ	60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	2,4,6-Trichlorophenol, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	2,4,5-Trichlorophenol, Solid*	ND	U		150	1500	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	2-Chloronaphthalene, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	2-Nitroaniline, Solid*	ND	U		150	1500	1.00000	ug/Kg	18721		06/17/03 1638	jdw

* In Description = Dry Wgt.

8/28/03

588/1539

Job Number: 203900

LABORATORY TEST RESULTS

Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-TP-09 (8')
Date Sampled.....: 06/10/2003
Time Sampled.....: 15:25
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-6
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Dimethyl phthalate, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Acenaphthylene, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	2,6-Dinitrotoluene, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	3-Nitroaniline, Solid*	ND	U		150	1500	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Acenaphthene, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	2,4-Dinitrophenol, Solid*	ND	U		150	1500	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	4-Nitrophenol, Solid*	ND	U	UJ	150	1500	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Dibenzofuran, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	2,4-Dinitrotoluene, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Diethyl phthalate, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	4-Chlorophenyl phenyl ether, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Fluorene, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	4-Nitroaniline, Solid*	ND	U		150	1500	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	4,6-Dinitro-2-methylphenol, Solid*	ND	U		150	1500	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	n-Nitrosodiphenylamine, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	4-Bromophenyl phenyl ether, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Hexachlorobenzene, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Pentachlorophenol, Solid*	ND	U		150	1500	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Phenanthrene, Solid*	680			60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Anthracene, Solid*	120	J		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Carbazole, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Di-n-butyl phthalate, Solid*	960			60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Fluoranthene, Solid*	1600			60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Pyrene, Solid*	2000			60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Butyl benzyl phthalate, Solid*	ND	U	UJ	60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	3,3-Dichlorobenzidine, Solid*	ND	U	↓	60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Benzo(a)anthracene, Solid*	1000			60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Chrysene, Solid*	760		H	60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Bis(2-ethylhexyl)phthalate, Solid*	~~14000~~ 11000		AD	60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw

* In Description = Dry Wgt.

8/25/2

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-TP-09 (8')
Date Sampled.....: 06/10/2003
Time Sampled.....: 15:25
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-6
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Di-n-octyl phthalate, Solid*	220	J		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Benzo(b)fluoranthene, Solid*	880		M	60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Benzo(k)fluoranthene, Solid*	620		M	60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Benzo(a)pyrene, Solid*	900		H	60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Indeno(1,2,3-cd)pyrene, Solid*	650		H	60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Dibenzo(a,h)anthracene, Solid*	310	J		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Benzo(ghi)perylene, Solid*	720			60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Benzaldehyde, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Acetophenone, Solid*	320	J		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Caprolactam, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	1,1'-Biphenyl, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw
	Atrazine, Solid*	ND	U		60	600	1.00000	ug/Kg	18721		06/17/03 1638	jdw

00000828

* In Description = Dry Wgt.

590/1539

1F

591/1539
EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ZR-TP-09 (8')

Lab Name: STL-CT Contract:

Lab Code: STLCT Case No.: 203900 SAS No.: SDG No.: 203900

Matrix: (soil/water) SOIL Lab Sample ID: 203900-6

Sample wt/vol: 30.1 (g/mL) G Lab File ID: QO9399

Level: (low/med) LOW Date Received: 06/13/03

% Moisture: 45 decanted: (Y/N) N Date Extracted:06/16/03

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/17/03

Injection Volume: _____(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) ~~N~~ Y pH: ___

Number TICs found: 30 r/rdr

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	57-10-3	N-HEXADECANOIC ACID	9.39	4600	NJ
2.		UNKNOWN	9.61	5000	J
3.	1000197-14-1	4B,8-DIMETHYL-2-ISOPROPYLPHE	9.82	4700	NJ
4.		UNKNOWN	9.90	5000	J
5.		UNKNOWN	12.73	1100	J
6.	198-55-0	PERYLENE	12.75	1400	NJ
7.	36728-72-0	28-NOR-17.BETA.(H)-HOPANE	12.98	1900	NJ
8.		UNKNOWN	13.09	1200	J
9.		UNKNOWN	13.63	3600	J
10.		UNKNOWN	13.65	2700	J
11.		UNKNOWN	13.68	4600	J
12.		UNKNOWN	13.73	3500	J
13.		UNKNOWN	13.84	9700	J
14.		UNKNOWN	13.92	3800	J
15.		UNKNOWN	14.02	2100	J
16.		UNKNOWN	14.06	1400	J
17.		UNKNOWN	14.07	1100	J
18.		UNKNOWN	14.18	3700	J
19.		UNKNOWN C29H48O ISOMER	14.27	3400	J
20.		UNKNOWN	14.30	2100	J
21.		UNKNOWN	14.37	4500	J
22.		UNKNOWN	14.43	1900	J
23.	83-47-6	.GAMMA.-SITOSTEROL	14.59	6500	NJ
24.		UNKNOWN	14.68	5100	J
25.	1000194-64-2	4,4,6A,6B,8A,11,12,14B-OCTAM	14.80	4600	NJ
26.		UNKNOWN C29H50O ISOMER	14.92	3400	J
27.		UNKNOWN C30H48O ISOMER	15.05	2400	J
28.		UNKNOWN	15.19	1100	J
29.	1058-61-3	STIGMAST-4-EN-3-ONE	15.42	1900	NJ
30.		UNKNOWN	15.66	1300	J

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-TP-09 (8')
Date Sampled.....: 06/10/2003
Time Sampled.....: 15:25
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-6
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
OLM04.2	CLP BNA Extractable Organics											
	Phenol, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Bis(2-chloroethyl)ether, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	2-Chlorophenol, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	2-Methylphenol, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	2,2-oxybis (1-chloropropane), Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	4-Methylphenol, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	n-Nitroso-di-n-propylamine, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Hexachloroethane, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Nitrobenzene, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Isophorone, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	2-Nitrophenol, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	2,4-Dimethylphenol, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Bis(2-chloroethoxy)methane, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	2,4-Dichlorophenol, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Naphthalene, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	4-Chloroaniline, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Hexachlorobutadiene, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	4-Chloro-3-methylphenol, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	2-Methylnaphthalene, Solid*	310	J		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Hexachlorocyclopentadiene, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	2,4,6-Trichlorophenol, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	2,4,5-Trichlorophenol, Solid*	ND	U		750	7500	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	2-Chloronaphthalene, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	2-Nitroaniline, Solid*	ND	U		750	7500	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Dimethyl phthalate, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Acenaphthylene, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	2,6-Dinitrotoluene, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	3-Nitroaniline, Solid*	ND	U		750	7500	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw

* In Description = Dry Wgt.

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LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-TP-09 (8')
Date Sampled.....: 06/10/2003
Time Sampled.....: 15:25
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-6
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Acenaphthene, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	2,4-Dinitrophenol, Solid*	ND	U		750	7500	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	4-Nitrophenol, Solid*	ND	U		750	7500	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Dibenzofuran, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	2,4-Dinitrotoluene, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Diethyl phthalate, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	4-Chlorophenyl phenyl ether, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Fluorene, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	4-Nitroaniline, Solid*	ND	U		750	7500	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	4,6-Dinitro-2-methylphenol, Solid*	ND	U		750	7500	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	n-Nitrosodiphenylamine, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	4-Bromophenyl phenyl ether, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Hexachlorobenzene, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Pentachlorophenol, Solid*	ND	U		750	7500	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Phenanthrene, Solid*	710	J		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Anthracene, Solid*	ND	U	M	300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Carbazole, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Di-n-butyl phthalate, Solid*	740	J		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Fluoranthene, Solid*	1500	J		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Pyrene, Solid*	1400	J		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Butyl benzyl phthalate, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	3,3-Dichlorobenzidine, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Benzo(a)anthracene, Solid*	980	J		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Chrysene, Solid*	870	J		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Bis(2-ethylhexyl)phthalate, Solid*	11000		M	300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Di-n-octyl phthalate, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Benzo(b)fluoranthene, Solid*	990	J	M	300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Benzo(k)fluoranthene, Solid*	800	J	M	300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Benzo(a)pyrene, Solid*	980	J		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-TP-09 (8')
Date Sampled.....: 06/10/2003
Time Sampled.....: 15:25
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-6
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Indeno(1,2,3-cd)pyrene, Solid*	730	J		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Dibenzo(a,h)anthracene, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Benzo(ghi)perylene, Solid*	620	J		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Benzaldehyde, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Acetophenone, Solid*	310	J		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Caprolactam, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	1,1'-Biphenyl, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw
	Atrazine, Solid*	ND	U		300	3000	5.00000	ug/Kg	18721	DL	06/20/03 1857	jdw

* In Description = Dry Wgt.

595/1539
EPA SAMPLE NO.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ZR-TP-09 (8')DL

Lab Name: STL-CT Contract:

Lab Code: STLCT Case No.: 203900 SAS No.: SDG No.: 203900

Matrix: (soil/water) SOIL Lab Sample ID: 203900-6DL

Sample wt/vol: 30.1 (g/mL) G Lab File ID: P8051

Level: (low/med) LOW Date Received: 06/13/03

% Moisture: 45 decanted: (Y/N) N Date Extracted:06/16/03

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/20/03

Injection Volume: _____(uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	9.47	6500	JD
2.		UNKNOWN	9.56	7100	JD
3.		UNKNOWN	9.58	5100	JD
4.		UNKNOWN	9.67	7700	JD
5.	1000197-14-	4B,8-DIMETHYL-2-ISOPROPYLPH	9.78	18000	JD
6.		UNKNOWN C18H26 ISOMER	9.87	11000	JD
7.		UNKNOWN	9.97	4600	JD
8.		UNKNOWN	9.99	5600	JD
9.	69009-90-1	1,1'-BIPHENYL, BIS(1-METHYL	10.10	8000	JD
10.		UNKNOWN	10.15	5100	JD
11.		UNKNOWN C17H16 ISOMER	10.36	5200	JD
12.		UNKNOWN	10.52	5300	JD
13.		UNKNOWN C18H18 ISOMER	10.60	19000	JD
14.		UNKNOWN	10.62	4800	JD
15.		UNKNOWN	10.71	9000	JD
16.		UNKNOWN	10.78	5200	JD
17.		UNKNOWN	10.83	5300	JD
18.		UNKNOWN	10.85	5300	JD
19.		UNKNOWN	10.98	7500	JD
20.		UNKNOWN	11.11	6100	JD
21.		UNKNOWN	11.15	9300	JD
22.		UNKNOWN	11.64	9200	JD
23.		UNKNOWN	11.94	5600	JD
24.		UNKNOWN	11.97	5700	JD
25.		UNKNOWN	12.03	7500	JD
26.		UNKNOWN	12.07	7400	JD
27.		UNKNOWN	12.19	5900	JD
28.		UNKNOWN C22H36O2 ISOMER	12.27	7200	JD
29.		UNKNOWN	12.77	4900	JD
30.		UNKNOWN	13.38	5700	JD

6/26/03

Job Number: 203900

LABORATORY TEST RESULTS

Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO | PROJECT: A03-5605 DEPEW | ATTN: Brian Fischer

Customer Sample ID: ZR-TP-11 (2-4')
Date Sampled.....: 06/10/2003
Time Sampled.....: 13:20
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-7
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
ASTM D-2216												
	% Solids, Solid	84.5			0.10	0.10	1	%	18321		06/13/03 0000	mmw
	% Moisture, Solid	15.5			0.10	0.10	1	%	18321		06/13/03 0000	mmw
OLM04.2	CLP BNA Extractable Organics											
	Phenol, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Bis(2-chloroethyl)ether, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	2-Chlorophenol, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	2-Methylphenol, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	2,2-oxybis (1-chloropropane), Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	4-Methylphenol, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	n-Nitroso-di-n-propylamine, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Hexachloroethane, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Nitrobenzene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Isophorone, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	2-Nitrophenol, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	2,4-Dimethylphenol, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Bis(2-chloroethoxy)methane, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	2,4-Dichlorophenol, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Naphthalene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	4-Chloroaniline, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Hexachlorobutadiene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	4-Chloro-3-methylphenol, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	2-Methylnaphthalene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Hexachlorocyclopentadiene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	2,4,6-Trichlorophenol, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	2,4,5-Trichlorophenol, Solid*	ND	U		98	980	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	2-Chloronaphthalene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	2-Nitroaniline, Solid*	ND	U		98	980	1.00000	ug/Kg	18721		06/26/03 1604	jdw

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-TP-11 (2-4')
Date Sampled.....: 06/10/2003
Time Sampled.....: 13:20
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-7
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Dimethyl phthalate, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Acenaphthylene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	2,6-Dinitrotoluene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	3-Nitroaniline, Solid*	ND	U		98	980	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Acenaphthene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	2,4-Dinitrophenol, Solid*	ND	U		98	980	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	4-Nitrophenol, Solid*	ND	U		98	980	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Dibenzofuran, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	2,4-Dinitrotoluene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Diethyl phthalate, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	4-Chlorophenyl phenyl ether, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Fluorene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	4-Nitroaniline, Solid*	ND	U		98	980	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	4,6-Dinitro-2-methylphenol, Solid*	ND	U		98	980	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	n-Nitrosodiphenylamine, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	4-Bromophenyl phenyl ether, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Hexachlorobenzene, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Pentachlorophenol, Solid*	ND	U		98	980	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Phenanthrene, Solid*	570			39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Anthracene, Solid*	110	J		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Carbazole, Solid*	79	J		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Di-n-butyl phthalate, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Fluoranthene, Solid*	1000			39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Pyrene, Solid*	830			39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Butyl benzyl phthalate, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	3,3-Dichlorobenzidine, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Benzo(a)anthracene, Solid*	460			39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Chrysene, Solid*	550			39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Bis(2-ethylhexyl)phthalate, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 203900

Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-TP-11 (2-4')
Date Sampled.....: 06/10/2003
Time Sampled.....: 13:20
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-7
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Di-n-octyl phthalate, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Benzo(b)fluoranthene, Solid*	330	J	M	39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Benzo(k)fluoranthene, Solid*	390	J	M	39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Benzo(a)pyrene, Solid*	370	J		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Indeno(1,2,3-cd)pyrene, Solid*	250	J		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Dibenzo(a,h)anthracene, Solid*	120	J		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Benzo(ghi)perylene, Solid*	230	J		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Benzaldehyde, Solid*	ND	U	UJ	39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Acetophenone, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Caprolactam, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	1,1'-Biphenyl, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw
	Atrazine, Solid*	ND	U		39	390	1.00000	ug/Kg	18721		06/26/03 1604	jdw

* In Description = Dry Wgt.

