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# PHASE II ENVIRONMENTAL SITE ASSESSMENT COMMERCE SQUARE CITY OF LOCKPORT, NIAGARA COUNTY, NEW YORK

Prepared for:

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**Niagara County Department of**  
**Economic Development**  
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**January 2010**

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## 1.0 INTRODUCTION AND BACKGROUND

### 1.1 Introduction and Purpose

The Niagara County Department of Economic Development has contracted Panamerican Environmental, Inc. (PEI) to conduct a Limited Phase II Environmental Site Assessment (ESA) of the Commerce Square Site, formerly the Harrison Radiator facility (refer to Figure 1). PEI previously completed a Phase I Environmental Site Assessment of the Site (*Phase I Environmental Site Assessment Commerce Square, City of Niagara Falls, Niagara County, New York, Prepared by PEI for Niagara County, July 2006*). Environmental concerns at the facility are associated with the past use of the property for the manufacturing of automobile parts including the existence of Underground Storage Tanks (USTs).

Information reviewed during the Phase I ESA included facility closure reports. The facility closure documentation (*Environmental Audit and Closure Evaluations, prepared by O'Brien & Gere for Harrison Radiator Division, May 1987 and Harrison Radiator Asbestos Removal - Phase I Buildings 1, 2, and 3 prepared by O'Brien & Gere for Harrison Radiator, April 12, 1988*) indicated that the complex was thoroughly cleaned when Harrison Radiator ended operation. Closure documentation identified a number of underground storage tanks (USTs) on the property (see attached Figure 2) including several USTs closed in place by filling with cement. Based on scope planning discussions with Niagara County, the focus of this Phase II ESA was directed at assessment of subsurface soils in the vicinity of the 12 USTs located on the property and identified in the closure report.

The first task of the Phase II program included the preparation and approval of a Site-Specific Brownfields Sampling, Analysis and Monitoring Plan (SAMP) which detailed the scope and procedures of the Phase II ESA.

The overall goals of the program were:

- Build upon the findings of the previous environmental reports completed for the property;
- Complete a soil assessment in the areas of the historic USTs; and
- Develop sufficient information to allow for subsequent additional investigations and/or development of remedial alternatives, if necessary, or property development.

### 1.2 Scope

The Phase II ESA included the installation of nine soil borings (refer to Figure 2) and



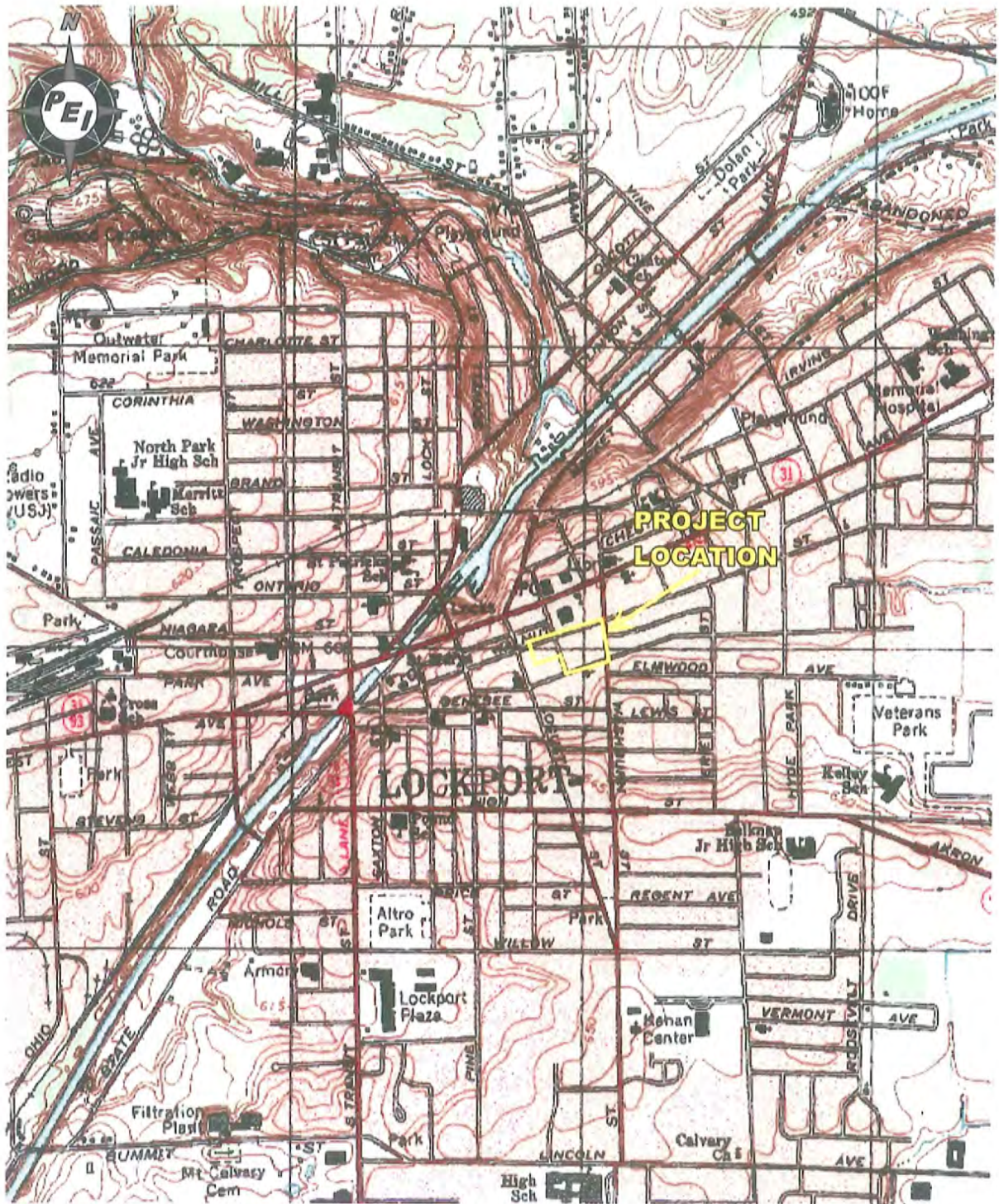
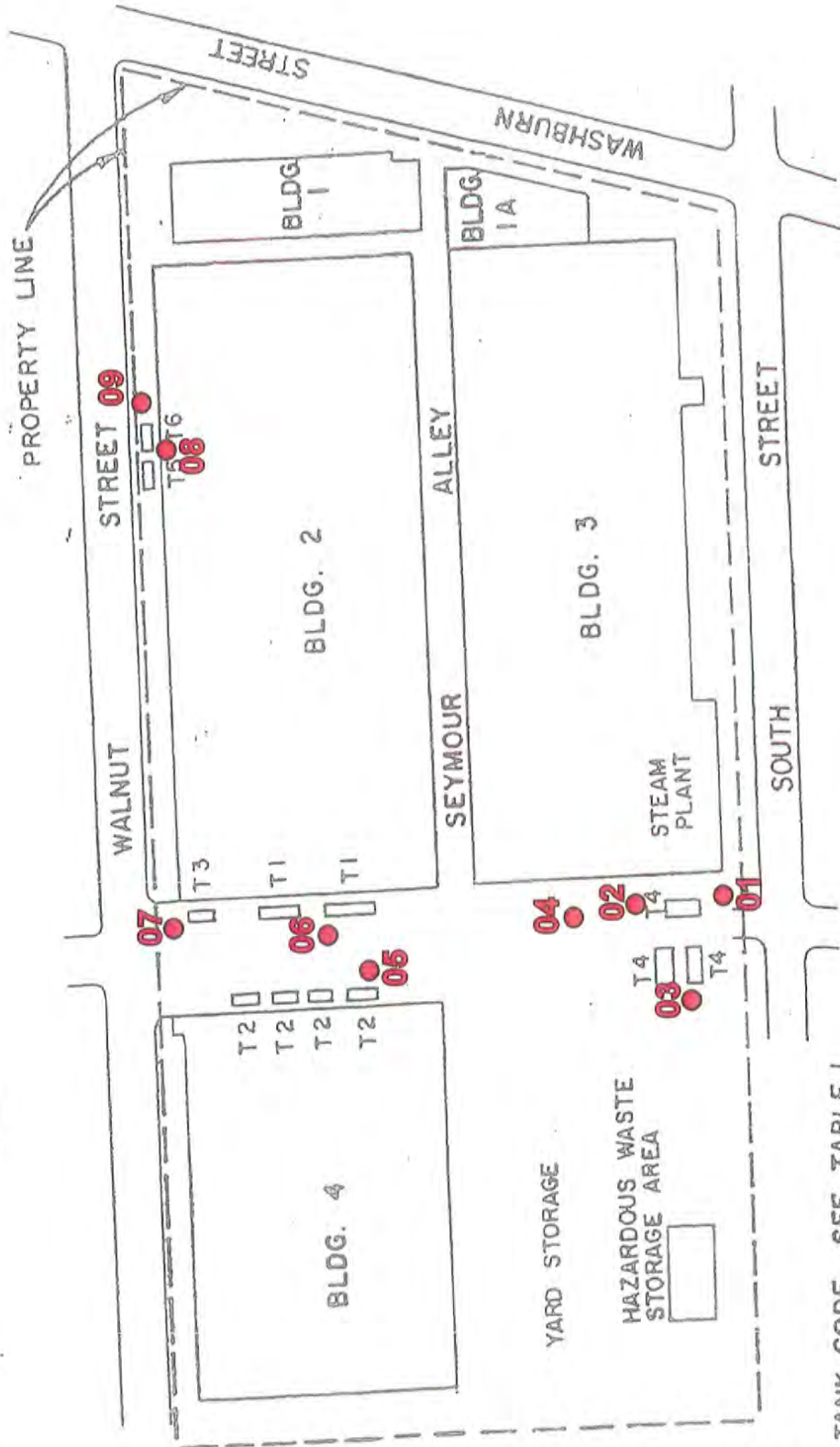


Figure 1. Project area location in City of Lockport, Niagara County, New York (USGS 7.5' Quadrangle, Lockport, NY).



HARRISON RADIATION DIVISION  
 LOCKPORT, NEW YORK

SITE PLAN AND UNDERGROUND  
 STORAGE TANK DECOMMISSIONING PLAN



KEY  
 T1 = TANK CODE, SEE TABLE I  
 FOR DESCRIPTION AND  
 DECOMMISSIONING ACTIVITIES

● - Approximate Soil Boring Locations

Figure 2. Approximate boring locations on site sketch

collection of boring soil samples in the general area occupied by the historic USTs described in Section 1.3-Background.

Field work was completed at the site on March 24, 2009. In general, all field activities were completed in accordance with the requirements of the approved SAMP. A summary of the field investigation methodology and findings is presented below in Section 2 (Soil Assessment). Photographs of the soil assessment field investigation activities are provided in Appendix C

### 1.3 Background

PEI completed the Phase I Environmental Site Assessment of the Commerce Square in July 2006. Environmental concerns at the facility were identified as being associated with the past use of the property for the manufacturing of automobile parts including use and storage of solvents, paints, petroleum, and other materials. Closure documentation indicates that most/all of this material was removed and areas cleaned, however, effects to the subsurface environment from 70 years of manufacturing are unknown. Chemical usage and waste generation was reportedly limited to drum quantities of degreasing solvents, glycol, acidic fluxes, and oils. Closure documents indicated that it was believed that there was never any on-site disposal of wastes. Wastes generated at the facility included scrap metal and metal shavings, waste oil, glycol and some hazardous wastes such as spent trichloroethylene (TCE), and naphtha used for degreasing, and metal-containing sludge. Twelve USTs were identified as located on the property. The closure report information identified that a total of twelve USTs were located on the property including:

- Two 10,000 -gallon tanks (identified as T1 on Figure 2) are shown located west of Building 2 possibly beneath Elm Street. These tanks reportedly contained Naphtha and were closed in 1960s by filling with water and later closed in 1986 by filling with concrete.

- Four 5,500-gallon tanks (T2) are shown located east of Building 4. These tanks contained gasoline/diesel and were closed and filled with water in 1960s and filled with concrete/removed in 1986.

- One 2,500-gallon tank (T3) was shown located west of Building 3 possibly beneath Elm Street. This tank contained liquid detergent and was closed in 1960s by filling with water and later closed in 1986 by filling with concrete.

- Three 20,000-gallon tanks (T4) were shown located adjacent to the storage yard and west of the boiler house. These tanks contained fuel oil and were reportedly removed in 1987.

- One 500-gallon tank (T5) was shown located north of Building 2 beneath the Walnut Street sidewalk. This tank was reportedly closed in 1960s by filling with



water and later closed in 1986 by filling with concrete.

- One 650-gallon tank (T6) was shown located north of Building 2 beneath the Walnut Street sidewalk. This tank was reportedly closed in 1960s by filling with water and later closed in 1986 by filling with concrete.