598/1539

1F

599/1539
EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ZR-TP-11 (2-4')

Lab Name: STL-CT Contract:

Lab Code: STLCT Case No.: 203900 SAS No.: SDG No.: 203900

Matrix: (soil/water) SOIL Lab Sample ID: 203900-7

Sample wt/vol: 30.0 (g/mL) G Lab File ID: PO8163

Level: (low/med) LOW Date Received: 06/13/03

% Moisture: 16 decanted: (Y/N) N Date Extracted:06/16/03

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/26/03

Injection Volume: _____(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N Y pH: ___ 8/28/03

Number TICs found: 30 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.22	290	J
2.		UNKNOWN	11.52	340	J
3.		UNKNOWN	11.67	310	J
4.		UNKNOWN	11.85	390	J
5.		UNKNOWN	11.91	300	J
6.		UNKNOWN C20H14 PAH	12.00	370	J
7.		UNKNOWN	12.22	560	J
8.		UNKNOWN	12.25	400	J
9.		UNKNOWN	12.29	400	J
10.	198-55-0	PERYLENE	12.37	680	NJ
11.		UNKNOWN	12.51	400	J
12.		UNKNOWN	12.55	320	J
13.		UNKNOWN	12.60	400	J
14.		UNKNOWN	12.70	300	J
15.		UNKNOWN	12.73	290	J
16.		UNKNOWN	12.79	500	J
17.		UNKNOWN	12.89	500	J
18.		UNKNOWN	12.94	390	J
19.		UNKNOWN	13.05	510	J
20.		UNKNOWN	13.20	520	J
21.		UNKNOWN	13.29	550	J
22.		UNKNOWN C17H14N2O2 ISOMER	13.37	300	J
23.		UNKNOWN	13.60	350	J
24.		UNKNOWN	13.67	300	J
25.		UNKNOWN	13.72	340	J
26.		UNKNOWN	14.00	390	J
27.		UNKNOWN	14.10	350	J
28.		UNKNOWN	14.36	460	J
29.		UNKNOWN	14.55	360	J
30.		UNKNOWN	15.20	320	J

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-TP-08 (5')
Date Sampled.....: 06/10/2003
Time Sampled.....: 16:55
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-8
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
ASTM D-2216												
	% Solids, Solid	65.2			0.10	0.10	1	%	18321		06/13/03 0000	mmw
	% Moisture, Solid	34.8			0.10	0.10	1	%	18321		06/13/03 0000	mmw
OLM04.2	CLP BNA Extractable Organics											
	Phenol, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Bis(2-chloroethyl)ether, Solid*	ND	U	uJ	50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	2-Chlorophenol, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	2-Methylphenol, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	2,2-oxybis (1-chloropropane), Solid*	ND	U	uJ	50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	4-Methylphenol, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	n-Nitroso-di-n-propylamine, Solid*	ND	U	uJ	50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Hexachloroethane, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Nitrobenzene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Isophorone, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	2-Nitrophenol, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	2,4-Dimethylphenol, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Bis(2-chloroethoxy)methane, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	2,4-Dichlorophenol, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Naphthalene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	4-Chloroaniline, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Hexachlorobutadiene, Solid*	ND	U	uJ	50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	4-Chloro-3-methylphenol, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	2-Methylnaphthalene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Hexachlorocyclopentadiene, Solid*	ND	U	uJ	50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	2,4,6-Trichlorophenol, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	2,4,5-Trichlorophenol, Solid*	ND	U		130	1300	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	2-Chloronaphthalene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	2-Nitroaniline, Solid*	ND	U		130	1300	1.00000	ug/Kg	18721		06/17/03 1731	jdw

* In Description = Dry Wgt.

8/20/03

Job Number: 203900

LABORATORY TEST RESULTS

Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO | PROJECT: A03-5605 DEPEW | ATTN: Brian Fischer

Customer Sample ID: ZR-TP-08 (5')
Date Sampled.....: 06/10/2003
Time Sampled.....: 16:55
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-8
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Dimethyl phthalate, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Acenaphthylene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	2,6-Dinitrotoluene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	3-Nitroaniline, Solid*	ND	U		130	1300	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Acenaphthene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	2,4-Dinitrophenol, Solid*	ND	U		130	1300	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	4-Nitrophenol, Solid*	ND	U		130	1300	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Dibenzofuran, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	2,4-Dinitrotoluene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Diethyl phthalate, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	4-Chlorophenyl phenyl ether, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Fluorene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	4-Nitroaniline, Solid*	ND	U		130	1300	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	4,6-Dinitro-2-methylphenol, Solid*	ND	U		130	1300	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	n-Nitrosodiphenylamine, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	4-Bromophenyl phenyl ether, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Hexachlorobenzene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Pentachlorophenol, Solid*	ND	U		130	1300	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Phenanthrene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Anthracene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Carbazole, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Di-n-butyl phthalate, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Fluoranthene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Pyrene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Butyl benzyl phthalate, Solid*	68	J		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	3,3-Dichlorobenzidine, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Benzo(a)anthracene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Chrysene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Bis(2-ethylhexyl)phthalate, Solid*	750		M	50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw

* In Description = Dry Wgt.

1206

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-TP-08 (5')
Date Sampled.....: 06/10/2003
Time Sampled.....: 16:55
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-8
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Di-n-octyl phthalate, Solid*	84	J		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Benzo(b)fluoranthene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Benzo(k)fluoranthene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Benzo(a)pyrene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Indeno(1,2,3-cd)pyrene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Dibenzo(a,h)anthracene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Benzo(ghi)perylene, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Benzaldehyde, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Acetophenone, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Caprolactam, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	1,1'-Biphenyl, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw
	Atrazine, Solid*	ND	U		50	500	1.00000	ug/Kg	18721		06/17/03 1731	jdw

* In Description = Dry Wgt.

603/1539
EPA SAMPLE NO.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ZR-TP-08 (5')

Lab Name: STL-CT Contract:

Lab Code: STLCT Case No.: 203900 SAS No.: SDG No.: 203900

Matrix: (soil/water) SOIL Lab Sample ID: 203900-8

Sample wt/vol: 30.5 (g/mL) G Lab File ID: QO9401

Level: (low/med) LOW Date Received: 06/13/03

% Moisture: 35 decanted: (Y/N) N Date Extracted: 06/16/03

Concentrated Extract Volume: 500 (uL) Date Analyzed: 06/17/03

Injection Volume: _____(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) ~~N~~ Y pH: ___

8/20/03

Number TICs found: 30 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	12.06	170	J
2.		UNKNOWN	12.15	260	J
3.		UNKNOWN	12.21	180	J
4.		UNKNOWN	12.29	210	J
5.		UNKNOWN	12.33	210	J
6.		UNKNOWN	12.37	190	J
7.		UNKNOWN	12.41	180	J
8.		UNKNOWN	12.49	170	J
9.		UNKNOWN	12.52	150	J
10.		UNKNOWN	12.56	210	J
11.		UNKNOWN	12.60	310	J
12.		UNKNOWN	12.67	170	J
13.		UNKNOWN	12.69	190	J
14.		UNKNOWN	12.86	170	J
15.		UNKNOWN	13.07	180	J
16.		UNKNOWN	13.11	220	J
17.		UNKNOWN	13.21	180	J
18.		UNKNOWN	13.34	150	J
19.		UNKNOWN	13.38	170	J
20.		UNKNOWN	13.44	190	J
21.		UNKNOWN	13.52	180	J
22.		UNKNOWN	13.57	150	J
23.		UNKNOWN	13.64	180	J
24.		UNKNOWN	13.80	210	J
25.		UNKNOWN	13.99	150	J
26.		UNKNOWN	14.20	160	J
27.		UNKNOWN	14.33	150	J
28.		UNKNOWN	14.47	440	J
29.		UNKNOWN	15.30	280	J
30.		UNKNOWN	15.58	160	J

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-TP-07 (7')
Date Sampled.....: 06/10/2003
Time Sampled.....: 11:45
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-9
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
ASTM D-2216												
	% Solids, Solid	47.3			0.10	0.10	1	%	18321		06/13/03 0000	mmw
	% Moisture, Solid	52.7			0.10	0.10	1	%	18321		06/13/03 0000	mmw
OLM04.2	CLP BNA Extractable Organics											
	Phenol, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Bis(2-chloroethyl)ether, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	2-Chlorophenol, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	2-Methylphenol, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	2,2-oxybis (1-chloropropane), Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	4-Methylphenol, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	n-Nitroso-di-n-propylamine, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Hexachloroethane, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Nitrobenzene, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Isophorone, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	2-Nitrophenol, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	2,4-Dimethylphenol, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Bis(2-chloroethoxy)methane, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	2,4-Dichlorophenol, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Naphthalene, Solid*	610	J		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	4-Chloroaniline, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Hexachlorobutadiene, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	4-Chloro-3-methylphenol, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	2-Methylnaphthalene, Solid*	350	J		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Hexachlorocyclopentadiene, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	2,4,6-Trichlorophenol, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	2,4,5-Trichlorophenol, Solid*	ND	U		170	1700	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	2-Chloronaphthalene, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	2-Nitroaniline, Solid*	ND	U		170	1700	1.00000	ug/Kg	18721		06/17/03 1758	jdw

* In Description = Dry Wgt.

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0000047

L A B O R A T O R Y   T E S T   R E S U L T S

Job Number: 203900 | Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO | PROJECT: A03-5605 DEPEW | ATTN: Brian Fischer

Customer Sample ID: ZR-TP-07 (7')
Date Sampled......: 06/10/2003
Time Sampled......: 11:45
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-9
Date Received.......: 06/13/2003
Time Received.......: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Dimethyl phthalate, Solid*	ND	U	UJ	69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Acenaphthylene, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	2,6-Dinitrotoluene, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	3-Nitroaniline, Solid*	ND	U		170	1700	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Acenaphthene, Solid*	360	J	J	69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	2,4-Dinitrophenol, Solid*	ND	U	UJ	170	1700	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	4-Nitrophenol, Solid*	ND	U		170	1700	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Dibenzofuran, Solid*	380	J	J	69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	2,4-Dinitrotoluene, Solid*	ND	U	UJ	69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Diethyl phthalate, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	4-Chlorophenyl phenyl ether, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Fluorene, Solid*	470	J	J	69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	4-Nitroaniline, Solid*	ND	U	UJ	170	1700	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	4,6-Dinitro-2-methylphenol, Solid*	ND	U		170	1700	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	n-Nitrosodiphenylamine, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	4-Bromophenyl phenyl ether, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Hexachlorobenzene, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Pentachlorophenol, Solid*	ND	U		170	1700	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Phenanthrene, Solid*	3700		J	69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Anthracene, Solid*	710			69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Carbazole, Solid*	580	J		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Di-n-butyl phthalate, Solid*	ND	U	UJ	69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Fluoranthene, Solid*	3800		J	69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Pyrene, Solid*	2300			69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Butyl benzyl phthalate, Solid*	ND	U	UJ	69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	3,3-Dichlorobenzidine, Solid*	ND	U	UJ	69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Benzo(a)anthracene, Solid*	1200		J	69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Chrysene, Solid*	1400			69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Bis(2-ethylhexyl)phthalate, Solid*	~~14000~~ 12000		D	69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw

* In Description = Dry Wgt.

8/28/03

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LABORATORY TEST RESULTS

Job Number: 203900

Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO | PROJECT: A03-5605 DEPEW | ATTN: Brian Fischer

Customer Sample ID: ZR-TP-07 (7')
Date Sampled.....: 06/10/2003
Time Sampled.....: 11:45
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-9
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Di-n-octyl phthalate, Solid*	ND	U	UJ	69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Benzo(b)fluoranthene, Solid*	2500		J	69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Benzo(k)fluoranthene, Solid*	ND	U	UJ	69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Benzo(a)pyrene, Solid*	1300		H J	69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Indeno(1,2,3-cd)pyrene, Solid*	460	J		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Dibenzo(a,h)anthracene, Solid*	230	J		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Benzo(ghi)perylene, Solid*	360	J		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Benzaldehyde, Solid*	ND	U	UJ	69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Acetophenone, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Caprolactam, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	1,1'-Biphenyl, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw
	Atrazine, Solid*	ND	U		69	690	1.00000	ug/Kg	18721		06/17/03 1758	jdw

* In Description = Dry Wgt.

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611/1539
EPA SAMPLE NO.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ZR-TP-07 (7')

Lab Name: STL-CT Contract:

Lab Code: STLCT Case No.: 203900 SAS No.: SDG No.: 203900

Matrix: (soil/water) SOIL Lab Sample ID: 203900-9

Sample wt/vol: 30.4 (g/mL) G Lab File ID: QO9402

Level: (low/med) LOW Date Received: 06/13/03

% Moisture: 53 decanted: (Y/N) N Date Extracted: 06/16/03

Concentrated Extract Volume: 500 (uL) Date Analyzed: 06/17/03

Injection Volume: _____(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) ~~N~~ Y pH: ___

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Number TICs found: 30 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	69009-90-1	1,1'-BIPHENYL, BIS(1-METHYLE	10.10	6400	NJ
2.	7343-06-8	PHENANTHRENE, 3,4,5,6-TETRAM	10.57	1500	NJ
3.		UNKNOWN	11.99	710	J
4.		UNKNOWN C20H34O ISOMER	12.30	650	J
5.		UNKNOWN	12.58	520	J
6.		UNKNOWN	12.65	760	J
7.	198-55-0	PERYLENE	12.71	830	NJ
8.		UNKNOWN	12.92	580	J
9.		UNKNOWN	12.96	560	J
10.		UNKNOWN	13.02	730	J
11.		UNKNOWN	13.19	540	J
12.		UNKNOWN	13.26	540	J
13.		UNKNOWN	13.29	730	J
14.		UNKNOWN	13.38	1200	J
15.		UNKNOWN	13.44	830	J
16.	1000210-38-4	17-(1,5-DIMETHYLHEXYL)-10,13	13.55	940	NJ
17.	80-97-7	CHOLESTANOL	13.60	620	NJ
18.		UNKNOWN	13.75	1200	J
19.		UNKNOWN	13.91	1000	J
20.	1000214-19-8	STIGMASTA-5,22-DIEN-3-OL	14.21	1100	NJ
21.		UNKNOWN	14.28	520	J
22.	83-46-5	.BETA.-SITOSTEROL	14.53	2000	NJ
23.		UNKNOWN C28H50O ISOMER	14.60	1100	J
24.		UNKNOWN	14.73	680	J
25.		UNKNOWN	14.76	810	J
26.		UNKNOWN	14.86	770	J
27.		UNKNOWN	14.98	1200	J
28.		UNKNOWN C15H22O ISOMER	15.14	890	J
29.	1058-61-3	STIGMAST-4-EN-3-ONE	15.37	520	NJ
30.		UNKNOWN	16.15	680	J

LABORATORY TEST RESULTS

Job Number: 203900

Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO | PROJECT: A03-5605 DEPEW | ATTN: Brian Fischer