In 2005, NYSDEC Spill #9975547 indicated the removal of USTs in the Walnut Street right-of-way. This UST closure most likely involved the 500 and 650-gallon USTs identified above as well as a 1,000 gallon UST removed under the Walnut Street sidewalk adjacent to building 4. The spill was reported by the City of Lockport Sewer & Water Division when petroleum odors were noted by a worker repairing a fire hydrant. During UST closure activities the three USTs were removed, 145 tons of petroleum impacted soil was removed, 12,350-gallons of water were disposed and the spill was closed in 2005.

## **2.0 SOIL ASSESSMENT FIELD INVESTIGATION**

The site soil assessment field investigation was completed on March 24, 2009. In general, all field activities were completed in accordance with the requirements of the approved SAMP. A summary of the field investigation methodology and findings is presented below. Photographs of the soil assessment field investigation activities are provided in Appendix C.

### **2.1 Subsurface Soils Investigation**

The investigation consisted of advancing nine Geoprobe borings in the areas of the historic UST locations as shown on Figure 2. These were completed as follows:

- Borings 1-4 were advanced west of Building 3 in the T4 UST area.
- Borings 5-7 were advanced in the T2 and T1 UST areas between Buildings 2 and 4.
- Borings 8 and 9 were advanced along the north side of Building 2 in the T6 UST area.

Please note, due to the location of buried utilities, unknown location of the USTs and the fact that the areas investigated were road beds; the actual areas which were available to advance borings were limited. The field work was performed by PEI and Environmental Products and Services of Vermont (Geoprobe® operator). Borings were advanced to depths that ranged between 9 and 11 feet bgs (bedrock refusal) with the exception of borehole 1 with refusal at 1.5 feet bgs due to a concrete foundation. Borings were advanced using a fully equipped track-mounted Geoprobe® unit which employs direct push technology. Continuous soil sampling



was performed using Macro Core soil samplers measuring 44 inches in length and 1½ inches in diameter with acetate liners. Each of the samplers used was fitted with a new acetate liner prior to use. Field screening of all soil core samples for total volatile organic compounds (VOCs) was performed using a photoionization detector (PID) RAE Systems MiniRAE 2000. Observations of contamination (i.e., stains, odors, etc.) and PID readings were recorded in a field log and documented on the boring logs (Appendix A). The following is a summary of PID readings and observations recorded for each bore hole:

- BH-01 - 0.0 ppm
- BH-02 - 12.3 - 24.3 ppm between 4 and 9 feet bgs, slight petroleum odor
- BH-03 - 7.4 - 14.6 ppm between 4 and 10.5 feet bgs, slight petroleum odor
- BH-04 - 0.9 ppm between 2 and 4 feet bgs, slight petroleum odor
- BH-05 - 87.2 - 147 ppm between 4 and 10.8 feet bgs, petroleum odor
- BH-06 - 26.1 - 49.3 ppm between 4 and 8 feet bgs, solvent type odor
- BH-07 - 35.6 - 1146 ppm between 2 and 10 feet bgs, strong petroleum odor
- BH-08 - 0.0 ppm
- BH-09 - 4.5 - 15.2 ppm between 2 and 8 feet bgs, slight petroleum odor

A total of four soil samples were collected for laboratory analysis from the borings based on location, field observations (i.e. stains, odors, etc.) and PID readings as follows:

- One sample (CS-BH-02) was collected between 8 and 9 feet below grade surface (bgs) from Boring 02.
- One sample (CS-BH-05) was collected between 3.5 and 7 feet bgs from Boring 05.
- One sample (CS-BH-07) was collected between 6 and 7 feet bgs from Boring 07.
- One sample (CS-BH-09) was collected between 4 and 6 feet bgs from Boring 09.

Dedicated equipment was used to collect each sample. Soil samples were submitted to Test America, a New York State approved laboratory, and analyzed for Target Compound List (TCL) Volatiles (VOCs) and Semi-Volatiles compounds (SVOCs), Target Analyte List (TAL) Metals and PCBs as specified in the approved SAMP. Analytical results are discussed in Section 2.2.

In general, fill material consisting of concrete and asphalt with coarse to fine gravel and medium to fine sand and traces of topsoil and silt was observed in most boreholes between 0-2.5 feet bgs. The soils from 2.5 feet to bedrock (9 - 11 feet bgs) consists primarily of reddish brown, tight, silty clay with traces and intermitting

layers of medium to fine sand and/or coarse to fine gravel. The sand and gravel layers were moist to wet and appeared to be the source of petroleum odors and elevated PID readings. The groundwater table was not encountered in any of the borings. As noted, this area is basically a road bed with multiple utilities and re-worked soil/fill.

## **2.2 Soil Analytical Results**

Soil samples were submitted to Test America, a New York State Certified Laboratory, and analyzed for TCL VOCs and SVOCs, PCBs, and TAL Metal compounds. A summary of the analytical results from the soil sampling program are provided in Table 1. Table 1 also compares the results to the New York State Brownfields Cleanup Program Soil Cleanup Objectives as presented in 6 NYCRR Part 375-6.8 regulations. The complete set of soil analytical data and the Data Usability Summary Report (DUSR) are provided in Attachment B. Analytical results are discussed further below.

### **Volatile Organic Compounds**

A number of VOCs were detected in all four soil samples, however, at concentrations below NYSDEC Part 375 residential soil cleanup objectives.

### **Semi-Volatile Organic Compounds**

A number of SVOCs consisting primarily of polynuclear aromatic hydrocarbons (PAHs) were detected in all four soil samples, however, at concentrations below NYSDEC Part 375 residential soil cleanup objectives.

PAHs are a group of chemicals that are formed during incomplete burning of wood, coal, gas, garbage or other organic substances and are widely distributed in the environment and particularly in older urban environments where coal, gas, and petroleum were burned for heat and other energy uses. PAH compounds are common constituents of fill material found in urban environments, and are typically associated with both fill material, coal tar and asphalt based materials or ash.

In general, PAHs along with metal compounds are not very mobile in soils, in that they have low solubilities with water (these compounds are practically insoluble in water) and tend to adsorb to the soil grains. These compounds do not readily breakdown in the environment and PAHs deposited from combustion of coal or other fuels years ago would most likely still be present today. Based on the low volatility and their association with soil, the primary concern for potential human exposure to PAHs include inhalation or ingestion of contaminated dust as well as dermal contact.



**TABLE 1 - Commerce Square Soil Boring Analytical Results**

Sample Number	CS-BH-02	CS-BH-05	CS-BH-07	CS-BH-09	NYSDEC	NYSDEC	NYSDEC	NYSDEC
Sample Date	3/24/2009	3/24/2009	3/24/2009	3/24/2009	PART 375	PART 375	PART 375	PART 375
Sample Depth	8' - 9'	3.5' - 7'	6' - 7'	4' - 6'	Residential	Restricted-Residential	Commercial	Industrial
Compounds	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
<b>Metals</b>								
Aluminum	6410 J	10200 J	11000 J	10200 J	N/A	N/A	N/A	N/A
Arsenic	2.2 J	2.8	3.5	U	16	16	16	16
Barium	73.3 B	96.3 B	98.8 B	U	350	400	400	10,000
Beryllium	0.304 B	0.47 B	0.527 B	U	14	72	590	2,700
Cadmium	0.156 J	U	U	U	2.5	4.3	9.3	60
Calcium	44700 D08	53600 D08	54100 D08	56000 D08	N/A	N/A	N/A	N/A
Chromium	9.3	15.4	16.1	15.1	22	110	400	800
Cobalt	5.3 J	8.03 J	11.8 J	10.2 J	N/A	N/A	N/A	N/A
Copper	16.5	18.9	12.5	11.9	270	270	270	10,000
Iron	11500 J	18900 J	17500 J	19900 J	N/A	N/A	N/A	N/A
Lead	16.7	6.4	4.3	4.3	400	400	1,000	3,900
Magnesium	14100	10400	10500	9260	N/A	N/A	N/A	N/A
Manganese	535	439	646	627	2000	2000	10,000	10,000
Mercury	0.0287	U	U	U	0.81	0.81	2.8	5.7
Nickel	12.3	19.1	25.6	22.7	140	310	310	10,000
Selenium	U	U	U	1.0 J	36	180	1500	6,800
Potassium	1200	1690	1730	1650	N/A	N/A	N/A	N/A
Sodium	211	442	519	1260	N/A	N/A	N/A	N/A
Thallium	U	U	U	0.6 J	N/A	N/A	N/A	N/A
Vanadium	12.6	21.8	20.5	19.3	N/A	N/A	N/A	N/A
Zinc	180 J	43.9 J	51.2 J	47.6 J	2200	10000	10,000	10,000
<b>Semi-Volatile Organics</b>								
Acenaphthene	0.26 D02J	U	U	U	100	100	500	1,000
Anthracene	0.23 D02J	0.12 D02J	U	0.010 J	100	100	500	1,000
Benzo(a)anthracene	0.21 D02J	0.22 D02J	0.093 D02J	0.03 J	1	1	5.6	11
Benzo(a)pyrene	0.11 D02J	0.10 D02J	U	0.22 J	1	1	1	1.1
Benzo(b)fluoranthene	0.21 D02, ID4J	0.18 D02J	U	0.032 J	1	1	5.6	11
Benzo(g,h,l)perylene	U	U	U	0.014 J	100	100	500	1,000
Benzo(k)fluoranthene	U	U	U	0.014 J	1	3.9	56	110
Chrysene	0.14 D02J	0.20 D02J	U	0.031 J	1	3.9	56	110
Di-n-butyl phthalate	U	U	U	0.190 J	N/A	N/A	N/A	N/A
Fluoranthene	0.50 D02J	0.42 D02J	0.10 D02J	0.054 J	100	100	500	1,000
Flourene	0.32 D02J	0.190 D02J	U	0.025 J	100	100	500	1,000
Indeno(1,2,3-cd)pyrene	U	U	U	0.012 J	0.5	0.5	5.6	11
2-methylnaphthalene	U	U	1.10 D02J	U	N/A	N/A	N/A	N/A
Naphthalene	U	U	0.94 D02J	U	100	100	500	1,000
Phenanthrene	0.91 D02J	0.54 D02J	0.18 D02J	0.050 J	100	100	500	1,000
Pyrene	0.55 D02J	0.43 D02J	0.21 D02J	0.050 J	100	100	500	1,000
<b>Volatile Organics</b>								
1,2-Dichloroethene, Total	U	0.96	U	0.0041 J	N/A	N/A	N/A	N/A
Benzene	U	0.0044 J	U	U	2.9	4.8	44	89
cis-1,2-Dichloroethene	U	0.94	U	0.0041 J	59	100	500	1000
Isopropylbenzene	U	0.0068	0.60 D02	U	N/A	N/A	N/A	N/A
Toluene	U	0.015	U	U	100	100	500	1000
Trans-1,2Dichloroethene	U	0.021	U	U	100	100	500	1000
Vinyl chloride	U	0.11	U	U	0.21	0.9	13	27
Cyclohexane	0.0022 J	U	U	U	N/A	N/A	N/A	N/A
Ethylbenzene	0.0031 J	0.0085	U	U	30	41	390	780
Methylcyclohexane	0.0065	U	0.16 D02	0.005	N/A	N/A	N/A	N/A
Xylenes, Total	0.0017 J	0.018	0.93 D02	U	100	100	500	1000
Acetone	U	U	U	U	100	100	500	1,000
<b>TICs Total</b>	<b>15.9</b>	<b>118.2</b>	<b>79.9</b>	<b>27.51</b>				

N/A - Not Applicable U - Not Detected

bgs - below ground surface

Shading - Results above NYSDEC Residential Cleanup Objectives

B - Analyte was detected in the associated Method Blank.

D02 - Dilution required due to sample matrix effects

D08 - Dilution required due to high concentration of target analyte(s)

ID4 - Benzo(b)fluoranthene coelutes with Benzo(k)fluoranthene. The reported result is a summation of the isomers and the concentration is based on the response factor of Benzo(b)fluoranthene

J - Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.

## **PCBs**

PCBs were not detected in any of the four soil samples.

## **Metals**

Various metal compounds were detected in all four soil samples, however, at concentrations below the NYSDEC Part 375 residential soil cleanup objectives.

Most metals occur in nature and their concentrations in fill and natural soil will exhibit considerable variability both stratigraphically and spatially. This variability is related to the variable composition of the fill, natural soils' stratigraphy, weathering processes that chemically and physically modify soil and groundwater interactions that modify the geochemistry.

## **Tentatively Identified Compounds (TICs)**

As discussed in section 2.1 there were elevated PID readings (VOCs) recorded in seven of the nine borings along with the detection of petroleum odors. The degree of the elevated field PID readings does not correlate with the fairly low VOC concentrations detected in the laboratory soil samples. This suggests that the compounds in the impacted soil observed on field instruments are most likely associated with compounds which have degraded over time and are therefore not identifiable as specific known compounds using typical chemical analysis interpretation. To determine if there were degraded compounds in the soils the laboratory performed a Tentatively Identified Compounds (TICs) analysis from the existing VOC data files. This analysis suggests that a number of TICs were identified, many of which, appear to be petroleum derived compounds. The VOC related TICs have been totaled for each sample and presented in Table 1 and the complete TICs report is provided in Appendix B. The total TICs range from 15.9 ppm in sample CS-BH-02 to 118.2 ppm in sample CS-BH-05.

## **3.0 CONCLUSIONS**

In general, fill material consisting of concrete and asphalt with coarse to fine gravel and medium to fine sand and traces of topsoil and silt was observed in most boreholes between 0-2.5 feet bgs. The soils from 2.5 feet to bedrock (9 - 11 feet bgs) consists primarily of reddish brown, tight, silty clay with traces and intermitting layers of medium to fine sand and/or coarse to fine gravel. The sand and gravel layers were moist to wet. The groundwater table was not encountered in any of the



borings.

During the installation of the borings petroleum odors were observed and elevated PID readings (VOCs) recorded in seven of the nine borings. The highest PID readings recorded were in borehole 7 with a range of 35.6 to 1146 ppm.

The four soil sample collected and analyzed indicated the presents of a number of VOCs, SVOCs and metal compounds; however, there were no compound concentrations that exceeded the NYSDEC Part 375 residential soil cleanup objectives. In addition, PCBs were not detected in any of the four soil samples.

The elevated field PID readings and TICs, however, suggest that impacted soil exists at these locations. A number of TICs were identified, many of which, appear to be petroleum derived compounds. The TICs ranged from 15.9 ppm in sample CS-BH-02 to 118.2 ppm in sample CS-BH-05. New York State regulations require that any person with knowledge of a spill, leak or discharge of petroleum must report the incident to the New York State Department of Environmental Conservation (NYSDEC) within two hours of discovery (similar requirements apply to hazardous waste). The results of any inventory record, test, or inspection which shows a facility is leaking must be reported (6 NYCRR 613.8). The reporting requirement includes any person with knowledge such as an owner, operator, or consultant. Based on these results, the NYSDEC was contacted and subsequently responded that they have reviewed the analytical/site data and concluded that a spill has not occurred and the site will not be designated a spill site.

Please note NYSDEC regulations require that out-of-service USTs require proper closure in accordance with regulations.

**In summary, the investigation represents a limited assessment of subsurface conditions to determine if previous historic activity pertaining to the USTs significantly impacted subsurface soils. The analytical results from the limited number of soil samples provided in Table 1 were compared to NYSDEC Part 375-6.8 Soil Cleanup Objective values for four levels of development (residential, restricted residential, commercial and Industrial) as outlined in the Part 375 regulations. NYSDEC Part 375 regulations have been applied as guidelines for re-development of Brownfield sites. None of the sample compound concentrations exceeded soil cleanup objective values for the four levels of development. However, field observations and TICs suggest a release to the environment may have occurred. This analysis suggests that the soil is impacted in this area and that the compounds released into the environment have degraded. It should be noted that the actual UST locations were not confirmed and therefore, soil boring locations were selected in such a manner as to ensure a proper distance away from the assumed locations. In addition, the number of borings was limited due to utilities and refusal because of subsurface obstacles (roadbed and foundations). Therefore, the**



actual levels of compounds in soil may be greater adjacent to the actual tank locations.

**Recommendations:** As a result of NYSDEC's decision not to declare the site a spill site it is recommended that additional investigations of the site with regard to the UST area should not be undertaken unless the owner/future developer of the site enters into a formal agreement under one of the NYSDEC programs such as an Environmental Restoration Program or Brownfields Cleanup Program whereby further investigations of the site maybe required. Alternatively, if the site moves a head with development not under one of the programs just mentioned and environmental conditions are uncovered related to the USTs the NYSDEC may declare the site a spill site and further investigations and or remediation maybe required in accordance with the NYSDEC spill/tank closure requirements.

If, in the future, the owner enters into one of the NYSDEC programs mentioned above Part 375 guidelines suggest some form of remediation of the soils would most likely be required for re-development. Remedial efforts would likely include following NYSDEC spill and tank closure requirements. While this investigation was limited, it met the objective of the program to determining if environmental impacts to soil exist in the area of these USTs. Additional investigations concerning other areas of the property were outside the scope and objective of the Phase II and should be planned as part of assessments associated with additional property due diligence or a state or federal Brownfield's program just described.

Spill and UST closure will require remedial efforts that meet the petroleum spill clean-up guidelines under NYSDEC oversight. As noted above, Part 375 guidelines would only strictly apply if the owner or future owner entered into a formal agreement under one of the other NYSDEC programs. To enter into the NYSDEC Brownfield's Cleanup program under Part 375 guidelines, additional site assessments may be necessary and include additional soil investigations, groundwater evaluations and vapor intrusion studies along building interior walls. This program may also require the development of a Site Management Plan (SMP) to include Engineering Controls (EC) and Institutional Controls (IC) for future development of the site may be necessary. The SMP may include excavation and removal of some soils and/or placement of a cover of certified clean soil and/or asphalt/cement.

In general, engineering controls under Part 375 for the four levels of development may include the following:

Residential/Restricted Residential Use– Placing a two-foot thick cover of clean soil over the site. The top six inches of soil would be of sufficient quality to support vegetation. Clean soil would constitute soil that meets the Division of Environmental Remediation's criteria for backfill (DER-10) or with Part 375 Section 6.7. Non-



vegetated areas (buildings, roadways, parking lots, etc.) would be covered by a paving system or concrete at least 6 inches thick.

Commercial Use- Placing a one-foot thick cover of clean soil with the same details as residential use.

Industrial Use-No soil cover is required and the site may be shovel ready depending on completion of spill and UST closure remediation or other remediation required by regulations.

Other requirements may include approaches to mitigate exposure of construction workers, site occupants and/or the public during future development activities where any disturbance to the site soil will be required. Institutional controls under Part 375 may require an environmental easement (EE) be imposed on the site or portion of the site to be developed. The EE may limit the use and type of development within the easement. Institutional controls may also require the property owner to complete and submit to the NYSDEC a periodic certification by an environmental professional that institutional and engineering controls are being followed and adhered to.

#### **4.0 WARRANTS AND LIMITATIONS**

This report is based on information from a limited soil sampling investigation, organic vapor screening, and visual observations of the subsurface soils, as described within this report. As such, it does not represent an exhaustive assessment of subsurface conditions. Subsurface impacts may be present in site locations not assessed during this investigation.

This report is intended exclusively for the purpose outlined herein at the site location and project indicated. The property and this site assessment are limited to the footprint of the lot and the areas assessed.

This report is intended for the sole use of the Niagara County, United States Environmental Protection Agency and City of Lockport. The scope of services performed in this assessment may not be appropriate to satisfy the needs of other users and any use or re-use of this document or the findings, conclusions, or recommendations presented, is at the sole risk of the user.

The conclusions set forth in this report are based upon, and limited by, the analytical data and other information available to PEI. It should be noted that all surface and subsurface environmental assessments are inherently limited in the sense that conclusions are drawn and recommendations developed from information obtained from limited data and site evaluation at a specific time. The passage of time may result in a change in environmental circumstances at this site and surrounding

properties, or hazardous materials beneath the surface may be present but undetectable during this limited Phase II assessment.

Opinions and recommendations presented herein apply to the site conditions existing at the time of the subsurface assessment and those reasonably foreseeable. They cannot necessarily apply to site changes of which PEI is not aware and has not had the opportunity to evaluate.

## 5.0 REFERENCES

1. Phase I Environmental Site Assessment Commerce Square, City of Niagara Falls, Niagara County, New York, Prepared by PEI for Niagara County, July 2006.
2. Site-Specific Brownfields Sampling, Analysis and Monitoring Plan (SAMP) Revision 3, December 2008 for Commerce Square under Niagara County, New York Brownfields Assessment Demonstration Pilot Cooperative Agreement No. BP99290801-6.
3. Generic Brownfields Quality Assurance project plan (QAPP) Brownfields Pilot Cooperative Agreement Program (No. BP99290801-6), Commerce Square, Niagara County, New York.
4. New York State Department of Environmental Conservation (NYSDEC)-6 NYCRR Part 375 Environmental Remediation Program-Subparts 375-1 to 375-4 & 356-6, Effective December 14, 2006.
5. Environmental Audit and Closure Evaluations. Prepared by O'Brien & Gere for Harrison Radiator Division, May 1987 and Harrison Radiator Asbestos Removal - Phase I Buildings 1, 2, and 3 prepared by O'Brein & Gere for Harrison Radiator, April 12, 1988.



# **APPENDIX A**

## **Boring Logs**

**Panamerican Environmental, Inc.**  
 2390 Clinton Street  
 Buffalo, New York 14227

										<b>GEOPROBE LOG</b>	
										BORING NO.: CS-BH-01	
PROJECT: Commerce Square - City of Lockport										SHEET: 1 OF 1	
CLIENT: Niagara County Department of Development										JOB NO.: N/A	
BORING CONTRACTOR: Environmental Services of Vermont										BORING LOCATION: Near South Street	
GROUNDWATER: Not Observed										GROUND ELEVATION: NA	
DATE	TIME	LEVEL	TYPE		TYPE	CAS.	SAMPLER	CORE	TUBE	DATE STARTED: March 24, 2009	
					DIA.					DATE FINISHED: March 24, 2009	
					WT.					DRILLER: A. Morse	
					FALL					GEOLOGIST: J. Ryszkiewicz	
* POCKET PENETROMETER READING										REVIEWED BY: N/A	
DEPTH FEET	STRATA	SAMPLE				DESCRIPTION				CLASS USCS	REMARKS
		*S' NO.	CORE NO.	BLOVS PER 8'	RECOVERY RCD%	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION			
1					18/48	Black and Grey	Gravelly	Black and grey, concrete with traces of C-F (coarse to fine) gravel and M-F (medium to fine) sand			0.0 ppm Readings on Photoionization Detector
2								Refusal of boring at 1.5 feet bgs			
3											
4											
5											
6											
7											
8											

COMMENTS: Photoionization readings were taken with a Mini-Rae 2000.

PROJECT NO.: \_\_\_\_\_

BORING NO.: CS-BH-01



Panamerican Environmental, Inc.  
 2390 Clinton Street  
 Buffalo, New York 14227

										GEOPROBE LOG	
										BORING NO.: CS-BH-02	
PROJECT: Commerce Square - City of Lockport										SHEET: 1 OF 2	
CLIENT: Niagara County Department of Development										JOB NO.: N/A	
BORING CONTRACTOR: Environmental Services of Vermont										BORING LOCATION: Near South Street	
GROUNDWATER: Not Observed										GROUND ELEVATION: NA	
DATE	TIME	LEVEL	TYPE			CAS.	SAMPLER	CORE	TUBE	DATE STARTED: March 24, 2009	
										DATE FINISHED: March 24, 2009	
										DRILLER: A. Morse	
										GEOLOGIST: J. Ryszkiewicz	
										* POCKET PENETROMETER READING	
										REVIEWED BY: N/A	
DEPTH FEET	STRATA	SAMPLE				DESCRIPTION				REMARKS	
		*S NO.	CORE NO.	BLOWS PER 6'	RECOVERY %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS		
1					30/48	Black and Reddish Brown	Gravelly	Black and grey, concrete and asphalt with C-F (coarse to fine) gravel and M-F (medium to fine) sand with traces of topsoil and silt		0.0 ppm Readings on Photoionization Detector	
2											
3					30/48						0.0 ppm Readings on Photoionization Detector
4											
5								Reddish brown, very tight, silty clay with traces of M-F sand and C-F gravel. Layer was damp to wet, also had a slight odor of petroleum.		12.3 ppm Readings on Photoionization Detector	
6						Reddish Brown	Very Tight				
7					50/48						18.6 ppm Readings on Photoionization Detector
8											

COMMENTS: Photoionization readings were taken with a Mini-Rae 2000. A subsurface soil sample was taken from 96-108 inches below surface for TAI Metals, TCL Semi-Volatiles and TCL Volatiles

PROJECT NO.: \_\_\_\_\_

BORING NO.: CS-BH-02

**Panamerican Environmental, Inc.**  
 2390 Clinton Street  
 Buffalo, New York 14227

										<b>GEOPROBE LOG</b>	
										BORING NO.: CS-BH-02	
PROJECT: Commerce Square - City of Lockport										SHEET: 2 OF 2	
CLIENT: Niagara County Department of Development										JOB NO.: N/A	
BORING CONTRACTOR: Environmental Services of Vermont										BORING LOCATION: Near South Street	
GROUNDWATER: Not Observed										GROUND ELEVATION: NA	
DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE	DATE STARTED: March 24, 2009		
									DATE FINISHED: March 24, 2009		
									DRILLER: A. Morse		
									GEOLOGIST: J. Ryszkiewicz		
* POCKET PENETROMETER READING										REVIEWED BY: N/A	
DEPTH FEET	STRATA	SAMPLE				DESCRIPTION				CLASS USCS	REMARKS
		*S* NO.	CORE NO.	BLOWS PER 6"	RECOVERY ROD%	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION			
9					50 48	Reddish Brown	Very Tight	Reddish brown, very tight, silty clay with traces of M-F sand and C-F gravel. Layer was damp to wet, also had a slight odor of petroleum.			24.3 ppm Readings on Photoionization Detector
10								Refusal of boring at 9.1 feet bgs (Appeared to be limestone)			
11											
12											
13											
14											
15											
16											

COMMENTS: Photoionization readings were taken with a Mini-Rae 2000. A subsurface soil sample was taken from 96-108 inches below surface for TAL Metals, TCL Semi-Volatiles and TCL Volatiles.