Customer Sample ID: ZR-TP-07 (7')
Date Sampled.....: 06/10/2003
Time Sampled.....: 11:45
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-9
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
OLM04.2	CLP BNA Extractable Organics											
	Phenol, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Bis(2-chloroethyl)ether, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	2-Chlorophenol, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	2-Methylphenol, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	2,2-oxybis (1-chloropropane), Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	4-Methylphenol, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	n-Nitroso-di-n-propylamine, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Hexachloroethane, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Nitrobenzene, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Isophorone, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	2-Nitrophenol, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	2,4-Dimethylphenol, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Bis(2-chloroethoxy)methane, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	2,4-Dichlorophenol, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Naphthalene, Solid*	700	J		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	4-Chloroaniline, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Hexachlorobutadiene, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	4-Chloro-3-methylphenol, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	2-Methylnaphthalene, Solid*	490	J		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Hexachlorocyclopentadiene, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	2,4,6-Trichlorophenol, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	2,4,5-Trichlorophenol, Solid*	ND	U		690	6900	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	2-Chloronaphthalene, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	2-Nitroaniline, Solid*	ND	U		690	6900	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Dimethyl phthalate, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Acenaphthylene, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	2,6-Dinitrotoluene, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	3-Nitroaniline, Solid*	ND	U		690	6900	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 203900

Date: 06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO | PROJECT: A03-5605 DEPEW | ATTN: Brian Fischer

Customer Sample ID: ZR-TP-07 (7')
Date Sampled.....: 06/10/2003
Time Sampled.....: 11:45
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-9
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Acenaphthene, Solid*	450	J		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	2,4-Dinitrophenol, Solid*	ND	U		690	6900	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	4-Nitrophenol, Solid*	ND	U		690	6900	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Dibenzofuran, Solid*	430	J		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	2,4-Dinitrotoluene, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Diethyl phthalate, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	4-Chlorophenyl phenyl ether, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Fluorene, Solid*	640	J		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	4-Nitroaniline, Solid*	ND	U		690	6900	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	4,6-Dinitro-2-methylphenol, Solid*	ND	U		690	6900	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	n-Nitrosodiphenylamine, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	4-Bromophenyl phenyl ether, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Hexachlorobenzene, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Pentachlorophenol, Solid*	ND	U		690	6900	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Phenanthrene, Solid*	3200			280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Anthracene, Solid*	820	J		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Carbazole, Solid*	410	J		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Di-n-butyl phthalate, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Fluoranthene, Solid*	3100			280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Pyrene, Solid*	2800			280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Butyl benzyl phthalate, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	3,3-Dichlorobenzidine, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Benzo(a)anthracene, Solid*	1600	J		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Chrysene, Solid*	1300	J		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Bis(2-ethylhexyl)phthalate, Solid*	12000		H	280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Di-n-octyl phthalate, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Benzo(b)fluoranthene, Solid*	1400	J	M	280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Benzo(k)fluoranthene, Solid*	1100	J	M	280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Benzo(a)pyrene, Solid*	1300	J		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw

* In Description = Dry Wgt.

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LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-TP-07 (7')
Date Sampled.....: 06/10/2003
Time Sampled.....: 11:45
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-9
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Indeno(1,2,3-cd)pyrene, Solid*	820	J		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Dibenzo(a,h)anthracene, Solid*	390	J		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Benzo(ghi)perylene, Solid*	720	J		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Benzaldehyde, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Acetophenone, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Caprolactam, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	1,1'-Biphenyl, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw
	Atrazine, Solid*	ND	U		280	2800	4.00000	ug/Kg	18721	DL	06/20/03 1923	jdw

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* In Description = Dry Wgt.

607/1539
EPA SAMPLE NO.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ZR-TP-07 (7')DL

Lab Name: STL-CT Contract:

Lab Code: STLCT Case No.: 203900 SAS No.: SDG No.: 203900

Matrix: (soil/water) SOIL Lab Sample ID: 203900-9DL

Sample wt/vol: 30.4 (g/mL) G Lab File ID: P8052

Level: (low/med) LOW Date Received: 06/13/03

% Moisture: 53 decanted: (Y/N) N Date Extracted:06/16/03

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/20/03

Injection Volume: _____(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 30 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	5989-54-8	CYCLOHEXENE, 1-METHYL-4-(1-	4.53	1300	NJD
2.		UNKNOWN	9.46	1400	JD
3.		UNKNOWN C18H22 ISOMER	10.09	2400	JD
4.	7396-38-5	PHENANTHRENE, 2,4,5,7-TETRA	10.57	5500	NJD
5.		UNKNOWN C15H26O ISOMER	12.26	1400	JD
6.		UNKNOWN	12.56	1000	JD
7.	198-55-0	PERYLENE	12.74	1300	NJD
8.		UNKNOWN	13.23	1800	JD
9.		UNKNOWN	13.29	1400	JD
10.		UNKNOWN	13.42	1400	JD
11.		UNKNOWN	13.52	2600	JD
12.		UNKNOWN	13.72	1800	JD
13.		UNKNOWN	13.78	1600	JD
14.		UNKNOWN	14.17	3500	JD
15.		UNKNOWN	14.26	2100	JD
16.		UNKNOWN	14.28	1500	JD
17.		UNKNOWN	14.32	2000	JD
18.		UNKNOWN	14.40	1700	JD
19.		UNKNOWN	14.47	2600	JD
20.		UNKNOWN	14.57	4500	JD
21.		UNKNOWN	14.66	5600	JD
22.		UNKNOWN	14.78	2900	JD
23.		UNKNOWN	14.93	6800	JD
24.		UNKNOWN	15.05	1300	JD
25.		UNKNOWN	15.17	1600	JD
26.		UNKNOWN	15.21	2000	JD
27.		UNKNOWN	15.30	3600	JD
28.		UNKNOWN	15.58	1400	JD
29.		UNKNOWN	16.09	6400	JD
30.		UNKNOWN	16.52	1400	JD

6/28/03

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-SS-11
Date Sampled.....: 06/10/2003
Time Sampled.....: 13:05
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-10
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
ASTM D-2216												
	% Solids, Solid	63.0			0.10	0.10	1	%	18321		06/13/03 0000	mmw
	% Moisture, Solid	37.0			0.10	0.10	1	%	18321		06/13/03 0000	mmw
OLM04.2	CLP BNA Extractable Organics											
	Phenol, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Bis(2-chloroethyl)ether, Solid*	ND	U	uJ	52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	2-Chlorophenol, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	2-Methylphenol, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	2,2-oxybis (1-chloropropane), Solid*	ND	U	uJ	52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	4-Methylphenol, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	n-Nitroso-di-n-propylamine, Solid*	ND	U	uJ	52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Hexachloroethane, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Nitrobenzene, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Isophorone, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	2-Nitrophenol, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	2,4-Dimethylphenol, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Bis(2-chloroethoxy)methane, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	2,4-Dichlorophenol, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Naphthalene, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	4-Chloroaniline, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Hexachlorobutadiene, Solid*	ND	U	uJ	52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	4-Chloro-3-methylphenol, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	2-Methylnaphthalene, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Hexachlorocyclopentadiene, Solid*	ND	U	uJ	52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	2,4,6-Trichlorophenol, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	2,4,5-Trichlorophenol, Solid*	ND	U		130	1300	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	2-Chloronaphthalene, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	2-Nitroaniline, Solid*	ND	U		130	1300	1.00000	ug/Kg	18721		06/17/03 1824	jdw

* In Description = Dry Wgt.

8/2/03
2

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-SS-11
Date Sampled.....: 06/10/2003
Time Sampled.....: 13:05
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-10
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Dimethyl phthalate, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Acenaphthylene, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	2,6-Dinitrotoluene, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	3-Nitroaniline, Solid*	ND	U		130	1300	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Acenaphthene, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	2,4-Dinitrophenol, Solid*	ND	U		130	1300	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	4-Nitrophenol, Solid*	ND	U	WJ	130	1300	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Dibenzofuran, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	2,4-Dinitrotoluene, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Diethyl phthalate, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	4-Chlorophenyl phenyl ether, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Fluorene, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	4-Nitroaniline, Solid*	ND	U		130	1300	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	4,6-Dinitro-2-methylphenol, Solid*	ND	U		130	1300	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	n-Nitrosodiphenylamine, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	4-Bromophenyl phenyl ether, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Hexachlorobenzene, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Pentachlorophenol, Solid*	ND	U		130	1300	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Phenanthrene, Solid*	460	J		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Anthracene, Solid*	120	J		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Carbazole, Solid*	91	J		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Di-n-butyl phthalate, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Fluoranthene, Solid*	860			52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Pyrene, Solid*	600			52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Butyl benzyl phthalate, Solid*	ND	U	WJ	52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	3,3-Dichlorobenzidine, Solid*	ND	U	WJ	52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Benzo(a)anthracene, Solid*	410	J		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Chrysene, Solid*	380	J		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Bis(2-ethylhexyl)phthalate, Solid*	200	J		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw

* In Description = Dry Wgt.

6/28/3

LABORATORY TEST RESULTS

Job Number: 203900 Date:06/27/2003

CUSTOMER: SEVERN TRENT LABORATORIES-BUFFALO PROJECT: A03-5605 DEPEW ATTN: Brian Fischer

Customer Sample ID: ZR-SS-11
Date Sampled.....: 06/10/2003
Time Sampled.....: 13:05
Sample Matrix.....: Soil

Laboratory Sample ID: 203900-10
Date Received.....: 06/13/2003
Time Received.....: 09:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
	Di-n-octyl phthalate, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Benzo(b)fluoranthene, Solid*	670			52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Benzo(k)fluoranthene, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Benzo(a)pyrene, Solid*	330	J		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Indeno(1,2,3-cd)pyrene, Solid*	160	J		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Dibenzo(a,h)anthracene, Solid*	88	J		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Benzo(ghi)perylene, Solid*	160	J		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Benzaldehyde, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Acetophenone, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Caprolactam, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	1,1'-Biphenyl, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw
	Atrazine, Solid*	ND	U		52	520	1.00000	ug/Kg	18721		06/17/03 1824	jdw

* In Description = Dry Wgt.

615/1539
EPA SAMPLE NO.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ZR-SS-11

Lab Name: STL-CT Contract:

Lab Code: STLCT Case No.: 203900 SAS No.: SDG No.: 203900

Matrix: (soil/water) SOIL Lab Sample ID: 203900-10

Sample wt/vol: 30.0 (g/mL) G Lab File ID: QO9403

Level: (low/med) LOW Date Received: 06/13/03

% Moisture: 37 decanted: (Y/N) N Date Extracted: 06/16/03

Concentrated Extract Volume: 500 (uL) Date Analyzed: 06/17/03

Injection Volume: _____ (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) ~~N~~ Y pH: ___

8/20/03

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.26	310	J
2.		UNKNOWN	11.56	280	J
3.		UNKNOWN	11.61	290	J
4.		UNKNOWN	11.77	370	J
5.		UNKNOWN	11.83	340	J
6.		UNKNOWN C20H42O ISOMER	11.89	710	J
7.		UNKNOWN	11.93	270	J
8.		UNKNOWN	11.99	460	J
9.		UNKNOWN	12.07	320	J
10.		UNKNOWN	12.12	350	J
11.		UNKNOWN	12.16	280	J
12.	1000190-46-4	3,7-DIMETHYL-OCTA-1,6-DIENE	12.29	640	NJ
13.		UNKNOWN	12.34	240	J
14.		UNKNOWN	12.38	290	J
15.		UNKNOWN C20H12 PAH	12.54	290	J
16.		UNKNOWN	12.58	320	J
17.		UNKNOWN	12.61	350	J
18.		UNKNOWN C20H12 PAH	12.70	440	J
19.		UNKNOWN	12.90	400	J
20.		UNKNOWN	12.95	320	J
21.		UNKNOWN	13.00	380	J
22.		UNKNOWN	13.12	360	J
23.		UNKNOWN	13.18	310	J
24.		UNKNOWN	13.44	360	J
25.		UNKNOWN	13.53	370	J
26.		UNKNOWN	13.67	230	J
27.		UNKNOWN	13.75	310	J
28.		UNKNOWN	13.87	470	J
29.		UNKNOWN	14.18	490	J
30.		UNKNOWN	14.49	340	J

BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-GW-01

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: A03-5602

Matrix (soil/water): WATER Lab Sample ID: AD327847

Level (low/med): LOW Date Received: 6/10/03

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	3860		E	P

J

6/24/03

Color Before: GRAY Clarity Before: CLOUDY Texture: HEAVY

Color After: GRAY Clarity After: CLOUDY Artifacts:

Comments:

L BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-GW-01F

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: A03-5602

Matrix (soil/water): WATER Lab Sample ID: A3560203

Level (low/med): LOW Date Received: 6/10/03

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7439-92-1	Lead	185		E	P	J

8/20/03

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

.L BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-GW-09

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: A03-5602

Matrix (soil/water): WATER Lab Sample ID: AD327846

Level (low/med): LOW Date Received: 6/10/03

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7439-92-1	Lead	8660		E	P	J

Color Before: GRAY Clarity Before: CLOUDY Texture: MEDIUM

Color After: GRAY Clarity After: CLOUDY Artifacts:

Comments:

L BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-GW-09F

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: A03-5602

Matrix (soil/water): WATER Lab Sample ID: A3560201

Level (low/med): LOW Date Received: 6/10/03

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	7030		E	P

J
8/20/03

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

'L BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-GW-11

: ntract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: A03-5602

: trix (soil/water): WATER Lab Sample ID: AD327848

Level (low/med): LOW Date Received: 6/10/03

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	1110		E	P

R

8/28/03

Color Before: GRAY Clarity Before: CLOUDY Texture: MEDIUM

Color After: GRAY Clarity After: CLOUDY Artifacts:

Comments:

PANAMERICAN ENVIRONMENTAL INC.

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-GW-11F

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: A03-5602

Matrix (soil/water): WATER Lab Sample ID: A3560205

Level (low/med): LOW Date Received: 6/10/03

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7439-92-1	Lead	2630		E	P	R

8/28/03

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

TL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-SED-01

ntract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: A03-6689

trix (soil/water): SOIL Lab Sample ID: AD335535

Level (low/med): LOW Date Received: 7/15/03

olids: 87

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	828		*	P

5

8/28/03

lor Before: MIX Clarity Before: N/A Texture: GRAVEL

Color After: YELLOW Clarity After: CLDY/FI Artifacts:

mments:

TL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-SED-02

ntract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: A03-6689

trix (soil/water): SOIL Lab Sample ID: AD334298

Level (low/med): LOW Date Received: 7/15/03

Solids: 86

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	27.7			P

J

8/29/12

lor Before: MIX Clarity Before: N/A Texture: GRAVEL

Color After: YELLOW Clarity After: CLDY/FI Artifacts:

Comments:

TL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-SED-03

ntract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: A03-6689

trix (soil/water): SOIL Lab Sample ID: AD334299

Level (low/med): LOW Date Received: 7/15/03

Solids: 87

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	130			P

J

8/28/03

lor Before: MIX Clarity Before: N/A Texture: GRAVEL

Color After: YELLOW Clarity After: CLDY/FI Artifacts:

mments:

TL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-SED-04

ontract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: A03-6689

atrix (soil/water): SOIL Lab Sample ID: AD334300

Level (low/med): LOW Date Received: 7/15/03

Solids: 75

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	9.4			P

J
8/29/03

olor Before: MIX Clarity Before: N/A Texture: GRAVEL

Color After: YELLOW Clarity After: CLDY/FI Artifacts:

omments:

TL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

ZR-SED-05

ontract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: A03-6689

trix (soil/water): SOIL Lab Sample ID: AD334301

vel (low/med): LOW Date Received: 7/15/03

Solids: 90

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-92-1	Lead	4.7			P

J
slight

olor Before: MIX Clarity Before: N/A Texture: GRAVEL

Color After: YELLOW Clarity After: CLR/FIL Artifacts:

omments:

ATTACHMENT B

SUPPORT DOCUMENTATION

NON-CONFORMANCE SUMMARY

Job#: A03-6226

STL Project#: NY3A9072
Site Name: Panamerican Environmental, Inc.

General Comments

The enclosed data have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A03-6226
Sample Cooler(s) were received at the following temperature(s); 4.4 °C
All samples were received in good condition.

Metals Data

The analyte Lead was detected in the Extractor Blank at a level above the project established reporting limit. However, all samples had levels of Lead greater than ten times that of the Extractor Blank value, therefore, no corrective action was necessary.

The recovery of sample ZR-SS-12 MS and ZR-SS-12 MSD fell below the quality control limits for Lead. The sample result was more than four times greater than the spike added, therefore, no qualifiers were required. The LCS was acceptable.

****

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Brian J. Fischer
Project Manager

7-16-03
Date

Chain of Custody Record

SEVERN TRENT SERVICES — Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client	PANAMERICAN ENVIRONMENTAL
Address	2390 CLINTON ST.
City	BUFFALO
State	NY
Zip Code	14227
Project Name and Location (State)	VILLAGE OF DEPEW / ZUBACK RD. (DPW)
Contract/Purchase Order/Quote No.	NY3A9072 I
Project Manager	JOHN BERRY
Telephone Number (Area Code)/Fax Number	(716) 821-1650 / 821-1607
Site Contact	
Lab Contact	
Carrier/Waybill Number	
Date	06.10.03
Lab Number	
Chain of Custody Number	112416
Page	3 of 3

Special Instructions/Conditions of Receipt: ~~*HOLD ALL~~

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Matrix: Aqueous	Matrix: Sed.	Matrix: Soil		Containers & Preservatives: Unpres.	H_2SO_4	HNO_3	HCl	NaOH	ZnAc/NaOH	Analysis: TCLP/METALS	Analysis: EPA 8270C 3ii Semi Volatiles	Analysis: TOTAL LEAD
ZR-SS-11	06.10.03	1305				X		X						X	X	
ZR-SS-09	↓	1510				X		X								X
ZR-TP-03 (4.5-5.5' AECS)	↓	1040				X		X								X
ZR-SS-08	↓	1645				X		X								X
ZR-SS-12	↓	1350				X		X								X
ZR-SS-03	↓	1020				X		X								X
ZR-SS-07	↓	1125				X		X								X

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other______

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By: [signature]	06/10/03	1910	1. Received By: [signature] STL	6-10-03	19:30
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments: 4.4°C

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

PANAMERICAN ENVIRONMENTAL

-9-

ICP SERIAL DILUTIONS

SAMPLE NO.

ZR-SS-12L

ontract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: A03-6226

atrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Lead	75733.65		90852.00		20.0	E	P

NON-CONFORMANCE SUMMARY

Job#: A03-5603,A03-5605

STL Project#: NY3A9072
SDG#: 5603
Site Name: Panamerican Environmental, Inc.

General Comments

The enclosed data have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A03-5603
Sample Cooler(s) were received at the following temperature(s); 4.4 °C
All samples were received in good condition.
A03-5605
Sample Cooler(s) were received at the following temperature(s); 4.4 °C
All samples were received in good condition.

GC/MS Semivolatile Data

Due to an instrument problem, samples for Semivolatile analysis were subcontracted to STL Connecticut. The analytical results may be found in Appendix A of the report.

Metals Data

The recovery of sample ZR-TP-02 (3.5-5.5') MS fell below quality control limits for Antimony, Arsenic, Cadmium, Chromium, Copper, Lead, Manganese, and Zinc. The recovery of sample ZR-TP-02 (3.5-5.5') SD fell below quality control limits for Antimony, Cadmium, Chromium, Copper, Manganese, Nickel, and Zinc. The relative percent difference between samples ZR-TP-02 (3.5-5.5') MS and ZR-TP-02 (3.5-5.5) SD exceeded quality control criteria for Cadmium and Iron. The LCS was acceptable for all elements.

The recovery of sample ZR-TP-02 (3.5-5.5') MS and ZR-TP-02 (3.5-5.2') SD fell below quality control limits for Iron. The sample result is more than four times greater than the spike added, therefore, no qualifiers are needed. The LCS was acceptable.

The relative percent difference between sample ZR-TP-02 (3.5-5.5') and ZR-TP-02 (3.5-5.5') MD exceeded quality control criteria for Arsenic, Barium, Chromium, Iron, Manganese, Nickel, and Zinc. The LCS was acceptable for all elements.

The following elements are not contained in the CLP spiking solution in sample ZR-TP-02 (3.5-5.5') MS and ZR-TP-02 (3.5-5.5') SD: Aluminum, Calcium, Magnesium, Potassium, and Sodium.

Wet Chemistry Data

The LCS for Cyanide analysis was above control limits. However, since target analytes were non-detect in the samples and the high recoveries would yield a high bias, no further corrective action was necessary.

****

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Steve L Mah for BJF

Brian J. Fischer
Project Manager

7/8/03

Date

Client Sample ID	Lab Sample ID	Parameter (Inorganic)/Method (Organic)	Dilution	Code
ZR-TP-02 (3.5-5.5')	A3560301	Iron - Total	10.00	008
ZR-TP-02 (3.5-5.5')	A3560301MD	Iron - Total	10.00	008
ZR-TP-02 (3.5-5.5')	A3560301MS	Iron - Total	10.00	008
ZR-TP-02 (3.5-5.5')	A3560301SD	Iron - Total	10.00	008
ZR-SS-05	A3560305	Zinc - Total	5.00	008
ZR-TP-09 (8')	A3560308	Iron - Total	10.00	008
ZR-TP-08 (5')	A3560311	Calcium - Total	10.00	008
ZR-TP-03 (4.5-5.5')	A3560315	Lead - Total	5.00	008
ZR-TP-03 (5.5-9')	A3560503DL	EPA SVOA	10.00	008
ZR-TP-09 (8')	A3560506DL	EPA SVOA	5.00	008
ZR-TP-07 (7')	A3560509DL	EPA SVOA	4.00	008

Dilution Code Definition:

002 - sample matrix effects
003 - excessive foaming
004 - high levels of non-target compounds
005 - sample matrix resulted in method non-compliance for an Internal Standard
006 - sample matrix resulted in method non-compliance for Surrogate
007 - nature of the TCLP matrix
008 - high concentration of target analyte(s)
009 - sample turbidity
010 - sample color
011 - insufficient volume for lower dilution
012 - sample viscosity
013 - other

Chain of Custody Record

TRENT SERVICES — Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client	Project Manager	Date	Chain of Custody Number
PANAMERICAN ENVIRONMENTAL	JOHN BERRY	06.10.2003	112417
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 3**
2390 CLINTON ST.	(716) 821-1650 / 821-1607		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
BUFFALO / NY / 14227			
Project Name and Location (State)	**Carrier/Waybill Number**		
ZUBRICK Rd / VILLAGE OF DEPEW (DPW)			
Contract/Purchase Order/Quote No.			
NY3A9072 1			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Other	Analysis: CLP-M / METALS	EPA 8LHD 3.1 SemVolatiles	TOTAL LEAD
ZR-GW-09 F	06.10.03	1530		X					X				X	X		X
ZR-GW-09	"	"		X					X				X	X		X
ZR-GW-01F		0835		X					X				X	X		X
ZR-GW-01		"		X					X				X	X		X
ZR-GW-11F		1320		X					X				X	X		X
ZR-GW-11		"		X					X				X	X		X
ZR-TP-02 (3.5-5.5' BGS)		0930				X	X								X	X
ZR-TP-02 (3.5-5.5' BGS)		0930				X	X							X		
ZR-TP-12 (7-7.5' BGS)		1410				X	X							X		
ZR-TP-12 (7-7.5' BGS)		1410				X	X								X	X
ZR-SS-02		0915				X	X							X		
ZR-SS-02		0915				X	X								X	

Special Instructions/ Conditions of Receipt

* ~~HOLD ALL~~

LAB TO FILTER
REMAIN UNFILTERED
LAB TO FILTER
REMAIN UNFILTERED
LAB TO FILTER
REMAIN UNFILTERED

* All "~~XS~~" crossed out as per Client instructions - Login Full X's Only.

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☒ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	06/10/03	1910	1. Received By STL	6-10-03	19:30
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

4.4°C

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

TRENT SERVICES — Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client	Project Manager	Date	Chain of Custody Number
PANAMERICAN ENVIRONMENTAL	JOHN BERRY	06.10.2003	112415
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 2 of 3**
2390 CLINTON ST.	716-821-1650 / 821-1607		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
~~DEPEW~~ BUFFALO / NY / 14043			
Project Name and Location (State)	**Carrier/Waybill Number**		
ZUBRICK RD. / VILLAGE OF DEPEW - DPW			
Contract/Purchase Order/Quote No.			
NY3A9072 1			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H_2SO_4	HNO_3	HCl	NaOH	ZnAc/NaOH	Analysis: CLP-M/METALS	EPA 0LM03.1 SemiVolatiles	TOTAL LEAD	Special Instructions/ Conditions of Receipt
ZR-TP-03 (5.5-9' BGS)	06.10.03	1045				X	X						X		X	* Login all except (~~X~~) as per Client instructions
ZR-TP-03 (5.5-9' BGS)		1045				X	X							X		
ZR-SS-05		1600				X	X						X			
ZR-SS-05		1600				X	X							X		
ZR-TP-01 (4-5' BGS)		0845				X	X						* ~~X~~		X	
ZR-TP-01 (4-5' BGS)		0845				X	X							~~X~~		
ZR-SS-01		0825				X	X						X	X		
ZR-TP-09 (8' BGS)		1525				X	X						X	X	X	
ZR-TP-05 (8' BGS)		1615				X	X						~~X~~	~~X~~	X	
ZR-TP-11 (2-4' BGS)		1320				X	X						X	X	X	
ZR-TP-08 (5' BGS)		1655				X	X						X	X	X	
ZR-TP-07 (7' BGS)		1145				X	X						X	X	X	

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Justin J. Ryan	06/10/03	1910	1. Received By: STL	6-10-03	19:30
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

4.4°C

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Chain of Custody Record

Severn Trent Laboratories, Inc.

STL-4124 (0901)

Client	Project Manager	Date	Chain of Custody Number
PANAMERICAN ENVIRONMENTAL	JOHN BERRY	06.10.03	112416

Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page
2390 CLINTON ST.	(716) 821-1650 / 821-1607		Page 3 of 3

City	State	Zip Code	Site Contact	Lab Contact
BUFFALO	NY	14227		

Project Name and Location (State): VILLAGE OF DEPEW / ZUBRICK Rd. (DPW)

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.: NY3A 9072 1

Analysis (Attach list if more space is needed)

Special Instructions/ Conditions of Receipt: ~~*HOLD ALL~~

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Soil	Containers & Preservatives: Unpres.	CLP-M/METALS	EPA OLM03.1 SEMI VOLATILES	TOTAL LEAD
ZR-SS-11	06.10.03	1305	X	X	X	X	
~~[illegible]~~ ZR-SS-09	↓	1510	X	X			X
ZR-TP-03 (4.5-5.5' BGS)	↓	1040	X	X			X
ZR-SS-08	↓	1645	X	X			X
ZR-SS-12	↓	1350	X	X			X
ZR-SS-03	↓	1020	X	X			X
ZR-SS-07	↓	1125	X	X			X

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other____

QC Requirements (Specify):

	Date	Time			Date	Time
1. Relinquished By: [illegible signature]	06/10/03	1910	1. Received By: [illegible signature] STL		6-10-03	19:30
2. Relinquished By			2. Received By			
3. Relinquished By			3. Received By			

Comments: 4.4°C

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-2B-

CRDL STANDARD FOR AA AND ICP

Contract: NY02-457

Lab Code: STLBFLO Case No.: _____ SAS No.: _____ SDG No.: 5603

AA CRDL Standard Source: _____

ICP CRDL Standard Source: VHG

Concentration Units: ug/L

(3)

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum				400.0			422.70	105.7
Antimony				120.0			102.12	85.1
Arsenic				30.0			30.08	100.3
Barium				400.0			403.06	100.8
Beryllium				10.0			10.38	103.8
Cadmium				1.0			1.22	122.0
Calcium				1000.0			1052.60	105.3
Chromium				20.0			19.60	98.0
Cobalt				100.0			99.42	99.4
Copper				50.0			49.82	99.6
Iron				200.0			214.42	107.2
Lead				20.0			22.14	110.7
Magnesium				1000.0			1015.86	101.6
Manganese				30.0			30.64	102.1
Nickel				80.0			83.42	104.3
Potassium				1000.0			1097.50	109.8
Selenium				70.0			65.80	94.0
Silver				20.0			21.44	107.2
Sodium				1000.0			819.28	81.9
Vanadium				100.0			100.66	100.7
Zinc				120.0			148.38	123.6

TL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-2B-

CRDL STANDARD FOR AA AND ICP

Contract: NY02-457

Lab Code: STLBFLO Case No.: _____ SAS No.: _____ SDG No.: 5603

AA CRDL Standard Source: _____

ICP CRDL Standard Source: VHG

Concentration Units: ug/L (4)

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum				400.0			459.65	114.9
Antimony				120.0			94.36	78.6
Arsenic				30.0			30.39	101.3
Barium				400.0			382.87	95.7
Beryllium				10.0			9.91	99.1
Cadmium				1.0			1.28	128.0
Calcium				1000.0			1059.21	105.9
Chromium				20.0			19.54	97.7
Cobalt				100.0			96.51	96.5
Copper				50.0			48.20	96.4
Iron				200.0			353.37	176.7
Lead				20.0			23.38	116.9
Magnesium				1000.0			1022.48	102.2
Manganese				30.0			31.40	104.7
Nickel				80.0			79.75	99.7
Potassium				1000.0			1135.45	113.5
Selenium				70.0			69.92	99.9
Silver				20.0			20.54	102.7
Sodium				1000.0			950.36	95.0
Vanadium				100.0			99.24	99.2
Zinc				120.0			142.11	118.4

PANAMERICAN ENVIRONMENTAL INC.
-2B-
CRDL STANDARD FOR AA AND ICP

ontract: NY02-457

Lab Code: STLBFLO Case No.: _____ SAS No.: _____ SDG No.: 5603

\ CRDL Standard Source: _____

CP CRDL Standard Source: VHG

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum				400.0			459.12	114.8
Antimony				120.0			107.01	89.2
Arsenic				30.0			31.89	106.3
Barium				400.0			404.48	101.1
Beryllium				10.0			9.88	98.8
Cadmium				1.0			1.23	123.0
Calcium				1000.0			1078.91	107.9
Chromium				20.0			19.30	96.5
Cobalt				100.0			96.48	96.5
Copper				50.0			47.30	94.6
Iron				200.0			323.23	161.6
Lead				20.0			28.89	144.4
Magnesium				1000.0			1019.77	102.0
Manganese				30.0			30.49	101.6
Nickel				80.0			81.22	101.5
Potassium				1000.0			1139.68	114.0
Selenium				70.0			68.44	97.8
Silver				20.0			21.15	105.8
Sodium				1000.0			1071.11	107.1
Vanadium				100.0			99.24	99.2
Zinc				120.0			142.75	119.0

TL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-5A-

SPIKE SAMPLE RECOVERY

SAMPLE NO.