PROJECT NO.: \_\_\_\_\_  
 BORING NO.: CS-BH-02

Panamerican Environmental, Inc.  
 2390 Clinton Street  
 Buffalo, New York 14227

										<b>GEOPROBE LOG</b>	
										BORING NO.: CS-BH-03	
PROJECT: Commerce Square - City of Lockport										SHEET: 1 of 2	
CLIENT: Niagara County Department of Development										JOB NO.: N/A	
BORING CONTRACTOR: Environmental Services of Vermont										BORING LOCATION: Near South Street	
GROUNDWATER: Not Observed										GROUND ELEVATION: NA	
DATE	TIME	LEVEL	TYPE			CAS.	SAMPLER	CORE	TUBE	DATE STARTED: March 24, 2009	
										DATE FINISHED: March 24, 2009	
										DRILLER: A. Morse	
										GEOLOGIST: J. Ryszkiewicz	
* POCKET PENETROMETER READING										REVIEWED BY: N/A	
DEPTH FEET	STRATA	SAMPLE				DESCRIPTION				REMARKS	
		*S NO.	CORE NO.	BLOVS PER 6'	RECOVERY RQDN	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS		
1					40/48	Black and Reddish Brown	Gravelly	Black and grey, concrete and asphalt with C-F (coarse to fine) gravel and M-F (medium to fine) sand with traces of topsoil and silt		0.0 ppm Readings on Photoionization Detector	
2											
3										0.0 ppm Readings on Photoionization Detector	
4						Reddish Brown	Very Tight	Reddish brown, very tight, silty clay with traces of M-F sand and C-F gravel. Layer had a slight odor of petroleum.			
5					45/48					7.4 ppm Readings on Photoionization Detector	
6						Reddish Brown	Tight	Reddish brown, tight, silty clay with traces of M-F sand and C-F gravel. Layer was moist, also had a slight odor of petroleum.			
7										14.6 ppm Readings on Photoionization Detector	
8					40/48	Reddish Brown	Tight	Reddish brown, tight, sandy clay with traces of silt and C-F gravel. Layer was damp to wet, also had a slight odor of petroleum.			

COMMENTS: Photoionization readings were taken with a Mini-Rae 2000

PROJECT NO.: \_\_\_\_\_

BORING NO.: CS-BH-03



**Panamerican Environmental, Inc.**  
 2390 Clinton Street  
 Buffalo, New York 14227

										<b>GEOPROBE LOG</b>	
										BORING NO.: CS-BH-03	
PROJECT: Commerce Square - City of Lockport										SHEET: 2 OF 2	
CLIENT: Niagara County Department of Development										JOB NO.: N/A	
BORING CONTRACTOR: Environmental Services of Vermont										BORING LOCATION: Near South Street	
GROUNDWATER: Not Observed										GROUND ELEVATION: NA	
DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE	DATE STARTED: March 24, 2009		
									DATE FINISHED: March 24, 2009		
									DRILLER: A. Morse		
									GEOLOGIST: J. Ryszkiewicz		
* POCKET PENETROMETER READING										REVIEWED BY: N/A	
DEPTH FEET	STRATA	SAMPLE					DESCRIPTION				REMARKS
		*S* NO.	CORE NO.	BLOWS PER 6'	RECOVERY ROD%	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION		CLASS USCS	
9					40 48	Reddish Brown	Tight	- Reddish brown, tight, sandy clay with traces of silt and C-F gravel. Layer was damp to wet, also had a slight odor of petroleum.			7.5 ppm Readings on Photoionization Detector
10								- Refusal of boring at 10.5 feet bgs (Appeared to be limestone)			
11											
12											
13											
14											
15											
16											

COMMENTS: Photoionization readings were taken with a Mini-Rae 2000. \_\_\_\_\_

PROJECT NO.: \_\_\_\_\_

BORING NO.: CS-BH-03

**Panamerican Environmental, Inc.**  
 2390 Clinton Street  
 Buffalo, New York 14227

						<b>GEOPROBE LOG</b>	
						BORING NO.: CS-BH-04	
PROJECT: Commerce Square - City of Lockport						SHEET: 1 of 2	
CLIENT: Niagara County Department of Development						JOB NO.: N/A	
BORING CONTRACTOR: Environmental Services of Vermont						BORING LOCATION: Near South Street	
GROUNDWATER: Not Observed						GROUND ELEVATION: NA	
DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
				DIA.			
				WT.			
				FALL			
* POCKET PENETROMETER READING						REVIEWED BY: N/A	

DEPTH FEET	STRATA	SAMPLE				DESCRIPTION				REMARKS
		'S' NO.	CORE NO.	BLOVS PER 6"	RECOVERY %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	
1					35/48	Black and Reddish Brown	Gravelly	- Black and grey, concrete and asphalt with C-F (coarse to fine) gravel and M-F (medium to fine) sand with traces of topsoil and silt		0.0 ppm Readings on Photoionization Detector
2						Reddish Brown	Tight	- Reddish brown, tight, silty clay with traces of M-F sand and C-F gravel. Layer was moist to wet, also had a slight odor of petroleum.		0.9 ppm Readings on Photoionization Detector
3										
4										
5					45/48					0.0 ppm Readings on Photoionization Detector
6						Reddish Brown	Very Tight	- Reddish brown, very tight, silty clay with traces of M-F sand and C-F gravel.		0.0 ppm Readings on Photoionization Detector
7					40/48					
8										

COMMENTS: Photoionization readings were taken with a Mini-Rae 2000.

PROJECT NO.: \_\_\_\_\_  
 BORING NO.: CS-BH-04

**Panamerican Environmental, Inc.**  
 2390 Clinton Street  
 Buffalo, New York 14227

										<b>GEOPROBE LOG</b>	
										BORING NO.: CS-BH-04	
PROJECT: Commerce Square - City of Lockport										SHEET: 2 OF 2	
CLIENT: Niagara County Department of Development										JOB NO.: N/A	
BORING CONTRACTOR: Environmental Services of Vermont										BORING LOCATION: Near South Street	
GROUNDWATER: Not Observed					CAS.	SAMPLER	CORE	TUBE	GROUND ELEVATION: NA		
DATE	TIME	LEVEL	TYPE		TYPE				DATE STARTED: March 24, 2009		
					DIA.				DATE FINISHED: March 24, 2009		
					WT.				DRILLER: A. Morse		
					FALL				GEOLOGIST: J. Ryszkiewicz		
					* POCKET PENETROMETER READING			REVIEWED BY: N/A			
DEPTH FEET	STRATA	SAMPLE				DESCRIPTION					REMARKS
		*S NO.	CORE NO.	BLOWS PER 6"	RECOVERY %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION		CLASS USCS	
9						Reddish Brown	Very Tight	- Reddish brown, very tight, silty clay with traces of M-F sand and C-F gravel.			0.0 ppm Readings on Photoionization Detector
10								- Refusal of boring at 10.0 feet bgs (Appeared to be limestone)			
11											
12											
13											
14											
15											
16											

COMMENTS: Photoionization readings were taken with a Mini-Rae 2000.

PROJECT NO.: \_\_\_\_\_

BORING NO.: CS-BH-04



Panamerican Environmental, Inc.  
 2390 Clinton Street  
 Buffalo, New York 14227

										GEOPROBE LOG	
										BORING NO.: CS-BH-05	
PROJECT: Commerce Square - City of Lockport										SHEET: 1 OF 2	
CLIENT: Niagara County Department of Development										JOB NO.: N/A	
BORING CONTRACTOR: Environmental Services of Vermont										BORING LOCATION: Building 4 Area	
GROUNDWATER: Not Observed										GROUND ELEVATION: NA	
DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE	DATE STARTED: March 24, 2009		
									DATE FINISHED: March 24, 2009		
									DRILLER: A. Morse		
									GEOLOGIST: J. Ryszkiewicz		
										* POCKET PENETROMETER READING	
										REVIEWED BY: N/A	
DEPTH FEET	STRATA	SAMPLE				DESCRIPTION				CLASS USCS	REMARKS
		*S' NO.	CORE NO.	BLOVS PER 5'	RECOVERY ROD%	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION			
1					42/48	Black and Reddish Brown	Gravelly	- Black and grey, concrete and asphalt with C-F (coarse to fine) gravel and M-F (medium to fine) sand with traces of topsoil and silt		0.0 ppm Readings on Photoionization Detector	
2											
3										0.0 ppm Readings on Photoionization Detector	
4											
5					47/48	Reddish Brown	Very Tight	- Reddish brown, very tight, silty clay with traces of M-F sand and C-F gravel. Layer had an odor of petroleum.		87.2 ppm Readings on Photoionization Detector	
6											
7										147 ppm Readings on Photoionization Detector	
8					41/48	Reddish Brown	Soft	- Reddish brown, soft, silty clay with traces of M-F sand and C-F gravel. Layer was damp to wet, also had an odor of petroleum.			

COMMENTS: Photoionization readings were taken with a Mini-Rae 2000. A subsurface soil sample was taken from 42-89 inches below surface for TAI Metals, TCL Semi-Volatiles and TCL Volatiles.

PROJECT NO.: \_\_\_\_\_  
 BORING NO.: CS-BH-05

**Panamerican Environmental, Inc.**  
 2390 Clinton Street  
 Buffalo, New York 14227

										<b>GEOPROBE LOG</b>				
										BORING NO.: CS-BH-05				
PROJECT: Commerce Square - City of Lockport										SHEET: 2 OF 2				
CLIENT: Niagara County Department of Development										JOB NO.: N/A				
BORING CONTRACTOR: Environmental Services of Vermont										BORING LOCATION: Building 4 Area				
GROUNDWATER: Not Observed										CAS.	SAMPLER	CORE	TUBE	GROUND ELEVATION: NA
DATE	TIME	LEVEL	TYPE		TYPE						DATE STARTED: March 24, 2009			
					DIA.						DATE FINISHED: March 24, 2009			
					WT.						DRILLER: A. Morse			
					FALL						GEOLOGIST: J. Ryszkiewicz			
										* POCKET PENETROMETER READING		REVIEWED BY: N/A		
DEPTH FEET	STRATA	SAMPLE				DESCRIPTION					REMARKS			
		*S NO.	CORE NO.	BLOWS PER 6'	RECOVERY %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS					
9														
10					41 48	Reddish Brown	Soft	Reddish brown, soft, silty clay with traces of M-F sand and C-F gravel. Layer was damp to wet, also had an odor of petroleum.				18.3 ppm Readings on Photoionization Detector		
11								Refusal of boring at 10.8 feet bgs (Appeared to be limestone)						
12														
13														
14														
15														
16														

COMMENTS: Photoionization readings were taken with a Mini-Rae 2000. A subsurface soil sample was taken from 96-108 inches below surface for TAI Metals, TCL Semi-Volatiles and TCL Volatiles.