ZR-TP-02 (3.5-5.5') MS

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: 5603

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 77.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Antimony	75 - 125	28.2347		2.1898	B	64.90	40.1	N	P
Arsenic	75 - 125	278.0140		89.0680		259.61	72.8	N	P
Barium	75 - 125	352.2988		89.1070		259.61	101.4		P
Beryllium	75 - 125	6.6615		0.2012	B	6.49	99.5		P
Cadmium	75 - 125	3.6591		0.6490	U	6.49	56.4	N	P
Chromium	75 - 125	45.4063		35.8567		25.96	36.8	N	P
Cobalt	75 - 125	74.5470		14.1732		64.90	93.0		P
Copper	75 - 125	65.8814		47.1327		32.45	57.8	N	P
Iron		73994.7266		123366.3984		129.80	-38035		P
Lead	75 - 125	118.6747		77.7012		64.90	63.1	N	P
Manganese	75 - 125	218.5125		225.3245		64.90	-10.5	N	P
Nickel	75 - 125	94.2770		45.4465		64.90	75.2		P
Selenium	75 - 125	251.8211		9.8676		259.61	93.2		P
Mercury	75 - 125	0.7658		0.1270		0.65	98.4		CV
Silver	75 - 125	6.6472		0.4452	B	6.49	95.6		P
Thallium	75 - 125	245.0390		1.2980	U	259.61	94.4		P
Vanadium	75 - 125	75.4141		9.3899		64.90	101.7		P
Zinc	75 - 125	180.1337		136.3006		64.90	67.5	N	P

Comments:

TL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-5A-

SPIKE SAMPLE RECOVERY

SAMPLE NO.

ZR-TP-02 (3.5-5.5') SD

Contract: NY02-457

Lab Code: STLBFLO Case No.: SAS No.: SDG NO.: 5603

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 77.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Antimony	75 - 125	31.7848		2.1898	B	64.90	45.6	N	P
Arsenic	75 - 125	288.8928		89.0680		259.61	77.0		P
Barium	75 - 125	376.0294		89.1070		259.61	110.5		P
Beryllium	75 - 125	6.5498		0.2012	B	6.49	97.8		P
Cadmium	75 - 125	1.7316		0.6490	U	6.49	26.7	N	P
Chromium	75 - 125	41.7432		35.8567		25.96	22.7	N	P
Cobalt	75 - 125	74.4289		14.1732		64.90	92.8		P
Copper	75 - 125	64.1199		47.1327		32.45	52.3	N	P
Iron		112892.8984		123366.3984		129.80	-8068.8		P
Lead	75 - 125	144.5704		77.7012		64.90	103.0		P
Manganese	75 - 125	244.1965		225.3245		64.90	29.1	N	P
Nickel	75 - 125	90.5361		45.4465		64.90	69.5	N	P
Selenium	75 - 125	249.7508		9.8676		259.61	92.4		P
Mercury	75 - 125	0.7325		0.1270		0.62	98.0		CV
Silver	75 - 125	6.6680		0.4452	B	6.49	95.9		P
Thallium	75 - 125	242.5325		1.2980	U	259.61	93.4		P
Vanadium	75 - 125	74.9104		9.3899		64.90	101.0		P
Zinc	75 - 125	184.7430		136.3006		64.90	74.6	N	P

Comments:

_TL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-10-

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Contract: NY02-457

Lab Code: STLBFLO Case No.: _____ SAS No.: _____ SDG NO.: 5603

ICP ID Number: SUPERTRACE2 Date: 5/3/03

Flame AA ID Number: _____

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.215		200	18.0	P
Antimony	206.838		60	4.9	P
Arsenic	189.042		10	3.8	P
Barium	493.409		200	0.3	P
Beryllium	313.042		5	0.1	P
Cadmium	226.502		5	0.3	P
Calcium	317.933		5000	5.2	P
Chromium	267.716		10	1.1	P
Cobalt	228.616		50	0.8	P
Copper	324.753		25	1.3	P
Iron	271.441		100	12.4	P
Lead	220.353		3	2.3	P
Magnesium	279.078		5000	7.8	P
Manganese	257.610		15	0.1	P
Nickel	231.604		40	1.2	P
Potassium	766.491		5000	36.5	P
Selenium	296.026		35	4.1	P
Silver	328.068		10	1.0	P
Sodium	330.232		5000	254.0	P
Vanadium	292.402		50	0.9	P
Zinc	206.200		20	0.7	P

Comments: _____

TL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

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PREPARATION LOG

ntract: NY02-457

Lab Code: STLBFLO Case No.: _____ SAS No. _____ SDG NO.: 5603

thod P Prep Method: _____

Sample ID	Preparation Date	Weight (grams)	Final Volume (mL)
Method Blank	6/13/03	0.50	50
LCS CLP Soils	6/13/03	0.51	50
ZR-TP-02 (3.5-5.5')	6/13/03	0.50	50
ZR-TP-02 (3.5-5.5')	6/13/03	0.49	50
ZR-TP-02 (3.5-5.5')	6/13/03	0.50	50
ZR-TP-02 (3.5-5.5')	6/13/03	0.50	50
ZR-SS-02	6/13/03	0.49	50
ZR-TP-03 (5.5-9')	6/13/03	0.48	50
ZR-SS-05	6/13/03	0.49	50
ZR-SS-01	6/13/03	0.50	50
ZR-TP-09 (8')	6/13/03	0.50	50
ZR-TP-11 (2-4')	6/13/03	0.50	50
ZR-TP-08 (5')	6/13/03	0.50	50
ZR-TP-07 (7')	6/13/03	0.51	50
ZR-SS-11	6/13/03	0.51	50
ZR-TP-03 (4.5-5.5')	6/13/03	0.49	50
ZR-SS-03	6/13/03	0.49	50
ZR-TP-12 (7-7.5')	6/13/03	0.51	50
ZR-TP-01 (4-5')	6/13/03	0.49	50
ZR-TP-05 (8')	6/13/03	0.50	50
ZR-SS-09	6/13/03	0.52	50
ZR-SS-08	6/13/03	0.49	50
ZR-SS-12	6/13/03	0.50	50
ZR-SS-07	6/13/03	0.49	50

Comments:

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-14-

ANALYSIS RUN LOG

Contract: NY02-457

Lab Code: STLBFLO Case No.: _____ SAS No.: _____ SDG No.: 5603

Instrument ID Number: SUPERTRACE2 Method: P

Start Date: 6/20/03 End Date: 6/20/03

Sample ID.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN			
STD BLK	1.00	12:09		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
STD 1	1.00	12:13		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
STD 2	1.00	12:18		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
STD 3	1.00	12:22		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
STD 3 VER	1.00	12:26		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
ICV	1.00	12:31		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
ICB	1.00	12:35		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
CLPCRIS	1.00	12:39		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
ICSA	1.00	12:44		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
CLPAB	1.00	12:49		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
CLPCRIS	1.00	12:57		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
ICSA	1.00	13:01		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
CLPAB	1.00	13:06		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
CCV	1.00	13:10		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
CCB	1.00	13:14		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
CRI(1:2)	2.00	13:18		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
Method Blank 2	1.00	13:23		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
LCS CLP Soils 2	1.00	13:27		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
ZR-TP-02 (3.5-5.5')	1.00	13:31		X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X	X	X		X	X				
ZR-TP-02 (3.5-5.5')L	5.00	13:36		X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X	X	X		X	X				
ZR-TP-02 (3.5-5.5')A	1.00	13:40		X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X	X	X		X	X				
ZR-TP-02 (3.5-5.5') MD	1.00	13:44		X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X	X	X		X	X				
ZR-TP-02 (3.5-5.5') MS	1.00	13:49			X	X	X	X	X		X	X	X		X		X		X		X	X			X	X				
ZR-TP-02 (3.5-5.5') SD	1.00	13:53			X	X	X	X	X		X	X	X		X		X		X		X	X			X	X				
ZR-TP-12 (7-7.5')	1.00	13:57													X															
CCV	1.00	14:03		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
CCB	1.00	14:07		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
ZR-SS-02	1.00	14:11		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
ZR-TP-03 (5.5-9')	1.00	14:16		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
ZR-SS-05	1.00	14:20		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X					
ZR-TP-01 (4-5')	1.00	14:24													X															
ZR-SS-01	1.00	14:29		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X				
ZR-TP-09 (8')	1.00	14:33		X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X	X	X		X	X				
ZR-TP-05 (8')	1.00	14:37													X															

* - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-14-

ANALYSIS RUN LOG

Contract: NY02-457

Lab Code: STLBFLO Case No.: _____ SAS No.: _____ SDG No.: 5603

Instrument ID Number: SUPERTRACE2 Method: P

Start Date: 6/20/03 End Date: 6/20/03

Sample ID.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
CLPCRIS	1.00	14:41		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	
ICSA	1.00	14:46		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	
CLPAB	1.00	14:50		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	
CCV	1.00	14:56		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	
CCB	1.00	15:00		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	
ZR-TP-11 (2-4')	1.00	15:04		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	
ZR-TP-08 (5')	1.00	15:09		X	X	X	X	X	X		X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	
ZR-TP-07 (7')	1.00	15:13		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	
ZR-SS-11	1.00	15:17		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	
ZR-SS-09	1.00	15:21													X													
ZR-TP-03 (4.5-5.5')	1.00	15:26																										
ZR-SS-08	1.00	15:30													X													
ZR-SS-12	1.00	15:34													X													
ZR-SS-03	1.00	15:39													X													
ZR-SS-07	1.00	15:43													X													
CCV	1.00	15:49		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	
CCB	1.00	15:53		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	
CLPCRIS	1.00	15:57		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	
CLPCRIS	1.00	16:03		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	
ICSA	1.00	16:07		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	
CLPAB	1.00	16:11		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	
CCV	1.00	16:16		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	
CCB	1.00	16:20		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X	X	

* - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-2B-

CRDL STANDARD FOR AA AND ICP

ntract: NY02-457

Code: STLBFLO Case No.: _____ SAS No.: _____ SDG No.: 5603

CRDL Standard Source: _____

CRDL Standard Source: VHG

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum				400.0	411.46	102.9	426.62	106.7
Antimony				120.0	112.22	93.5	110.77	92.3
Arsenic				30.0	30.71	102.4	30.18	100.6
Barium				400.0	414.73	103.7	420.52	105.1
Beryllium				10.0	10.88	108.8	10.70	107.0
Cadmium				10.0	10.61	106.1	10.20	102.0
Calcium				1000.0	1081.55	108.2	1077.26	107.7
Chromium				20.0	18.27	91.4	18.07	90.4
Cobalt				100.0	99.75	99.8	99.41	99.4
Copper				50.0	47.80	95.6	48.26	96.5
Iron				200.0	217.17	108.6	523.47	261.7
Lead				20.0	19.73	98.6	19.01	95.0
Magnesium				1000.0	989.19	98.9	979.54	98.0
Manganese				30.0	28.33	94.4	28.50	95.0
Nickel				80.0	77.69	97.1	77.15	96.4
Potassium				1000.0	1204.72	120.5	1220.61	122.1
Selenium				70.0	71.78	102.5	71.90	102.7
Silver				20.0	21.32	106.6	20.98	104.9
Sodium				1000.0	962.70	96.3	1031.74	103.2
Thallium				50.0	56.93	113.9	51.42	102.8
Vanadium				100.0	101.08	101.1	100.49	100.5
Zinc				120.0	124.56	103.8	122.69	102.2

Comments:

PANAMERICAN ENVIRONMENTAL INC.

-2B-

CRDL STANDARD FOR AA AND ICP

ntract: NY02-457

Code: STLBFLO Case No.: _____ SAS No.: _____ SDG No.: 5603

CRDL Standard Source: _____

CRDL Standard Source: VHG

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum				400.0			443.95	111.0
Antimony				120.0			115.04	95.9
Arsenic				30.0			28.45	94.8
Barium				400.0			432.99	108.2
Beryllium				10.0			10.69	106.9
Cadmium				10.0			10.13	101.3
Calcium				1000.0			1081.49	108.1
Chromium				20.0			17.69	88.4
Cobalt				100.0			99.54	99.5
Copper				50.0			47.90	95.8
Iron				200.0			565.92	283.0
Lead				20.0			19.87	99.4
Magnesium				1000.0			972.72	97.3
Manganese				30.0			28.44	94.8
Nickel				80.0			76.30	95.4
Potassium				1000.0			1235.40	123.5
Selenium				70.0			72.36	103.4
Silver				20.0			21.41	107.0
Sodium				1000.0			787.92	78.8
Thallium				50.0			50.30	100.6
Vanadium				100.0			100.28	100.3
Zinc				120.0			124.32	103.6

nts:

PANAMERICAN ENVIRONMENTAL INC.

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ICP SERIAL DILUTIONS

SAMPLE NO.