PROJECT NO.: \_\_\_\_\_  
 BORING NO.: CS-BH-05



**Panamerican Environmental, Inc.**  
 2390 Clinton Street  
 Buffalo, New York 14227

										<b>GEOPROBE LOG</b>	
										BORING NO.: CS-BH-06	
PROJECT: Commerce Square - City of Lockport										SHEET: 1 OF 2	
CLIENT: Niagara County Department of Development										JOB NO.: N/A	
BORING CONTRACTOR: Environmental Services of Vermont										BORING LOCATION: Building 2 Area	
GROUNDWATER: Not Observed										GROUND ELEVATION: NA	
DATE	TIME	LEVEL	TYPE		TYPE	CAS.	SAMPLER	CORE	TUBE	DATE STARTED: March 24, 2009	
					DIA.					DATE FINISHED: March 24, 2009	
					WT.					DRILLER: A. Morse	
					FALL					GEOLOGIST: J. Ryszkiewicz	
* POCKET PENETROMETER READING										REVIEWED BY: N/A	
DEPTH FEET	STRATA	SAMPLE				DESCRIPTION				REMARKS	
		"S" NO.	CORE NO.	BLOVS PER 6"	RECOVERY %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS		
1					40/48	Black and Reddish Brown	Gravelly	- Black and grey, concrete and asphalt with C-F (coarse to fine) gravel and M-F (medium to fine) sand with traces of topsoil and silt		0.0 ppm Readings on Photoionization Detector	
2											
3										0.9 ppm Readings on Photoionization Detector	
4											
5					40/48	Reddish Brown	Tight	- Reddish brown, tight, silty clay with traces of M-F sand and C-F gravel. Layer was moist to wet, also had a solvent-type odor.		49.3 ppm Readings on Photoionization Detector	
6											
7					46/48					26.1 ppm Readings on Photoionization Detector	
8											

COMMENTS: Photoionization readings were taken with a Mini-Rae 2000

PROJECT NO.: \_\_\_\_\_

BORING NO.: CS-BH-06

Panamerican Environmental, Inc.  
 2390 Clinton Street  
 Buffalo, New York 14227

										<b>GEOPROBE LOG</b>	
										BORING NO.: CS-BH-06	
PROJECT: Commerce Square - City of Lockport										SHEET: 2 OF 2	
CLIENT: Niagara County Department of Development										JOB NO.: N/A	
BORING CONTRACTOR: Environmental Services of Vermont										BORING LOCATION: Near South Street	
GROUNDWATER: Not Observed										GROUND ELEVATION: NA	
DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE	DATE STARTED: March 24, 2009		
									DATE FINISHED: March 24, 2009		
									DRILLER: A. Morse		
									GEOLOGIST: J. Ryszkiewicz		
* POCKET PENETROMETER READING										REVIEWED BY: N/A	
DEPTH FEET	STRATA	SAMPLE				DESCRIPTION				CLASS USCS	REMARKS
		*S* NO.	CORE NO.	BLOWS PER 6"	RECOVERY RCD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION			
9					46 48	Reddish Brown	Tight	- Reddish brown, tight, silty clay with traces of M-F sand and C-F gravel. Layer was moist to wet, also had a solvent-type odor.			0.0 ppm Readings on Photoionization Detector
10											
11								Refusal of boring at 10.5 feet bgs (Appeared to be limestone)			
12											
13											
14											
15											
16											
COMMENTS: Photoionization readings were taken with a Mini-Rae 2000.										PROJECT NO.: _____	
										BORING NO.: CS-BH-06	



Panamerican Environmental, Inc.  
 2390 Clinton Street  
 Buffalo, New York 14227

										<b>GEOPROBE LOG</b>	
										BORING NO.: CS-BH-07	
PROJECT: Commerce Square - City of Lockport										SHEET: 1 OF 2	
CLIENT: Niagara County Department of Development										JOB NO.: N/A	
BORING CONTRACTOR: Environmental Services of Vermont										BORING LOCATION: Building 2 Area	
GROUNDWATER: Not Observed										GROUND ELEVATION: NA	
DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE	DATE STARTED: March 24, 2009		
									DATE FINISHED: March 24, 2009		
									DRILLER: A. Morse		
									GEOLOGIST: J. Ryszkiewicz		
* POCKET PENETROMETER READING										REVIEWED BY: N/A	

DEPTH FEET	STRATA	SAMPLE				DESCRIPTION				CLASS USCS	REMARKS
		*S* NO.	CORE NO.	BLOWS PER 6'	RECOVERY ROD%	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION			
1					40/48	Black and Reddish Brown	Gravelly	- Black and grey, concrete and asphalt with C-F (coarse to fine) gravel and M-F (medium to fine) sand with traces of topsoil and silt		0.0 ppm Readings on Photoionization Detector	
2											
3										35.6 ppm Readings on Photoionization Detector	
4											
5					41/48	Reddish Brown	Very Tight	- Reddish brown, very tight, silty clay with traces of M-F sand and C-F gravel. Layer had a strong odor of petroleum.		128 ppm Readings on Photoionization Detector	
6											
7										1146 ppm Readings on Photoionization Detector	
8					44/48						

COMMENTS: Photoionization readings were taken with a Mini-Rae 2000. A subsurface soil sample was taken from 72-84 inches below surface for TAI Metals, TCL Semi-Volatiles and TCL Volatiles.	PROJECT NO.: _____ BORING NO.: CS-BH-07
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**Panamerican Environmental, Inc.**  
 2390 Clinton Street  
 Buffalo, New York 14227

										<b>GEOPROBE LOG</b>				
										BORING NO.: CS-BH-07				
PROJECT: Commerce Square - City of Lockport										SHEET: 2 OF 2				
CLIENT: Niagara County Department of Development										JOB NO.: N/A				
BORING CONTRACTOR: Environmental Services of Vermont										BORING LOCATION: Building 2 Area				
GROUNDWATER: Not Observed										CAS.	SAMPLER	CORE	TUBE	GROUND ELEVATION: NA
DATE	TIME	LEVEL	TYPE		TYPE					DATE STARTED: March 24, 2009				
					DIA.					DATE FINISHED: March 24, 2009				
					WT.					DRILLER: A. Morse				
					FALL					GEOLOGIST: J. Ryszkiewicz				
* POCKET PENETROMETER READING										REVIEWED BY: N/A				
DEPTH FEET	STRATA	SAMPLE				DESCRIPTION				CLASS USCS	REMARKS			
		*S* NO.	CORE NO.	BLOWS PER 6"	RECOVERY ROCK	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION						
9					41 48	Reddish Brown	Very Tight	Reddish brown, very tight, silty clay with traces of M-F sand and C-F gravel. Layer had a strong odor of petroleum.		632 ppm Readings on Photoionization Detector				
10	*													
11								Refusal of boring at 10.4 feet bgs (Appeared to be limestone)						
12														
13														
14														
15														
16														

COMMENTS: Photoionization readings were taken with a Mini-Rae 2000. A subsurface soil sample was taken from 72-84 inches below surface for TAI Metals, TCL Semi-Volatiles and TCL Volatiles.

PROJECT NO.: \_\_\_\_\_  
 BORING NO.: CS-BH-07

Panamerican Environmental, Inc.  
 2390 Clinton Street  
 Buffalo, New York 14227

										<b>GEOPROBE LOG</b>	
										BORING NO.: CS-BH-08	
PROJECT: Commerce Square - City of Lockport										SHEET: 1 OF 2	
CLIENT: Niagara County Department of Development										JOB NO.: N/A	
BORING CONTRACTOR: Environmental Services of Vermont										BORING LOCATION: Front Building Area	
GROUNDWATER: Not Observed										GROUND ELEVATION: NA	
DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE	DATE STARTED: March 24, 2009		
									DATE FINISHED: March 24, 2009		
									DRILLER: A. Morse		
									GEOLOGIST: J. Ryszkiewicz		
* POCKET PENETROMETER READING										REVIEWED BY: N/A	
DEPTH FEET	STRATA	SAMPLE				DESCRIPTION				REMARKS	
		*S NO.	CORE NO.	BLOWS PER 6'	RECOVERY %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS		
1					35/48	Black and Reddish Brown	Gravelly	Black and grey, concrete with C-F (coarse to fine) gravel and M-F (medium to fine) sand with traces of topsoil and silt		0.0 ppm Readings on Photoionization Detector	
2						Grey and Black	Soft	Grey and black, soft, silty clay with C-F gravel and traces of M-F sand. Layer was moist.			
3										0.0 ppm Readings on Photoionization Detector	
4											
5					46/48	Reddish Brown	Very Tight	Reddish brown, very tight, silty clay with traces of M-F sand and C-F gravel. Layer was moist.		0.0 ppm Readings on Photoionization Detector	
6											
7					44/48					0.0 ppm Readings on Photoionization Detector	
8											

COMMENTS: Photoionization readings were taken with a Mini-Rae 2000.

PROJECT NO.: \_\_\_\_\_

BORING NO.: CS-BH-08



**Panamerican Environmental, Inc.**  
 2390 Clinton Street  
 Buffalo, New York 14227

										<b>GEOPROBE LOG</b>	
										BORING NO.: CS-BH-08	
PROJECT: Commerce Square - City of Lockport										SHEET: 2 OF 2	
CLIENT: Niagara County Department of Development										JOB NO.: N/A	
BORING CONTRACTOR: Environmental Services of Vermont										BORING LOCATION: Front Building Area	
GROUNDWATER: Not Observed										GROUND ELEVATION: NA	
DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE	DATE STARTED: March 24, 2009		
									DATE FINISHED: March 24, 2009		
									DRILLER: A. Morse		
									GEOLOGIST: J. Ryszkiewicz		
* POCKET PENETROMETER READING										REVIEWED BY: N/A	
DEPTH FEET	STRATA	SAMPLE				DESCRIPTION				CLASS USCS	REMARKS
		*S' NO.	CORE NO.	BLOYS PER 6'	RECOVERY ROD%	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION			
9					44 48	Reddish Brown	Very Tight	- Reddish brown, very tight, silty clay with traces of M-F sand and C-F gravel. Layer was moist.			0.0 ppm Readings on Photoionization Detector
10								- Refusal of boring at 10.3 feet bgs (Appeared to be limestone)			
11											
12											
13											
14											
15											
16											

COMMENTS: Photoionization readings were taken with a Mini-Rae 2000.

PROJECT NO.: \_\_\_\_\_  
 BORING NO.: CS-BH-08

**Panamerican Environmental, Inc.**  
 2390 Clinton Street  
 Buffalo, New York 14227

										<b>GEOPROBE LOG</b>	
										BORING NO.: CS-BH-09	
PROJECT: Commerce Square - City of Lockport										SHEET: 1 OF 2	
CLIENT: Niagara County Department of Development										JOB NO.: N/A	
BORING CONTRACTOR: Environmental Services of Vermont										BORING LOCATION: Front Building Area	
GROUNDWATER: Not Observed										GROUND ELEVATION: NA	
DATE	TIME	LEVEL	TYPE		TYPE	CAS.	SAMPLER	CORE	TUBE	DATE STARTED: March 24, 2009	
					DIA.					DATE FINISHED: March 24, 2009	
					WT.					DRILLER: A. Morse	
					FALL					GEOLOGIST: J. Ryszkiewicz	
* POCKET PENETROMETER READING										REVIEWED BY: N/A	
DEPTH FEET	STRATA	SAMPLE				DESCRIPTION				CLASS USCS	REMARKS
		*S* NO.	CORE NO.	BLOWS PER 8'	RECOVERY %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION			
1						Black and Reddish Brown	Gravelly	Black and grey, concrete with C-F (coarse to fine) gravel and M-F (medium to fine) sand with traces of topsoil and silt		0.0 ppm Readings on Photoionization Detector	
2					35/48	Reddish Brown	Soft	Reddish brown, soft, silty clay with traces of M-F sand and C-F gravel. Layer was damp.		6.8 ppm Readings on Photoionization Detector	
3										15.2 ppm Readings on Photoionization Detector	
4											
5					45/48	Reddish Brown	Very Tight	Reddish brown, very tight, silty clay with traces of M-F sand and C-F gravel. Layer had a slight odor of petroleum.		4.5 ppm Readings on Photoionization Detector	
6											
7					45/48						
8											

COMMENTS: Photoionization readings were taken with a Mini-Rae 2000. A subsurface soil sample was taken from 48-72 inches below surface for TAI Metals, TCL Semi-Volatiles and TCL Volatiles.

PROJECT NO.: \_\_\_\_\_

BORING NO.: CS-BH-09

**Panamerican Environmental, Inc.**  
 2390 Clinton Street  
 Buffalo, New York 14227

										<b>GEOPROBE LOG</b>	
										BORING NO.: CS-BH-09	
PROJECT: Commerce Square - City of Lockport										SHEET: 2 OF 2	
CLIENT: Niagara County Department of Development										JOB NO.: N/A	
BORING CONTRACTOR: Environmental Services of Vermont										BORING LOCATION: Front Building Area	
GROUNDWATER: Not Observed										GROUND ELEVATION: NA	
DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	CORE	TUBE	DATE STARTED: March 24, 2009		
				DIA.					DATE FINISHED: March 24, 2009		
				WT.					DRILLER: A. Morse		
				FALL					GEOLOGIST: J. Ryszkiewicz		
* POCKET PENETROMETER READING										REVIEWED BY: N/A	
DEPTH FEET	STRATA	SAMPLE				DESCRIPTION				CLASS USCS	REMARKS
		*S* NO.	CORE NO.	BLOVS PER 6'	RECOVERY ROD%	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION			
9				45/48		Reddish Brown	Very Tight	Reddish brown, very tight, silty clay with traces of M-F sand and C-F gravel.		0.9 ppm Readings on Photoionization Detector	
10											
11								Refusal of boring at 10.3 feet bgs (Appeared to be limestone)			
12											
13											
14											
15											
16											

COMMENTS: Photoionization readings were taken with a Mini-Rae 2000. A subsurface soil sample was taken from 48-72 inches below surface for TAI Metals, TCL Semi-Volatiles and TCL Volatiles.