ZR-TP-02 (3.5-5.5')

ract: NY02-457

Code: STLBFLO Case No.: SAS No.: SDG NO.: 5603

x (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	44799.48		45627.25		1.8		P
ntimony	40.17		33.05	B	17.7		P
rsenic	671.09		649.75		3.2		P
Barium	768.31		732.80	B	4.6		P
eryllium	1.80		1.85	B	2.8		P
admium	5.00	U	25.00	U			P
Calcium	16456.80		16036.95	B	2.6		P
hromium	281.55		278.40		1.1		P
obalt	109.83		106.80	B	2.8		P
Copper	368.71		342.95		7.0		P
ron	919355.38		884691.81		3.8		P
ead	594.75		588.40		1.1		P
Magnesium	11146.95		11367.35	B	2.0		P
anganese	1742.60		1716.00		1.5		P
Nickel	348.00		310.30		10.8		P
Potassium	12078.05		12206.90	B	1.1		P
elenium	57.93		82.00	B	41.6		P
Silver	1.36	B	50.00	U	100.0		P
odium	1831.13		1669.60	B	8.8		P
hallium	108.99		125.65		15.3		P
Vanadium	101.24		105.00	B	3.7		P
inc	1010.59		996.60		1.4		P

nts:

L BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-14-

ANALYSIS RUN LOG

ontract: NY02-457

Code: STLBFLO Case No.: SAS No.: SDG No.: 5603

nstrument ID Number: SUPERTRACE2 Method: P

t rt Date: 9/3/03 End Date: 9/3/03

Sample ID.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
STD BLK	1.00	08:59		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
D 1	1.00	09:04		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
STD 2	1.00	09:09		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
D 3	1.00	09:14		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
D 3 VER	1.00	09:19		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ICV	1.00	09:24		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
3	1.00	09:29		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CLPCRIS	1.00	09:33		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
SA	1.00	09:41		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
PAB	1.00	09:46		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCV	1.00	09:51		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
3	1.00	09:56		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZZZ	5.00	10:01																									
ZZZZ	1.00	10:05																									
ZZZ	1.00	10:10																									
ZZZZZ	1.00	10:15																									
ZZZ	5.00	10:20																									
ZZZZ	1.00	10:25																									
ZZZZZ	1.00	10:30																									
ZZZ	5.00	10:35																									
ZZZZZ	1.00	10:40																									
ZZZ	1.00	10:45																									
C	1.00	10:52		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CB	1.00	10:57		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZ	1.00	11:02																									
ZZZZZ	1.00	11:07																									
ZZZ	1.00	11:12																									
ZZZ	1.00	11:17																									
ZZZZZ	1.00	11:23																									
ZZZ	1.00	11:29																									
ZZZZZ	5.00	11:37																									
CRIS	1.00	11:43		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
A	1.00	11:50		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	

- Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

ANALYSIS RUN LOG

ontract: NY02-457

Code: STLBFLO Case No.: SAS No.: SDG No.: 5603

nstrument ID Number: SUPERTRACE2 Method: P

rt Date: 9/3/03 End Date: 9/3/03

Sample ID.	D/F	Time	% R	AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
C'.PAB	1.00	11:54		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
.PAB	1.00	12:07		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCV	1.00	12:12		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
B	1.00	12:17		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZZ	1.00	12:22																									
ZZZZZ	1.00	12:27																									
ZZZZ	1.00	12:32																									
ZZZZZZ	5.00	12:36																									
ZZZZ	1.00	12:41																									
ZZZZ	1.00	12:46																									
ZZZZZZ	5.00	12:51																									
ZZZZ	1.00	12:56																									
ZZZZZZ	1.00	13:01																									
ZZZZ	1.00	13:06																									
V	1.00	13:12		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCB	1.00	13:17		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
ZZZZ	1.00	13:22																									
ZZZZZZ	1.00	13:27																									
ZZZZZ	1.00	13:32																									
ZZZZ	1.00	13:37																									
ZR-TP-02 (3.5-5.5'	5.00	13:42		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
R-TP-02 (3.5-5.5'	1.00	13:47		X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X	X	X	X	X	X	
LPCRIS	1.00	13:52		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CSA	1.00	13:56		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
.PAB	1.00	14:01		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
CCV	1.00	14:08		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	
B	1.00	14:18		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	

* - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

SEVERN TRENT STL

STL Report : 203900
STL-BUFFALO

Case Narrative

Sample Receipt – All samples were received in good condition and at the proper temperature.

Organic Extraction - Samples were extracted according to US EPA Method OLM03.2/04.2. No problems were encountered.

Semi-Volatile Organics - Semi-volatile organic samples were analyzed according to NYSDEC/USEPA CLP OLM4.2 by capillary GC/MS. The instrumentation used was a Hewlett-Packard gas chromatograph interfaced with a mass selective detector using an RTX-5 or DB5 30 meter column with 0.25 mm ID and 0.5 um film thickness.

A 2ul injection was used for all samples and standards. The instrument was calibrated at 10ng/ul (20 ng), 25 ng/ul(50 ng), 40ng/ul(80ng), 60ng/ul(120ng) and 80ng/ul(160ng). Internal standards were added to all samples and standards were at 20ng/ul(40ng).

The TIC windows used for this SDG were calculated using the continuing calibration check standards retention times and are as follows:

QC9388	3.52 –17.32
PC8043	3.54-17.45
PC8154	3.37-16.80

Due to the implementation of an electronic pressure controlled method a secondary ion (63) was used for the quantitation of Bis(2-chloroethyl)ether. A non-target compound, aniline (quant ion 93), was determined to coelute with Bis(2-chloroethyl)ether with this new method. Quantitation using the secondary ion ensures correct integration and quantitation of both compounds.

The following samples were analyzed at dilutions due to the presence of high levels of target compounds:

ZR-TP-03 (5-5-9')DL	1:10
ZR-TP-09 (8')DL	1:5
ZR-TP-07(7')DL	1:4

Both sets of results have been reported with the diluted runs designated with the suffix "DL".

SEVERN TRENT STL

Sample Calculation:

Sample ID – ZR-TP-08 (5')
Compound – bis(2-ethylhexyl)phthalate

$$\frac{(107453)(40)(500)(1.0)(2)}{(186290)(.770)(2.0)(30.5)(.652)} = 753 = 750 \text{ ug/kg}$$

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in the case narrative.

I certify that this data package is in compliance with the terms and conditions of this contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Cheryl A. Cason for
Jeffrey C. Curran
Laboratory Manager

June 27, 2003
Date

ALKANE NARRATIVE REPORT
Report date : 06/27/2003
SDG: 203900

Client Sample ID: ZR-TP-02 (3.5-5.5') Lab Sample ID: 203900-1 File ID:

Compound	RT	Est. Conc.	Q
Unknown Branched Alkane	10.59	300	J
Unknown Straight Alkane	11.56	390	J
Unknown Branched Alkane	11.89	600	J
Unknown Straight Alkane	12.15	310	J
Unknown Straight Alkane	13.06	350	J

Client Sample ID: ZR-SS-02 Lab Sample ID: 203900-2 File ID: QO9395

Compound	RT	Est. Conc.	Q
Unknown Branched Alkane	10.93	100	J
Unknown Straight Alkane	11.87	480	J
Unknown Straight Alkane	13.06	440	J

Client Sample ID: ZR-TP-03 (5.5-9') Lab Sample ID: 203900-3 File ID: Q

Compound	RT	Est. Conc.	Q
Unknown Straight Alkane	10.96	660	J
Unknown Straight Alkane	11.28	650	J
Unknown Straight Alkane	11.59	770	J
Unknown Branched Alkane	11.78	520	J
Unknown Straight Alkane	12.18	560	J
Unknown Straight Alkane	12.76	1200	J
Unknown Straight Alkane	13.11	2200	J

J
8/11/2

Client Sample ID: ZR-SS-01 Lab Sample ID: 203900-5 File ID: QO9398

Compound	RT	Est. Conc.	Q
Unknown Straight Alkane	11.87	390	J
Unknown Straight Alkane	13.07	300	J

Client Sample ID: ZR-TP-09 (8') Lab Sample ID: 203900-6 File ID: QO939

Compound	RT	Est. Conc.	Q
Unknown Straight Alkane	10.97	660	J
Unknown Straight Alkane	11.30	860	J
Unknown Straight Alkane	13.00	1300	J
Unknown Straight Alkane	13.15	2500	J
Unknown Straight Alkane	13.97	3900	J

Client Sample ID: ZR-SS-11 Lab Sample ID: 203900-10 File ID: QO9403

Compound	RT	Est. Conc.	Q
Unknown Straight Alkane	13.08	510	J

Client Sample ID: ZR-TP-07 (7') Lab Sample ID: 203900-9 File ID: QO940

Compound	RT	Est. Conc.	Q
Unknown Branched Alkane	10.94	690	J
Unknown Straight Alkane	11.27	1100	J
Unknown Straight Alkane	11.58	1000	J
Unknown Straight Alkane	11.88	1000	J
Unknown Straight Alkane	12.17	1100	J
Unknown Straight Alkane	13.09	1200	J

J

8/28/07 3

Client Sample ID: ZR-TP-03 (5.5-9')DL Lab Sample ID: 203900-3DL File I

Compound	RT	Est. Conc.	Q
Unknown Straight Alkane	10.21	3100	JD
Unknown Straight Alkane	10.90	2800	JD
Unknown Straight Alkane	11.22	2800	JD
Unknown Straight Alkane	11.72	8400	JD
Unknown Straight Alkane	11.83	11000	JD
Unknown Straight Alkane	12.12	8800	JD
Unknown Straight Alkane	12.40	11000	JD
Unknown Straight Alkane	12.69	9500	JD
Unknown Straight Alkane	13.01	10000	JD

Client Sample ID: ZR-TP-09 (8')DL Lab Sample ID: 203900-6DL File ID: P

Compound	RT	Est. Conc.	Q
Unknown Straight Alkane	10.22	6800	JD
Unknown Straight Alkane	10.91	8400	JD
Unknown Branched Alkane	11.23	11000	JD
Unknown Straight Alkane	11.54	7900	JD
Unknown Branched Alkane	11.72	11000	JD
Unknown Straight Alkane	11.84	8500	JD
Unknown Straight Alkane	12.13	8000	JD
Unknown Straight Alkane	12.41	6400	JD
Unknown Straight Alkane	12.70	5100	JD
Unknown Straight Alkane	13.02	4300	JD
Unknown Straight Alkane	13.79	2100	JD

Client Sample ID: ZR-TP-07 (7')DL Lab Sample ID: 203900-9DL File ID: P

Compound	RT	Est. Conc.	Q
Unknown Straight Alkane	9.84	1400	JD
Unknown Straight Alkane	10.21	2300	JD
Unknown Branched Alkane	10.90	3000	JD
Unknown Straight Alkane	11.22	3300	JD
Unknown Straight Alkane	11.53	2700	JD
Unknown Straight Alkane	11.83	2800	JD
Unknown Straight Alkane	12.12	2400	JD
Unknown Straight Alkane	12.40	3400	JD
Unknown Straight Alkane	12.69	2000	JD
Unknown Straight Alkane	13.01	2100	JD
Unknown Branched Alkane	13.37	3200	JD

Client Sample ID: ZR-TP-11 (2-4') Lab Sample ID: 203900-7 File ID: PO8

Compound	RT	Est. Conc.	Q
Unknown Branched Alkane	11.81	350	J
Unknown Straight Alkane	12.09	480	J
Unknown Straight Alkane	12.64	720	J

Client: Panamerican Environmental Inc. Project: NY3A9072 Quote: NY02-457 SM #: 536					Turn Around Required: 21C Purchase Order#: TBD
Client Sample ID	Lab ID	Matrix	Parameters	# and Type of Samp Containers	Sample Date/Time
ZR-TP-02 (3.5-5.5') 1	A3560501	SOIL	8270	1-4ozGW	06/10/2003 09:30
ZR-SS-02 2	A3560502	SOIL	8270	1-4ozGW	06/10/2003 09:15
ZR-TP-03 (5.5-9') 3	A3560503	SOIL	8270	1-4ozGW	06/10/2003 10:45
ZR-SS-05 4	A3560504	SOIL	8270	1-4ozGW	06/10/2003 16:00
ZR-SS-01 5	A3560505	SOIL	8270	1-4ozGW	06/10/2003 08:25
ZR-TP-09 (8') 6	A3560506	SOIL	8270	1-4ozGW	06/10/2003 15:25
ZR-TP-11 (2-4') 7	A3560507	SOIL	8270	1-4ozGW	06/10/2003 13:20
ZR-TP-08 (5') 8	A3560508	SOIL	8270	1-4ozGW	06/10/2003 16:55
ZR-TP-07 (7') 9	A3560509	SOIL	8270	1-4ozGW	06/10/2003 11:45
ZR-SS-11 10	A3560510	SOIL	8270	1-4ozGW	06/10/2003 13:05

Relinquished by STL Buffalo: Signature(s)	Date	Time	Received By STL - CT (Shelton): Signature(s)	Date	Time
(1) [signature]	6/12/2003	1700	(3) Alex C Yaworouski	06/13/2003	09:30
(2) Alex C.	/ /20		(4)	/ /20	

14.4.
06.13.03

203900 06/28/2003
SEVERN TRENT LABORATORIES-BUFFALO
BRIAN FISCHER
VILLAGE OF DEPEW

3°C

"PASSED RAD SCREEN"

628/1539

rpjsckl | Job Sample Receipt Checklist Report | V2

Job Number.: 203900 Location.: 57207 Check List Number.: 1 Description.:
Customer Job ID.....: Job Check List Date.: Date of the Report..: 06/13/2003
Project Number.: 20000844 Project Description.: Village of Depew Project Manager.....: mds
Customer.....: SEVERN TRENT LABORATORIES-BUFFALO Contact.: Brian Fischer

Questions ?	(Y/N)	Comments
Chain-of-Custody Present?	Y	
...If "yes", completed properly?	Y	
Custody seal on shipping container?	Y	
...If "yes", custody seal intact?	Y	
Custody seals on sample containers?	N	
..If "yes", custody seal intact?		
samples iced?	Y	
Temperature of cooler acceptable? (4 deg C +/- 2).	Y	3C
amples received intact (good condition)?	Y	
Volatile samples acceptable? (no headspace)		
orrect containers used?	Y	
Adequate sample volume provided?	Y	
mples preserved correctly?		
samples received within holding-time?	Y	
reement between COC and sample labels?	Y	
dioactivity at or below background levels?	Y	
A Sample Discrepancy Report (SDR) was needed?	N	
nments		
If samples were shipped was there an air bill #?	Y	FE 6132 3563 2903
ple Custodian Signature/Date	Y	06/13/03

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: STL-CT Contract:

Lab Code: STLCT Case No.: 203900 SAS No.: SDG No.: 203900

Lab File ID: QC9388 DFTPP Injection Date: 06/17/03

Instrument ID: MSQ DFTPP Injection Time: 1135

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	30.4
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	45.3
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	25.0 - 75.0% of mass 198	46.3
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	24.3
365	Greater than 0.75% of mass 198	3.60
441	Present, but less than mass 443	14.0
442	40.0 - 110.0% of mass 198	89.8
443	15.0 - 24.0% of mass 442	16.7 (18.6)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD050K8	SSTD050K8	QO9388	06/17/03	1135
02	18390-1MB	18390-1MB	QO9389	06/17/03	1213
03	18390-2LCS	18390-2LCS	QO9390	06/17/03	1239
04	ZR-TP-02 (3.	203900-1	QO9391	06/17/03	1306
05	ZR-TP-02 (3.	203900-1MS	QO9392	06/17/03	1332
06	ZR-TP-02 (3.	203900-1MSD	QO9393	06/17/03	1359
07	ZR-SS-02	203900-2	QO9395	06/17/03	1452
08	ZR-TP-03 (5.	203900-3	QO9396	06/17/03	1519
09	ZR-SS-05	203900-4	QO9397	06/17/03	1545
10	ZR-SS-01	203900-5	QO9398	06/17/03	1612
11	ZR-TP-09 (8'	203900-6	QO9399	06/17/03	1638
12	ZR-TP-08 (5'	203900-8	QO9401	06/17/03	1731
13	ZR-TP-07 (7'	203900-9	QO9402	06/17/03	1758
14	ZR-SS-11	203900-10	QO9403	06/17/03	1824
15					
16					
17					
18					
19					
20					
21					
22					

FORM V SV

7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: STL-CT Contract:

Lab Code: STLCT Case No.: 203900 SAS No.: SDG No.: 203900

Instrument ID: MSQ Calibration Date: 06/17/03 Time: 1135

Lab File ID: QO9388 Init. Calib. Date(s): 06/12/03 06/12/03

Init. Calib. Times: 1009 1156

GC Column: RTX-5 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF25	MIN RRF	%D	MAX %D	
Nitrobenzene-d5	0.361	0.331	0.2	8.3	25.0	
2-Fluorobiphenyl	1.177	1.162	0.7	1.3	25.0	
Benzaldehyde	0.454	0.474	0.01	4.4	100	
Phenol	1.422	1.090	0.8	23.3	25.0	
bis(2-Chloroethyl)ether	0.881	0.623	0.7	29.3	25.0	<-
2-Chlorophenol	1.250	1.189	0.8	4.9	25.0	
Terphenyl-d14	0.724	0.690	0.5	4.7	25.0	
Phenol-d5	1.425	1.053	0.8	26.1	25.0	<-
2-Methylphenol	1.000	0.791	0.7	20.9	25.0	
2,2'-oxybis(1-Chloropropane)	1.635	0.966	0.01	40.9	100	
Acetophenone	1.392	1.351	0.01	2.9	100	
4-Methylphenol	1.019	0.927	0.6	9.0	25.0	
N-Nitroso-di-n-propylamine	0.753	0.564	0.5	25.1	25.0	<-
Hexachloroethane	0.761	0.766	0.3	0.7	25.0	
2-Fluorophenol	1.199	0.950	0.6	20.8	25.0	
Nitrobenzene	0.339	0.309	0.2	8.8	25.0	
Isophorone	0.615	0.504	0.4	18.0	25.0	
2-Nitrophenol	0.211	0.211	0.1	0.0	25.0	
2,4-Dimethylphenol	0.304	0.308	0.2	1.3	25.0	
Bis(2-Chloroethoxy)methane	0.389	0.315	0.3	19.0	25.0	
2,4-Dichlorophenol	0.317	0.331	0.2	4.4	25.0	
Naphthalene	0.900	0.921	0.7	2.3	25.0	
4-Chloroaniline	0.423	0.426	0.01	0.7	100	
Hexachlorobutadiene	0.221	0.319	0.01	44.3	100	
Caprolactam	0.090	0.070	0.01	22.2	100	
4-Chloro-3-methylphenol	0.269	0.254	0.2	5.6	25.0	
2-Methylnaphthalene	0.527	0.655	0.4	24.3	25.0	
Hexachlorocyclopentadiene	0.518	0.661	0.01	27.6	100	
2,4,6-Trichlorophenol	0.444	0.496	0.2	11.7	25.0	
2,4,5-Trichlorophenol	0.455	0.522	0.2	14.7	25.0	
1,1'-Biphenyl	1.285	1.269	0.01	1.2	100	
2,4,6-Tribromophenol	0.331	0.465	0.01	40.5	100	
2-Chloronaphthalene	1.150	1.104	0.8	4.0	25.0	
2-Nitroaniline	0.350	0.297	0.01	15.1	100	
Dimethylphthalate	1.269	1.232	0.01	2.9	100	
2,6-Dinitrotoluene	0.310	0.276	0.2	11.0	25.0	

7C
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: STL-CT Contract:

Lab Code: STLCT Case No.: 203900 SAS No.: SDG No.: 203900

Instrument ID: MSQ Calibration Date: 06/17/03 Time: 1135

Lab File ID: QO9388 Init. Calib. Date(s): 06/12/03 06/12/03

Init. Calib. Times: 1009 1156

GC Column: RTX-5 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF25	MIN RRF	%D	MAX %D
Acenaphthylene	1.767	1.662	0.9	5.9	25.0
3-Nitroaniline	0.360	0.331	0.01	8.1	100
Acenaphthene	1.026	1.033	0.9	0.7	25.0
2,4-Dinitrophenol	0.207	0.228	0.01	10.1	100
4-Nitrophenol	0.229	0.290	0.01	26.6	100
Dibenzofuran	1.491	1.419	0.8	4.8	25.0
2,4-Dinitrotoluene	0.399	0.385	0.2	3.5	25.0
Diethylphthalate	1.363	1.338	0.01	1.8	100
Fluorene	1.111	1.175	0.9	5.8	25.0
4-Chlorophenyl-phenylether	0.551	0.683	0.4	24.0	25.0
4-Nitroaniline	0.366	0.315	0.01	13.9	100
2-Chlorophenol-d4	1.316	1.218	0.8	7.4	25.0
4,6-Dinitro-2-methylphenol	0.158	0.157	0.01	0.6	100
N-Nitrosodiphenylamine (1)	0.472	0.435	0.01	7.8	100
4-Bromophenyl-phenylether	0.230	0.269	0.1	17.0	25.0
Hexachlorobenzene	0.310	0.378	0.1	21.9	25.0
Atrazine	0.170	0.185	0.01	8.8	100
Pentachlorophenol	0.208	0.233	0.05	12.0	25.0
Phenanthrene	0.937	0.906	0.7	3.3	25.0
Anthracene	1.000	0.940	0.7	6.0	25.0
Carbazole	2.675	2.393	0.01	10.5	100
Di-n-butylphthalate	1.405	1.233	0.01	12.2	100
Fluoranthene	1.055	1.099	0.6	4.2	25.0
Pyrene	1.106	0.944	0.6	14.6	25.0
1,2-Dichlorobenzene-d4	0.822	0.820	0.4	0.2	25.0
Butylbenzylphthalate	0.680	0.479	0.01	29.6	100
3,3'-Dichlorobenzidine	0.419	0.306	0.01	27.0	100
Benzo(a)anthracene	1.029	0.907	0.8	11.9	25.0
Chrysene	0.953	0.987	0.7	3.6	25.0
Bis(2-Ethylhexyl)phthalate	0.882	0.770	0.01	12.7	100
Di-n-octylphthalate	1.390	1.167	0.01	16.0	100
Benzo(b)fluoranthene	1.005	1.030	0.7	2.5	25.0
Benzo(k)fluoranthene	1.118	1.228	0.7	9.8	25.0
Benzo(a)pyrene	0.957	0.947	0.7	1.0	25.0
Indeno(1,2,3-cd)pyrene	1.299	1.288	0.5	0.8	25.0
Dibenzo(a,h)anthracene	1.005	1.044	0.4	3.9	25.0
Benzo(g,h,i)perylene	1.232	1.031	0.5	16.3	25.0

FORM VII SV-2

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: STL-CT Contract:

Lab Code: STLCT Case No.: 203900 SAS No.: SDG No.: 203900

Lab File ID: PC8154 DFTPP Injection Date: 06/26/03

Instrument ID: MSP DFTPP Injection Time: 1203

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	50.9
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Less than 100.0% of mass 198	77.6
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	25.0 - 75.0% of mass 198	48.8
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.9
275	10.0 - 30.0% of mass 198	17.1
365	0.7 - 100.0% of mass 198	3.3
441	Present, but less than mass 443	6.3
442	40.0 - 110.0% of mass 198	45.0
443	15.0 - 24.0% of mass 442	8.9 (19.8)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD020C4	SSTD020C4	PO8155	06/26/03	1232
02	SSTD050C5	SSTD050C5	PO8156	06/26/03	1258
03	SSTD080C6	SSTD080C6	PO8157	06/26/03	1324
04	SSTD120C7	SSTD120C7	PO8158	06/26/03	1350
05	SSTD160C8	SSTD160C8	PO8159	06/26/03	1415
06	ZR-TP-11 (2-	203900-7	PO8163	06/26/03	1604
07					
08					
09					
10					
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22					

7B
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: STL-CT Contract:

Lab Code: STLCT Case No.: 203900 SAS No.: SDG No.: 203900

Instrument ID: MSP Calibration Date: 06/26/03 Time: 1258

Lab File ID: PO8156 Init. Calib. Date(s): 06/26/03 06/26/03

Init. Calib. Times: 1232 1415

GC Column: RTX-5 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF25	MIN RRF	%D	MAX %D
2-Fluorophenol	0.951	0.890	0.6	6.4	25.0
Phenol-d5	1.572	1.458	0.8	7.3	25.0
Benzaldehyde	0.334	0.142	0.01	57.5	100
Phenol	1.612	1.482	0.8	8.1	25.0
bis(2-Chloroethyl)ether	0.850	0.807	0.7	5.1	25.0
2-Chlorophenol	1.213	1.109	0.8	8.6	25.0
2-Chlorophenol-d4	1.292	1.198	0.8	7.3	25.0
1,2-Dichlorobenzene-d4	0.888	0.814	0.4	8.3	25.0
2-Methylphenol	1.010	0.951	0.7	5.8	25.0
2,2'-oxybis(1-Chloropropane)	1.580	1.428	0.01	9.6	100
Acetophenone	1.491	1.398	0.01	6.2	100
4-Methylphenol	1.088	1.061	0.6	2.5	25.0
N-Nitroso-di-n-propylamine	0.892	0.851	0.5	4.6	25.0
Hexachloroethane	0.870	0.831	0.3	4.5	25.0
Nitrobenzene-d5	0.413	0.410	0.2	0.7	25.0
Nitrobenzene	0.404	0.391	0.2	3.2	25.0
Isophorone	0.626	0.594	0.4	5.1	25.0
2-Nitrophenol	0.203	0.192	0.1	5.4	25.0
2,4-Dimethylphenol	0.332	0.337	0.2	1.5	25.0
Bis(2-Chloroethoxy)methane	0.347	0.323	0.3	6.9	25.0
2,4-Dichlorophenol	0.339	0.325	0.2	4.1	25.0
Naphthalene	0.934	0.849	0.7	9.1	25.0
4-Chloroaniline	0.347	0.314	0.01	9.5	100
Hexachlorobutadiene	0.257	0.260	0.01	1.2	100
Caprolactam	0.065	0.069	0.01	6.2	100
4-Chloro-3-methylphenol	0.284	0.286	0.2	0.7	25.0
2-Methylnaphthalene	0.642	0.633	0.4	1.4	25.0
Hexachlorocyclopentadiene	0.206	0.166	0.01	19.4	100
2,4,6-Trichlorophenol	0.379	0.375	0.2	1.1	25.0
2,4,5-Trichlorophenol	0.438	0.442	0.2	0.9	25.0
1,1'-Biphenyl	1.209	1.176	0.01	2.7	100
2-Fluorobiphenyl	1.116	1.108	0.7	0.7	25.0
2-Chloronaphthalene	1.087	1.062	0.8	2.3	25.0
2-Nitroaniline	0.371	0.374	0.01	0.8	100
Dimethylphthalate	1.099	1.113	0.01	1.3	100
2,6-Dinitrotoluene	0.295	0.300	0.2	1.7	25.0

FORM VII SV-1

7C
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: STL-CT Contract:

Lab Code: STLCT Case No.: 203900 SAS No.: SDG No.: 203900

Instrument ID: MSP Calibration Date: 06/26/03 Time: 1258

Lab File ID: PO8156 Init. Calib. Date(s): 06/26/03 06/26/03

Init. Calib. Times: 1232 1415

GC Column: RTX-5 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF25	MIN RRF	%D	MAX %D
Acenaphthylene	1.624	1.593	0.9	1.9	25.0
3-Nitroaniline	0.318	0.313	0.01	1.6	100
Acenaphthene	0.976	0.964	0.9	1.2	25.0
2,4-Dinitrophenol	0.149	0.133	0.01	10.7	100
4-Nitrophenol	0.243	0.237	0.01	2.5	100
Dibenzofuran	1.425	1.455	0.8	2.1	25.0
2,4-Dinitrotoluene	0.335	0.341	0.2	1.8	25.0
Diethylphthalate	1.222	1.196	0.01	2.1	100
Fluorene	1.123	1.163	0.9	3.6	25.0
4-Chlorophenyl-phenylether	0.520	0.555	0.4	6.7	25.0
4-Nitroaniline	0.255	0.231	0.01	9.4	100
2,4,6-Tribromophenol	0.245	0.272	0.01	11.0	100
4,6-Dinitro-2-methylphenol	0.150	0.134	0.01	10.7	100
N-Nitrosodiphenylamine (1)	0.471	0.456	0.01	3.2	100
4-Bromophenyl-phenylether	0.211	0.214	0.1	1.4	25.0
Hexachlorobenzene	0.287	0.284	0.1	1.0	25.0
Atrazine	0.165	0.164	0.01	0.6	100
Pentachlorophenol	0.116	0.091	0.05	21.6	25.0
Phenanthrene	1.031	0.977	0.7	5.2	25.0
Anthracene	0.988	0.958	0.7	3.0	25.0
Carbazole	2.899	2.800	0.01	3.4	100
Di-n-butylphthalate	1.386	1.295	0.01	6.6	100
Fluoranthene	1.058	1.025	0.6	3.1	25.0
Pyrene	1.008	0.986	0.6	2.2	25.0
Terphenyl-d14	0.595	0.591	0.5	0.7	25.0
Butylbenzylphthalate	0.632	0.598	0.01	5.4	100
3,3'-Dichlorobenzidine	0.356	0.358	0.01	0.6	100
Benzo(a)anthracene	0.938	0.943	0.8	0.5	25.0
Chrysene	0.888	0.876	0.7	1.4	25.0
Bis(2-Ethylhexyl)phthalate	0.976	0.975	0.01	0.1	100
Di-n-octylphthalate	1.597	1.549	0.01	3.0	100
Benzo(b)fluoranthene	1.169	1.187	0.7	1.5	25.0
Benzo(k)fluoranthene	1.050	1.052	0.7	0.2	25.0
Benzo(a)pyrene	0.943	0.971	0.7	3.0	25.0
Indeno(1,2,3-cd)pyrene	1.112	1.128	0.5	1.4	25.0
Dibenzo(a,h)anthracene	0.869	0.902	0.4	3.8	25.0
Benzo(g,h,i)perylene	0.942	0.938	0.5	0.4	25.0