PROJECT NO.: \_\_\_\_\_  
 BORING NO.: CS-BH-09



## **APPENDIX B**

### **Analytical Data Usability Summary Report & Tentatively Identified Compounds (TICs) Report**



June 4, 2009

Mr. John Berry  
Panamerican Environmental, Inc.  
2390 Clinton Street  
Buffalo, New York 14227

**RE: Data Usability Summary Report (DUSR)  
Commerce Square Project  
Test America (Buffalo), Amherst, NY  
Lab Work Order No. RSC0813  
Soil / Solid Samples  
Analyses for Volatile Organics, Semi-Volatile Organics (Base/Neutral and Acid Extractables),  
Polychlorinated Biphenyls (PCBs) and Inorganics (Metals)**

Dear Mr. Berry:

Data Usability Summary Report (DUSR) technical services were performed by ChemWorld Environmental, Inc. for the Commerce Square Project for the soil / solid sampling event of March 24, 2009. The DUSR review was performed in accordance with United States Environmental Protection Agency (USEPA) Region II data validation guidelines and New York State Department of Environmental Conservation (NYSDEC) Analytical Service Protocols (ASP) requirements, where applicable.

The analytical data from Lab Work Order No. RSC0813 was reviewed (screened) for the parameters noted. The data screening consisted of a review of the Quality Control (QC) Summary Forms and a brief review of various chromatograms and quantitation reports. The QC Forms were reviewed to determine whether any data required qualification based upon QC deviations noted on the Forms. The associated Analytical Data Result Forms are included as Attachment A. These Forms include data qualifiers as described within this letter report. Unless otherwise noted, all results included on the Forms are considered usable, based upon the DUSR review items noted below. Attachment B includes copies of the associated Case Narratives and the Chain-of-Custody forms.

The DUSR review items include the following, as method appropriate:

- Completeness of Data Package
- Chain-of-Custody Review
- Holding Times from Collection
- Surrogate Recovery
- GC/MS Instrument Performance Check
- Initial and Continuing Calibration
- Matrix Spike / Matrix Spike Duplicates (MS/MSD)
- Matrix Spike Blanks (MSB)
- Internal Standards
- Method and Field Blanks
- CRDL Standards for ICP
- Laboratory Duplicate Samples
- Laboratory Control Samples (LCS)
- ICP Interference Check
- ICP Serial Dilution

The QC Summary Forms included various deviations based upon the acceptable limits for quality control. The following should be noted regarding qualification of the data set for the review items above.



Volatiles – Soil / Solid, Lab Work Order No. RSC0813

*Continuing Calibration:* Three continuing calibrations analyzed on 03/26/09 at 11:04, 03/30/09 at 19:46 and 04/06/09 at 10:24 generated Percent Difference (%D's) of greater than the 25% limit for various Volatile compounds in the range of 26.9% to 68.1%. The compounds included Chloroethane, Dichlorodifluoromethane, Methyl Acetate, Vinyl Acetate, 1,2-Dibromo-3-chloropropane, Bromoform, Carbon Disulfide, Chlorodibromomethane, Methyl-t-butyl ether and Methylene Chloride. The associated samples were qualified as 'J', estimated, for the positive results and 'UJ', estimated, for the non-detectable results for these compounds.

*Method Blanks:* Three soil method blanks were analyzed for the associated samples. Acetone and Toluene were detected in 1 of the 3 Method Blanks. Acetone was detected at 6.0 ug/Kg and Toluene was detected at 1.0 ug/Kg. A limit of ten times these results were used for review and qualification of the associated soil samples. Sample results found to be less than the Method Blank limit and reported at less than the Contract Required Quantitation Limit (CRQL), were qualified as 'U', not detected, at the CRQL. Sample results reported over the CRQL but less than the Method Blank limit were qualified as 'U', not detected. Sample results that exceed the respective blank limit do not require qualification.

Semi-Volatiles – Soil / Solid, Lab Work Order No. RSC0813

*Continuing Calibration:* One continuing calibration analyzed on 04/02/09 at 14:21 generated a %D of 28.0% for 2,4-Dinitrophenol (Limit 25%). The associated samples were qualified as 'UJ', estimated, for the non-detectable results for 2,4-Dinitrophenol. Positive results were not detected for this compound.

PCBs – Soil / Solid, Lab Work Order No. RSC0813

Qualification of the data set for PCB's was not required. The associated quality control information was found to be generated within acceptable limits.

Inorganics – Soil / Solid, Lab Work Order No. RSC0813

*Matrix Spike (MS):* One set of site-specific MS and MS Duplicate samples for CS-BH-07 were analyzed for the soil samples. Low spike recovery for was generated for Antimony at 35% and 29% (Limit 75-125). The soil samples were qualified as 'UJ', estimated, for the non-detectable results for Antimony. Positive results were not detected.

*Laboratory Control Sample (LCS):* One LCS (Standard Reference) was analyzed with the soil / solid samples. Low recovery was generated for Aluminum, Antimony and Iron in the range of 68% to 78% (Limit 80-120). The soil samples were qualified as 'J', estimated, for the positive results and 'UJ', estimated, for the non-detectable results for these Inorganics.

*ICP Serial Dilution:* The following inorganics generated %D's of greater than 10% for Serial Dilution for CS-BH-07:

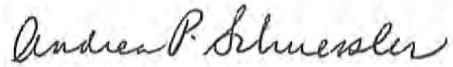
Arsenic	50%
Cobalt	12%
Zinc	14%

The associated sample results for the inorganics noted above were qualified as 'J', estimated, for the positive results, where the sample result exceeds 50 times the respective Instrument Detection Limit (IDL).



Please contact me by telephone or Fax at 301-294-6144, should you require additional information or clarification regarding this Letter Report.

Sincerely,

A handwritten signature in cursive script that reads "Andrea P. Schuessler".

Andrea P. Schuessler, CHMM  
ChemWorld Environmental, Inc.

c: PA-2009.3 file

## **ORGANIC DATA QUALIFIERS**

- U -** Indicates that the compound was analyzed for, but not detected at or above the Contract Required Quantitation Limit (CRQL), or the compound is not detected due to qualification through the method or field blank.
- J -** The associated numerical value is an estimated quantity.
- JN -** Tentatively identified with approximated concentrations (Volatile and Semi-Volatile Organics). Presumptively present at an approximated quantity (Pesticides/PCBs).
- UJ -** The compound was analyzed for, but not detected. The sample quantitation limit is an estimated quantity due to variance from quality control limits.
- C -** Applies to Pesticide results where the identification has been confirmed by GC/MS.
- E -** Reported value is estimated due to quantitation above the calibration range.
- D -** Reported result taken from diluted sample analysis.
- A -** Aldol condensation product.
- R -** Reported value is unusable and rejected due to variance from quality control limits.
- NA -** Not Analyzed.

**INORGANIC DATA QUALIFIERS**

- U -** Indicates analyte not detected at or above the Contract Required Detection Limit (CRDL), or the compound is not detected due to qualification through the method or field blank.
- B -** Indicates analyte result is between Instrument Detection Limit (IDL) and CRDL.
- J -** The reported value is estimated due to variance from quality control limits.
- UJ -** The element was analyzed for, but not detected. The sample quantitation limit is an estimate due to variance from quality control limits.
- E -** Reported value is estimated because of the presence of interference.
- R -** Reported value is unusable and rejected due to variance from quality control limits.
- NA -** Not analyzed.



**ATTACHMENT A**

Form 1  
ORGANIC ANALYSIS DATA SHEET

CS-BH-02

8260B

Laboratory: TestAmerica Buffalo SDG:  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-01 File ID: F7714.D  
 Sampled: 03/24/09 10:15 Prepared: 03/26/09 08:43 Analyzed: 03/26/09 12:38  
 Solids: 86.40 Preparation: 5030B MS Initial/Final: 8.26 g / 5 mL  
 Batch: 9C26011 Sequence: RC92607 Calibration: R9C1304 Instrument: HP5973F

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q
71-55-6	1,1,1-Trichloroethane	1	3.5	UD
79-34-5	1,1,2,2-Tetrachloroethane	1	3.5	UD
79-00-5	1,1,2-Trichloroethane	1	3.5	UD
76-13-1	1,1,2-Trichlorotrifluoroethane	1	3.5	UD
75-34-3	1,1-Dichloroethane	1	3.5	UD
75-35-4	1,1-Dichloroethene	1	3.5	UD
120-82-1	1,2,4-Trichlorobenzene	1	3.5	UD
96-12-8	1,2-Dibromo-3-chloropropane	1	3.5	UD
106-93-4	1,2-Dibromoethane (EDB)	1	3.5	UD
95-50-1	1,2-Dichlorobenzene	1	3.5	UD
107-06-2	1,2-Dichloroethane	1	3.5	UD
540-59-0	1,2-Dichloroethene, Total	1	7.0	UD
78-87-5	1,2-Dichloropropane	1	3.5	UD
541-73-1	1,3-Dichlorobenzene	1	3.5	UD
106-46-7	1,4-Dichlorobenzene	1	3.5	UD
78-93-3	2-Butanone (MEK)	1	18	UD
591-78-6	2-Hexanone	1	18	UD
108-10-1	4-Methyl-2-pentanone (MIBK)	1	18	UD
67-64-1	Acetone	1	15 (1.8 u)	UD
71-43-2	Benzene	1	3.5	UD
75-27-4	Bromodichloromethane	1	3.5	UD
75-25-2	Bromoform	1	3.5	UD
74-83-9	Bromomethane	1	7.0	UD
75-15-0	Carbon disulfide	1	3.5	UD
56-23-5	Carbon Tetrachloride	1	3.5	UD
108-90-7	Chlorobenzene	1	3.5	UD
124-48-1	Chlorodibromomethane	1	3.5	UD
75-00-3	Chloroethane	1	7.0	UD J
67-66-3	Chloroform	1	3.5	UD
74-87-3	Chloromethane	1	7.0	UD
156-59-2	cis-1,2-Dichloroethene	1	3.5	UD
10061-01-5	cis-1,3-Dichloropropene	1	3.5	UD
110-82-7	Cyclohexane	1	2.2	JD
75-71-8	Dichlorodifluoromethane	1	3.5	UD J
100-41-4	Ethylbenzene	1	3.1	JD
98-82-8	Isopropylbenzene	1	3.5	UD
79-20-9	Methyl Acetate	1	3.5	UD J
1634-04-4	Methyl tert-Butyl Ether	1	3.5	UD
108-87-2	Methylcyclohexane	1	6.5	D

Form 1  
ORGANIC ANALYSIS DATA SHEET  
8260B

CS-BH-02

Laboratory: TestAmerica Buffalo SDG:  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-01 File ID: F7714.D  
 Sampled: 03/24/09 10:15 Prepared: 03/26/09 08:43 Analyzed: 03/26/09 12:38  
 Solids: 86.40 Preparation: 5030B MS Initial/Final: 8.26 g / 5 mL  
 Batch: 9C26011 Sequence: RC92607 Calibration: R9C1304 Instrument: HP5973F

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q		
75-09-2	Methylene Chloride	1	3.5	UD		
100-42-5	Styrene	1	3.5	UD		
127-18-4	Tetrachloroethene	1	3.5	UD		
108-88-3	Toluene	1	3.5	UD		
156-60-5	trans-1,2-Dichloroethene	1	3.5	UD		
10061-02-6	trans-1,3-Dichloropropene	1	3.5	UD		
79-01-6	Trichloroethene	1	3.5	UD		
75-69-4	Trichlorofluoromethane	1	3.5	UD		
108-05-4	Vinyl acetate	1	18	UD J		
75-01-4	Vinyl chloride	1	7.0	UD		
1330-20-7	Xylenes, total	1	1.7	JD		
SYSTEM MONITORING COMPOUND		ADDED (ug/kg)	CONC (ug/kg)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4		50.0	52.9	106	64 - 126	
4-Bromofluorobenzene		50.0	53.2	106	72 - 126	
Toluene-d8		50.0	56.5	113	71 - 125	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4		374768	9.41	566225	9.41	
1,4-Difluorobenzene		902638	4.35	1359773	4.35	
Chlorobenzene-d5		405843	6.96	596038	6.96	