FORM VII SV-2

BNA

Organic Sample Preparation Log

Parameter	OLM 4.2 LLS BND	Ext. Meth	SonMc	Na2SO4 Lot #	X43592	Extraction Date	06/16/03
Surr. MS/MSD				Alumina Lot		Concentration Date	06/17/03
Surrogate By	SBW			Reagent H2O Lot		Surrogate Code	E03ASURD07
Spike By	SBW	MeCl2 Lot #		H2SO4 Lot #		Spike Code	E03DSPK004
Extracted By	SBW	Acetone Lot#		NaOH Lot #		MS/MSD	E02KSPK609
Ext. Conc By	SBW	1:1 MeCL2 Acet. Lot#		Cont.EXT Start time			
Final Conc By	SBW			Cont. EXT Stop time		Witness	

Client	STL Sample #	Bottle Letter	Init pH/Cl2	Vol/Wt Extracted Gms / MLs	Surr. Volume (uls)	Matrix Spike Volume (uls)	C/U	Final Extract Volume (mls)	Soil pH	Sign Out COC	Comments
Blank	061603 -B03	N/A	N/A	30.0	500	N/A	GPC	1.5ml		N/A	
↓	061603 -B03FMS	↓		30.0		400				↓	
STL-Buff	208900 -01			30.0		N/A			7.26	SBW	
	-01MS			30.1		500			↓		
	-01MSD			30.0		↓					
	-02			30.6		N/A			7.74		
	-03			30.0					7.00		
	-04			30.0					7.28		
	-05			30.1					7.77		
	-06			30.1					7.25		
	-07			30.0					7.96		
	-08			30.5					7.76		
	-09			30.4					7.70		
↓	-10	↓	↓	30.0	↓	↓	↓	↓	7.89	↓	

STL CT Form# SPF00103.CT Reviewed by [signature] Date: 6/19/03 STL CT Logbook # SP1.74

Page 52 of 90

1839

11

1537/1539

NON-CONFORMANCE SUMMARY

Job#: A03-5602

STL Project#: NY3A9072
Site Name: Panamerican Environmental, Inc.

General Comments

The enclosed data have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A03-5602
Sample Cooler(s) were received at the following temperature(s); 4.4 °C
All samples were received in good condition.

Metals Data

Samples ZR-GW-09F, ZR-GW-01F, and ZR-GW-11F were filtered in the lab following preservation in the field. Analysis was performed with approval from client, however, protocol requires filtering prior to preservation.

The recovery of samples ZR-GW-09F MS and ZR-GW-09F SD fell below quality control limits for Lead. The sample result is more than four times greater than the spike added, therefore, no qualifier is needed. The LFB was acceptable.

After close review of this job it appears that the soluble sample ZR-GW-11F result for lead is greater than the total sample ZR-GW-11. The lab has re-digested the total as well as digested the soluble to assure that the original results were correct. Upon reviewing the redigested samples, it appears as though these results confirm the original results of the soluble being greater than the total sample.

****

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Susan L Man

per Brian J. Fischer
Project Manager

7/8/83

Date

PANAMERICAN ENVIRONMENTAL INC.

-9-

ICP SERIAL DILUTIONS

SAMPLE NO.

ZR-GW-09FL

Contract: NY02-457

Lab Code: STLBFLO Case No.: _____ SAS No.: _____ SDG NO.: A03-5602

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Lead	7028.79		8571.30		21.9	E	P

PANAMERICAN ENVIRONMENTAL INC.

-9-

ICP SERIAL DILUTIONS

SAMPLE NO.

ZR-GW-09L

ontract: NY02-457

Code: STLBFLO Case No.: SAS No.: SDG NO.: A03-5602

atrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Lead	8664.78		9766.40		12.7	E	P

NON-CONFORMANCE SUMMARY

Job#: A03-6689

STL Project#: NY3A9072
Site Name: Panamerican Environmental, Inc.

General Comments

The enclosed data have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

A03-6689
Sample Cooler(s) were received at the following temperature(s); AMBIENT °C
All samples were received in good condition.

Metals Data

The recovery of sample ZR-SED-01 MS and ZR-SED-01 SD fell below quality control limits for Lead. The sample result is more than four times greater than the spike added, therefore, no qualifiers are needed. The relative percent difference between ZR-SED-01 and ZR-SED-01 MD and between samples ZR-SED-01 MS and ZR-SED-01 SD exceeded quality control criteria for Lead. The LCS was compliant. Due to the non-homgenious nature of the sample, results are inconsistent from the base sample to the Matrix Duplicate, Matrix Spike, and Matrix Spike Duplicate. These results were verified by redigesting the samples.

****

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Brian J. Fischer
Project Manager

7-30-03
Date

STL BUFFALO

PANAMERICAN ENVIRONMENTAL INC.

-6-

DUPLICATES

SAMPLE NO.

ZR-SED-01 MD

Contract: NY02-457

Lab Code: STLBFLO Case No.: _____ SAS No.: _____ SDG NO.: A03-6689

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 86.8 % Solids for Duplicate: 86.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Lead		828.1658		61.5784		172.3	*	P

Peter Fairbanks
08/29/03 10:25 AM

To: bfischer@stl-inc.com
cc: Bob Henschel/Buffalo/URSCorp@URSCORP
Subject: Zurbrick Road - Data Review Questions for Job No. A03-5602, -5603, -5605, -6226, and -6689

Brian,

Please address the following data review questions and submit the requested information to the URS Corporation (Buffalo, NY Office) by September 3, 2003, so that the data review may be completed.

A. General Comments

1. The true values (TV) for the lead (Pb) CRDL standards are greater than 2 times the CRDL (i.e., range from 5 to 50 ug/L), as well as varying in concentration between analytical sequences (e.g., Job No. A03-5602). The TV for Pb should be 6 ug/L, per Method CLP-M (as referenced in NYSDEC ASP, June 20000. Please explain why the lab is not following Method CLP-M criteria.

In addition, some of the CRDL percent recoveries (%R) reported on Form 2B (i.e., Job No. A03-5602) for the 06/13/03 and 06/24/03 analytical sequences do not make sense. For example, the CRDL standard analyzed on 06/13/03 @ 12:51 (TV = 50 ug/L, found value = 10.26 ug/L, %R = 102.6%). The %R should be 20.5%. Please clarify and resubmit all necessary reporting forms with the correct TVs and %Rs.

B. Job No. A03-6226 (TCLP Pb)

1. The lab sample numbers on Cover Page-IN are not traceable to the Form 1s or raw data. Please clarify.

2. TCLP Pb was not requested on the COC. Please submit appropriate documentation (i.e., telephone record) indicating that TCLP Pb was added to the analytical program.

C. Job No. A03-5603

1. The metals serial dilution of sample ZR-TP-02 (3.5-5.5') exhibited very high %Ds (i.e., >100%) for several metals (i.e., Al, Ba, Ca, Cr, Co, Cu, Mg, Mn, Ni, K, V, and Zn). In accordance with EPA Region II data validation criteria, the affected metals results were rejected in the samples. It seems very suspicious that so many metals exhibited such high %Ds. The laboratory should have verified that the appropriate serial dilution was performed (1:5) by preparing a second serial dilution aliquot. Was this done? If not, why? Is it possible for the lab to reanalyze a second serial dilution?

Peter R. Fairbanks
Senior Chemist
URS Corporation
640 Ellicott Street, 3rd Floor
Buffalo, New York 14203
Tel: 716.856.5636, ext. 1121
Fax: 716.856.2545

bfischer@stl-inc.com
09/08/03 04:41 PM

To: Peter_Fairbanks@urscorp.com
cc:
Subject: FW: Zurbrick Road - Data Review Questions for Job No. A03-5602, -5603, -5605, -6226, and -6689

Pete,
Here is that e-mail without the large attachment. Apologize for the delays.

Brian

-----Original Message-----
From: Fischer, Brian
Sent: Monday, September 08, 2003 3:47 PM
To: 'Peter_Fairbanks@URSCorp.com'
Subject: RE: Zurbrick Road - Data Review Questions for Job No. A03-5602, -5603, -5605, -6226, and -6689

Pete,

In response to your questions below:

A. General comments

STL Buffalo performed this analysis using the most recent version of the EPA SOW, that being ILMO 5.2. Per previous discussion with Larry Bailey (verbal only) at the NYSDEC it is acceptable to perform analysis using this SOW, versus the previous SOW (ILM0 4.0), which ASP 2000 protocol was initially based upon. In ILMO 5.2, the CRQL for lead is 10 ug/l. It also specifies that the CRI standard be prepared at the CRQL. In the previous version, ILMO 4.0, the CRDL was 3.0 ug/l and the CRI standard was to be prepared at 2x the CRDL.

In addition, the CRDL standards in question were incorrectly entered into the processing software. Forms have been corrected and pages will be reissued under separate cover (copies attached).

B. Job No. A03-6226 (TCLP Pb)

1. The lab sample numbers on the Cover Page - IN are traceable via cross referencing the Sample ID with the Lab Sample ID on the Form I's or metals digestion log in order to trace to the the raw data runs.

2. Please see sections A2.3.1 and A2.3.3 of the Village of Depew QAPP/Work Plan for clarification as to the TCLP lead analysis.

C. Job No. A03-5603

1. STL Buffalo believes that the initial serial dilution analysed for this job was prepared incorrectly. We have reanalysed the serial dilution, and this data will be presented as an addendum to the original report (copies attached).

I have attached copies of any revised forms as a .pdf file for your review. Hard copies of all revisions will be sent to your attention.

Thank you for your patience!

Brian J. Fischer
Project Manager
Severn Trent Laboratories - Buffalo
t - (716) 691-2600
f - (716) 691-7991

-----Original Message-----
From: Peter_Fairbanks@URSCorp.com [mailto:Peter_Fairbanks@URSCorp.com]
Sent: Friday, August 29, 2003 10:26 AM
To: Fischer, Brian
Cc: Bob_Henschel@URSCorp.com
Subject: Zurbrick Road - Data Review Questions for Job No. A03-5602, -5603, -5605, -6226, and -6689

Brian,

Please address the following data review questions and submit the requested information to the URS Corporation (Buffalo, NY Office) by September 3, 2003, so that the data review may be completed.

A. General Comments

1. The true values (TV) for the lead (Pb) CRDL standards are greater than 2 times the CRDL (i.e., range from 5 to 50 ug/L), as well as varying in concentration between analytical sequences (e.g., Job No. A03-5602). The TV for Pb should be 6 ug/L, per Method CLP-M (as referenced in NYSDEC ASP, June 20000. Please explain why the lab is not following Method CLP-M criteria.

In addition, some of the CRDL percent recoveries (%R) reported on Form 2B (i.e., Job No. A03-5602) for the 06/13/03 and 06/24/03 analytical sequences do not make sense. For example, the CRDL standard analyzed on 06/13/03 @ 12:51 (TV = 50 ug/L, found value = 10.26 ug/L, %R = 102.6%). The %R should be 20.5%. Please clarify and resubmit all necessary reporting forms with the correct TVs and %Rs.

B. Job No. A03-6226 (TCLP Pb)

1. The lab sample numbers on Cover Page-IN are not traceable to

the Form 1s or raw data. Please clarify.

2. TCLP Pb was not requested on the COC. Please submit appropriate documentation (i.e., telephone record) indicating that TCLP Pb was added to the analytical program.

C. Job No. A03-5603

1. The metals serial dilution of sample ZR-TP-02 (3.5-5.5') exhibited very high %Ds (i.e., >100%) for several metals (i.e., Al, Ba, Ca, Cr, Co, Cu, Mg, Mn, Ni, K, V, and Zn). In accordance with EPA Region II data validation criteria, the affected metals results were rejected in the samples. It seems very suspicious that so many metals exhibited such high %Ds. The laboratory should have verified that the appropriate serial dilution was performed (1:5) by preparing a second serial dilution aliquot. Was this done? If not, why? Is it possible for the lab to reanalyze a second serial dilution?

Peter R. Fairbanks
Senior Chemist
URS Corporation
640 Ellicott Street, 3rd Floor
Buffalo, New York 14203
Tel: 716.856.5636, ext. 1121
Fax: 716.856.2545

A03-5602R1.pdf

bfischer@stl-inc.com
09/10/03 04:41 PM

To: Peter_Fairbanks@URSCorp.com
cc:
Subject: Revisions

Pete,
Attached are the revised Form I's for SDG #5603. As for the thallium, after review of data and other unreported runs, we did have a previous run that supports the current positive detection for Thallium. This previous run was not reported because the interference standard (ICSAB) was non-compliant. The run that was reported, did have all supporting QC in compliance, but, the Thallium was a negative value which could imply that there may have been a potential interference. Please let me know if you need more info.

<<A03-5603R2.pdf>>

Brian J. Fischer
Project Manager
Severn Trent Laboratories - Buffalo
t - (716) 691-2600
f - (716) 691-7991

A03-5603R2.pdf

SEVERN TRENT STL

September 9, 2003

Mr. John Berry
Panamerican Environmental, Inc.
2390 Clinton St.
Buffalo, NY 14227

RE: **REVISION** for Job A03-5602

Dear Mr. Berry:

Please find enclosed **revised** analytical forms concerning samples recently submitted by your firm. The data has been revised in response to data validation questions posed on 08/29/03. Revised pages have been numbered for replacement and insertion into the original report. The pertinent information regarding these analyses is listed below:

Site: Village of Depew – Groundwater
Project #: NY3A9072

We apologize for any inconvenience this may have caused. If you have any questions concerning these data, please contact the Program Manager at (716) 691-2600 and refer to the I.D. number listed below. It has been our pleasure to provide Panamerican Environmental, Inc. with environmental testing services. We look forward to serving you in the future.

Sincerely,

STL Buffalo

Brian J. Fischer
Program Manager

BJF/rtv
Enclosure

I.D. (#A03-5602)
#NY3A9072

Severn Trent Laboratories, Inc.
STL Buffalo • 10 Hazelwood Drive, Suite 106, Amherst, NY 14228
Tel 716 691 2600 Fax 716 691 7991 • www.stl-inc.com