\* Values outside of QC limits



**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**

CS-BH-05

8260B

Laboratory: TestAmerica Buffalo SDG:  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-02 File ID: F7715.D  
 Sampled: 03/24/09 12:00 Prepared: 03/26/09 08:43 Analyzed: 03/26/09 13:04  
 Solids: 86.20 Preparation: 5030B MS Initial/Final: 6.41 g / 5 mL  
 Batch: 9C26011 Sequence: RC92607 Calibration: R9C1304 Instrument: HP5973F

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q
71-55-6	1,1,1-Trichloroethane	1	4.5	UD
79-34-5	1,1,2,2-Tetrachloroethane	1	4.5	UD
79-00-5	1,1,2-Trichloroethane	1	4.5	UD
76-13-1	1,1,2-Trichlorotrifluoroethane	1	4.5	UD
75-34-3	1,1-Dichloroethane	1	4.5	UD
75-35-4	1,1-Dichloroethene	1	4.5	UD
120-82-1	1,2,4-Trichlorobenzene	1	4.5	UD
96-12-8	1,2-Dibromo-3-chloropropane	1	4.5	UD
106-93-4	1,2-Dibromoethane (EDB)	1	4.5	UD
95-50-1	1,2-Dichlorobenzene	1	4.5	UD
107-06-2	1,2-Dichloroethane	1	4.5	UD
540-59-0	1,2-Dichloroethene, Total	1	960	DE
78-87-5	1,2-Dichloropropane	1	4.5	UD
541-73-1	1,3-Dichlorobenzene	1	4.5	UD
106-46-7	1,4-Dichlorobenzene	1	4.5	UD
78-93-3	2-Butanone (MEK)	1	23	UD
591-78-6	2-Hexanone	1	23	UD
108-10-1	4-Methyl-2-pentanone (MIBK)	1	23	UD
67-64-1	Acetone	1	29 U	D
71-43-2	Benzene	1	4.4	JD
75-27-4	Bromodichloromethane	1	4.5	UD
75-25-2	Bromoform	1	4.5	UD
74-83-9	Bromomethane	1	9.0	UD
75-15-0	Carbon disulfide	1	4.5	UD
56-23-5	Carbon Tetrachloride	1	4.5	UD
108-90-7	Chlorobenzene	1	4.5	UD
124-48-1	Chlorodibromomethane	1	4.5	UD
75-00-3	Chloroethane	1	9.0	UDJ
67-66-3	Chloroform	1	4.5	UD
74-87-3	Chloromethane	1	9.0	UD
156-59-2	cis-1,2-Dichloroethene	1	940	DE
10061-01-5	cis-1,3-Dichloropropene	1	4.5	UD
110-82-7	Cyclohexane	1	4.5	UD
75-71-8	Dichlorodifluoromethane	1	4.5	UDJ
100-41-4	Ethylbenzene	1	8.5	D
98-82-8	Isopropylbenzene	1	6.8	D
79-20-9	Methyl Acetate	1	4.5	UDJ
1634-04-4	Methyl tert-Butyl Ether	1	4.5	UD
108-87-2	Methylcyclohexane	1	4.5	UD

Form 1

## ORGANIC ANALYSIS DATA SHEET

CS-BH-05

8260B

Laboratory: TestAmerica Buffalo SDG:  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-02 File ID: F7715.D  
 Sampled: 03/24/09 12:00 Prepared: 03/26/09 08:43 Analyzed: 03/26/09 13:04  
 Solids: 86.20 Preparation: 5030B MS Initial/Final: 6.41 g / 5 mL  
 Batch: 9C26011 Sequence: RC92607 Calibration: R9C1304 Instrument: HP5973F

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q	
75-09-2	Methylene Chloride	1	4.5		UD	
100-42-5	Styrene	1	4.5		UD	
127-18-4	Tetrachloroethene	1	4.5		UD	
108-88-3	Toluene	1	15		D	
156-60-5	trans-1,2-Dichloroethene	1	21		D	
10061-02-6	trans-1,3-Dichloropropene	1	4.5		UD	
79-01-6	Trichloroethene	1	4.5		UD	
75-69-4	Trichlorofluoromethane	1	4.5		UD	
108-05-4	Vinyl acetate	1	23		UD	
75-01-4	Vinyl chloride	1	110		D	
1330-20-7	Xylenes, total	1	18		D	
SYSTEM MONITORING COMPOUND		ADDED (ug/kg)	CONC (ug/kg)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4		50.0	52.7	105	64 - 126	
4-Bromofluorobenzene		50.0	48.8	98	72 - 126	
Toluene-d8		50.0	59.2	118	71 - 125	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4		524345	9.41	566225	9.41	
1,4-Difluorobenzene		1338968	4.35	1359773	4.35	
Chlorobenzene-d5		620713	6.96	596038	6.96	

\* Values outside of QC limits

Form 1  
ORGANIC ANALYSIS DATA SHEET  
8260B

CS-BH-05

Laboratory: TestAmerica Buffalo SDG:  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-02RE1 File ID: G9586.D  
 Sampled: 03/24/09 12:00 Prepared: 04/06/09 10:00 Analyzed: 04/06/09 17:48  
 Solids: 86.20 Preparation: Methanol Prep Initial/Final: 6.43 g / 250 mL  
 Batch: 9D06045 Sequence: RD90608 Calibration: R9D0214 Instrument: HP5973G

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q
71-55-6	1,1,1-Trichloroethane	4	45	UD
79-34-5	1,1,2,2-Tetrachloroethane	4	45	UD
79-00-5	1,1,2-Trichloroethane	4	45	UD
76-13-1	1,1,2-Trichlorotrifluoroethane	4	45	UD
75-34-3	1,1-Dichloroethane	4	45	UD
75-35-4	1,1-Dichloroethene	4	45	UD
120-82-1	1,2,4-Trichlorobenzene	4	45	UD
96-12-8	1,2-Dibromo-3-chloropropane	4	45	UD
106-93-4	1,2-Dibromoethane (EDB)	4	45	UD
95-50-1	1,2-Dichlorobenzene	4	45	UD
107-06-2	1,2-Dichloroethane	4	45	UD
540-59-0	1,2-Dichloroethene, Total	4	2400	D
78-87-5	1,2-Dichloropropane	4	45	UD
541-73-1	1,3-Dichlorobenzene	4	45	UD
106-46-7	1,4-Dichlorobenzene	4	45	UD
78-93-3	2-Butanone (MEK)	4	230	UD
591-78-6	2-Hexanone	4	230	UD
108-10-1	4-Methyl-2-pentanone (MIBK)	4	230	UD
67-64-1	Acetone	4	230	UD
71-43-2	Benzene	4	45	UD
75-27-4	Bromodichloromethane	4	45	UD
75-25-2	Bromoform	4	45	UD
74-83-9	Bromomethane	4	45	UD
75-15-0	Carbon disulfide	4	45	UD
56-23-5	Carbon Tetrachloride	4	45	UD
108-90-7	Chlorobenzene	4	45	UD
124-48-1	Chlorodibromomethane	4	45	UD
75-00-3	Chloroethane	4	45	UD
67-66-3	Chloroform	4	45	UD
74-87-3	Chloromethane	4	45	UD
156-59-2	cis-1,2-Dichloroethene	4	2400	D
10061-01-5	cis-1,3-Dichloropropene	4	45	UD
110-82-7	Cyclohexane	4	45	UD
75-71-8	Dichlorodifluoromethane	4	45	UD
100-41-4	Ethylbenzene	4	45	UD
98-82-8	Isopropylbenzene	4	45	UD
79-20-9	Methyl Acetate	4	45	UD
1634-04-4	Methyl tert-Butyl Ether	4	45	UD
108-87-2	Methylcyclohexane	4	45	UD



Form 1  
**ORGANIC ANALYSIS DATA SHEET**  
 8260B

CS-BH-05

Laboratory: TestAmerica Buffalo SDG:  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-02RE1 File ID: G9586.D  
 Sampled: 03/24/09 12:00 Prepared: 04/06/09 10:00 Analyzed: 04/06/09 17:48  
 Solids: 86.20 Preparation: Methanol Prep. Initial/Final: 6.43 g / 250 mL  
 Batch: 9D06045 Sequence: RD90608 Calibration: R9D0214 Instrument: HP5973G

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q	
75-09-2	Methylene Chloride	4	45		UD	
100-42-5	Styrene	4	45		UD	
127-18-4	Tetrachloroethene	4	45		UD	
108-88-3	Toluene	4	45		UD	
156-60-5	trans-1,2-Dichloroethene	4	45		UD	
10061-02-6	trans-1,3-Dichloropropene	4	45		UD	
79-01-6	Trichloroethene	4	45		UD	
75-69-4	Trichlorofluoromethane	4	45		UD	
108-05-4	Vinyl acetate	4	230		UD	
75-01-4	Vinyl chloride	4	90		UD	
1330-20-7	Xylenes, total	4	90		UD	
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4		25.0	24.6	98	10 - 190	
4-Bromofluorobenzene		25.0	23.7	95	10 - 190	
Toluene-d8		25.0	23.9	96	10 - 190	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4		112520	10.74	112268	10.74	
1,4-Difluorobenzene		328023	5.48	315955	5.48	
Chlorobenzene-d5		149011	8.35	138296	8.35	

\* Values outside of QC limits

Form 1  
**ORGANIC ANALYSIS DATA SHEET**  
 8260B

CS-BH-05D

Laboratory: TestAmerica Buffalo SDG:  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-03 File ID: F7716.D  
 Sampled: 03/24/09 12:00 Prepared: 03/26/09 08:43 Analyzed: 03/26/09 13:29  
 Solids: 86.80 Preparation: 5030B MS Initial/Final: 7.22 g / 5 mL  
 Batch: 9C26011 Sequence: RC92607 Calibration: R9C1304 Instrument: HP5973F

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q
71-55-6	1,1,1-Trichloroethane	1	4.0	UD
79-34-5	1,1,2,2-Tetrachloroethane	1	4.0	UD
79-00-5	1,1,2-Trichloroethane	1	4.0	UD
76-13-1	1,1,2-Trichlorotrifluoroethane	1	4.0	UD
75-34-3	1,1-Dichloroethane	1	4.0	UD
75-35-4	1,1-Dichloroethene	1	1.3	JD
120-82-1	1,2,4-Trichlorobenzene	1	4.0	UD
96-12-8	1,2-Dibromo-3-chloropropane	1	4.0	UD
106-93-4	1,2-Dibromoethane (EDB)	1	4.0	UD
95-50-1	1,2-Dichlorobenzene	1	4.0	UD
107-06-2	1,2-Dichloroethane	1	4.0	UD
540-59-0	1,2-Dichloroethene, Total	1	830	DE
78-87-5	1,2-Dichloropropane	1	4.0	UD
541-73-1	1,3-Dichlorobenzene	1	4.0	UD
106-46-7	1,4-Dichlorobenzene	1	4.0	UD
78-93-3	2-Butanone (MEK)	1	20	UD
591-78-6	2-Hexanone	1	20	UD
108-10-1	4-Methyl-2-pentanone (MIBK)	1	20	UD
67-64-1	Acetone	1	24 U	D
71-43-2	Benzene	1	4.8	D
75-27-4	Bromodichloromethane	1	4.0	UD
75-25-2	Bromoform	1	4.0	UD
74-83-9	Bromomethane	1	8.0	UD
75-15-0	Carbon disulfide	1	4.0	UD
56-23-5	Carbon Tetrachloride	1	4.0	UD
108-90-7	Chlorobenzene	1	4.0	UD
124-48-1	Chlorodibromomethane	1	4.0	UD
75-00-3	Chloroethane	1	2.5	JD
67-66-3	Chloroform	1	4.0	UD
74-87-3	Chloromethane	1	8.0	UD
156-59-2	cis-1,2-Dichloroethene	1	810	DE
10061-01-5	cis-1,3-Dichloropropene	1	4.0	UD
110-82-7	Cyclohexane	1	4.0	UD
75-71-8	Dichlorodifluoromethane	1	4.0	UD J
100-41-4	Ethylbenzene	1	18	D
98-82-8	Isopropylbenzene	1	18	D
79-20-9	Methyl Acetate	1	4.0	UD J
1634-04-4	Methyl tert-Butyl Ether	1	4.0	UD
108-87-2	Methylcyclohexane	1	4.0	UD



Form 1  
ORGANIC ANALYSIS DATA SHEET

CS-BH-05D

8260B

Laboratory: TestAmerica Buffalo SDG:  
Client: Panamerican Environmental Inc. Project: Commerce Square  
Matrix: Solid Laboratory ID: RSC0813-03 File ID: F7716.D  
Sampled: 03/24/09 12:00 Prepared: 03/26/09 08:43 Analyzed: 03/26/09 13:29  
Solids: 86.80 Preparation: 5030B MS Initial/Final: 7.22 g / 5 mL  
Batch: 9C26011 Sequence: RC92607 Calibration: R9C1304 Instrument: HP5973F

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
75-09-2	Methylene Chloride	1	4.0	UD	
100-42-5	Styrene	1	4.0	UD	
127-18-4	Tetrachloroethene	1	4.0	UD	
108-88-3	Toluene	1	27	D	
156-60-5	trans-1,2-Dichloroethene	1	19	D	
10061-02-6	trans-1,3-Dichloropropene	1	4.0	UD	
79-01-6	Trichloroethene	1	2.0	JD	
75-69-4	Trichlorofluoromethane	1	4.0	UD	
108-05-4	Vinyl acetate	1	20	UDJ	
75-01-4	Vinyl chloride	1	53	D	
1330-20-7	Xylenes, total	1	37	D	
SYSTEM MONITORING COMPOUND	ADDED (ug/kg)	CONC (ug/kg)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4	50.0	50.8	102	64 - 126	
4-Bromofluorobenzene	50.0	52.1	104	72 - 126	
Toluene-d8	50.0	76.0	152	71 - 125	*
INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	416737	9.41	566225	9.41	
1,4-Difluorobenzene	1372254	4.35	1359773	4.35	
Chlorobenzene-d5	546843	6.96	596038	6.96	

\* Values outside of QC limits



Form 1

## ORGANIC ANALYSIS DATA SHEET

CS-BH-05D

8260B

Laboratory: TestAmerica Buffalo SDG:  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-03RE1 File ID: G9587.D  
 Sampled: 03/24/09 12:00 Prepared: 04/06/09 10:00 Analyzed: 04/06/09 18:10  
 Solids: 86.80 Preparation: Methanol Prep Initial/Final: 6.83 g / 250 mL  
 Batch: 9D06045 Sequence: RD90608 Calibration: R9D0214 Instrument: HP5973G

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q
71-55-6	1,1,1-Trichloroethane	4	42	UD
79-34-5	1,1,2,2-Tetrachloroethane	4	42	UD
79-00-5	1,1,2-Trichloroethane	4	42	UD
76-13-1	1,1,2-Trichlorotrifluoroethane	4	42	UD
75-34-3	1,1-Dichloroethane	4	42	UD
75-35-4	1,1-Dichloroethene	4	42	UD
120-82-1	1,2,4-Trichlorobenzene	4	42	UD
96-12-8	1,2-Dibromo-3-chloropropane	4	42	UD
106-93-4	1,2-Dibromoethane (EDB)	4	42	UD
95-50-1	1,2-Dichlorobenzene	4	42	UD
107-06-2	1,2-Dichloroethane	4	42	UD
540-59-0	1,2-Dichloroethene, Total	4	2400	D
78-87-5	1,2-Dichloropropane	4	42	UD
541-73-1	1,3-Dichlorobenzene	4	42	UD
106-46-7	1,4-Dichlorobenzene	4	42	UD
78-93-3	2-Butanone (MEK)	4	210	UD
591-78-6	2-Hexanone	4	210	UD
108-10-1	4-Methyl-2-pentanone (MIBK)	4	210	UD
67-64-1	Acetone	4	210	UD
71-43-2	Benzene	4	42	UD
75-27-4	Bromodichloromethane	4	42	UD
75-25-2	Bromoform	4	42	UD
74-83-9	Bromomethane	4	42	UD
75-15-0	Carbon disulfide	4	42	UD
56-23-5	Carbon Tetrachloride	4	42	UD
108-90-7	Chlorobenzene	4	42	UD
124-48-1	Chlorodibromomethane	4	42	UD
75-00-3	Chloroethane	4	42	UD
67-66-3	Chloroform	4	42	UD
74-87-3	Chloromethane	4	42	UD
156-59-2	cis-1,2-Dichloroethene	4	2400	D
10061-01-5	cis-1,3-Dichloropropene	4	42	UD
110-82-7	Cyclohexane	4	42	UD
75-71-8	Dichlorodifluoromethane	4	42	UD
100-41-4	Ethylbenzene	4	42	UD
98-82-8	Isopropylbenzene	4	42	UD
79-20-9	Methyl Acetate	4	42	UD J
1634-04-4	Methyl tert-Butyl Ether	4	42	UD
108-87-2	Methylcyclohexane	4	42	UD

Form 1

## ORGANIC ANALYSIS DATA SHEET

CS-BH-05D

8260B

Laboratory: TestAmerica Buffalo SDG:  
Client: Panamerican Environmental Inc. Project: Commerce Square  
Matrix: Solid Laboratory ID: RSC0813-03RE1 File ID: G9587.D  
Sampled: 03/24/09 12:00 Prepared: 04/06/09 10:00 Analyzed: 04/06/09 18:10  
Solids: 86.80 Preparation: Methanol Prep Initial/Final: 6.83 g / 250 mL  
Batch: 9D06045 Sequence: RD90608 Calibration: R9D0214 Instrument: HP5973G

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q	
75-09-2	Methylene Chloride	4	42		UD	
100-42-5	Styrene	4	42		UD	
127-18-4	Tetrachloroethene	4	42		UD	
108-88-3	Toluene	4	42		UD	
156-60-5	trans-1,2-Dichloroethene	4	42		UD	
10061-02-6	trans-1,3-Dichloropropene	4	42		UD	
79-01-6	Trichloroethene	4	42		UD	
75-69-4	Trichlorofluoromethane	4	42		UD	
108-05-4	Vinyl acetate	4	210		UD	
75-01-4	Vinyl chloride	4	84		UD	
1330-20-7	Xylenes, total	4	84		UD	
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4		25.0	23.8	95	10 - 190	
4-Bromofluorobenzene		25.0	23.4	94	10 - 190	
Toluene-d8		25.0	23.3	93	10 - 190	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4		113723	10.74	112268	10.74	
1,4-Difluorobenzene		316198	5.48	315955	5.48	
Chlorobenzene-d5		146454	8.35	138296	8.35	

\* Values outside of QC limits



Form 1  
ORGANIC ANALYSIS DATA SHEET

CS-BH-07

8260B

Laboratory: TestAmerica Buffalo SDG:  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-04 File ID: G9588.D  
 Sampled: 03/24/09 14:00 Prepared: 04/06/09 10:00 Analyzed: 04/06/09 18:33  
 Solids: 83.71 Preparation: Methanol Prep Initial/Final: 7.78 g / 250 mL  
 Batch: 9D06045 Sequence: RD90608 Calibration: R9D0214 Instrument: HP5973G

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q
71-55-6	1,1,1-Trichloroethane	4	38	UD
79-34-5	1,1,2,2-Tetrachloroethane	4	38	UD
79-00-5	1,1,2-Trichloroethane	4	38	UD
76-13-1	1,1,2-Trichlorotrifluoroethane	4	38	UD
75-34-3	1,1-Dichloroethane	4	38	UD
75-35-4	1,1-Dichloroethene	4	38	UD
120-82-1	1,2,4-Trichlorobenzene	4	38	UD
96-12-8	1,2-Dibromo-3-chloropropane	4	38	UD
106-93-4	1,2-Dibromoethane (EDB)	4	38	UD
95-50-1	1,2-Dichlorobenzene	4	38	UD
107-06-2	1,2-Dichloroethane	4	38	UD
540-59-0	1,2-Dichloroethene, Total	4	77	UD
78-87-5	1,2-Dichloropropane	4	38	UD
541-73-1	1,3-Dichlorobenzene	4	38	UD
106-46-7	1,4-Dichlorobenzene	4	38	UD
78-93-3	2-Butanone (MEK)	4	190	UD
591-78-6	2-Hexanone	4	190	UD
108-10-1	4-Methyl-2-pentanone (MIBK)	4	190	UD
67-64-1	Acetone	4	190	UD
71-43-2	Benzene	4	38	UD
75-27-4	Bromodichloromethane	4	38	UD
75-25-2	Bromoform	4	38	UD
74-83-9	Bromomethane	4	38	UD
75-15-0	Carbon disulfide	4	38	UD
56-23-5	Carbon Tetrachloride	4	38	UD
108-90-7	Chlorobenzene	4	38	UD
124-48-1	Chlorodibromomethane	4	38	UD
75-00-3	Chloroethane	4	38	UD
67-66-3	Chloroform	4	38	UD
74-87-3	Chloromethane	4	38	UD
156-59-2	cis-1,2-Dichloroethene	4	38	UD
10061-01-5	cis-1,3-Dichloropropene	4	38	UD
110-82-7	Cyclohexane	4	38	UD
75-71-8	Dichlorodifluoromethane	4	38	UD
100-41-4	Ethylbenzene	4	38	UD
98-82-8	Isopropylbenzene	4	600	D
79-20-9	Methyl Acetate	4	38	UD
1634-04-4	Methyl tert-Butyl Ether	4	38	UD
108-87-2	Methylcyclohexane	4	160	D



**Form 1**  
**ORGANIC ANALYSIS DATA SHEET**  
**8260B**

CS-BH-07

Laboratory: TestAmerica Buffalo SDG: \_\_\_\_\_  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-04 File ID: G9588.D  
 Sampled: 03/24/09 14:00 Prepared: 04/06/09 10:00 Analyzed: 04/06/09 18:33  
 Solids: 83.71 Preparation: Methanol Prep Initial/Final: 7.78 g / 250 mL  
 Batch: 9D06045 Sequence: RD90608 Calibration: R9D0214 Instrument: HP5973G

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q	
75-09-2	Methylene Chloride	4	38		UD	
100-42-5	Styrene	4	38		UD	
127-18-4	Tetrachloroethene	4	38		UD	
108-88-3	Toluene	4	38		UD	
156-60-5	trans-1,2-Dichloroethene	4	38		UD	
10061-02-6	trans-1,3-Dichloropropene	4	38		UD	
79-01-6	Trichloroethene	4	38		UD	
75-69-4	Trichlorofluoromethane	4	38		UD	
108-05-4	Vinyl acetate	4	190		UD	
75-01-4	Vinyl chloride	4	77		UD	
1330-20-7	Xylenes, total	4	930		D	
SYSTEM MONITORING COMPOUND		ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4		25.0	23.9	96	10 - 190	
4-Bromofluorobenzene		25.0	20.8	83	10 - 190	
Toluene-d8		25.0	21.2	85	10 - 190	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4		113083	10.74	112268	10.74	
1,4-Difluorobenzene		324919	5.48	315955	5.48	
Chlorobenzene-d5		167445	8.35	138296	8.35	

\* Values outside of QC limits

Form 1

## ORGANIC ANALYSIS DATA SHEET

CS-BH-09

8260B

Laboratory: TestAmerica Buffalo SDG:  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-07 File ID: F7767.D  
 Sampled: 03/24/09 15:00 Prepared: 03/30/09 18:25 Analyzed: 03/31/09 00:26  
 Solids: 82.99 Preparation: 5035A MS Initial/Final: 6.65 g / 5 mL  
 Batch: 9C30060 Sequence: RC93030 Calibration: R9C1304 Instrument: HP5973F

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q
71-55-6	1,1,1-Trichloroethane	1	4.5	UD
79-34-5	1,1,2,2-Tetrachloroethane	1	4.5	UD
79-00-5	1,1,2-Trichloroethane	1	4.5	UD
76-13-1	1,1,2-Trichlorotrifluoroethane	1	4.5	UD
75-34-3	1,1-Dichloroethane	1	4.5	UD
75-35-4	1,1-Dichloroethene	1	4.5	UD
120-82-1	1,2,4-Trichlorobenzene	1	4.5	UD
96-12-8	1,2-Dibromo-3-chloropropane	1	4.5	UD J
106-93-4	1,2-Dibromoethane (EDB)	1	4.5	UD
95-50-1	1,2-Dichlorobenzene	1	4.5	UD
107-06-2	1,2-Dichloroethane	1	4.5	UD
540-59-0	1,2-Dichloroethene, Total	1	4.1	JD
78-87-5	1,2-Dichloropropane	1	4.5	UD
541-73-1	1,3-Dichlorobenzene	1	4.5	UD
106-46-7	1,4-Dichlorobenzene	1	4.5	UD
78-93-3	2-Butanone (MEK)	1	23	UD
591-78-6	2-Hexanone	1	23	UD
108-10-1	4-Methyl-2-pentanone (MIBK)	1	23	UD
67-64-1	Acetone	1	12.30	JBD
71-43-2	Benzene	1	4.5	UD
75-27-4	Bromodichloromethane	1	4.5	UD
75-25-2	Bromoform	1	4.5	UD J
74-83-9	Bromomethane	1	9.1	UD
75-15-0	Carbon disulfide	1	4.5	UD J
56-23-5	Carbon Tetrachloride	1	4.5	UD
108-90-7	Chlorobenzene	1	4.5	UD
124-48-1	Chlorodibromomethane	1	4.5	UD J
75-00-3	Chloroethane	1	9.1	UD J
67-66-3	Chloroform	1	4.5	UD
74-87-3	Chloromethane	1	9.1	UD
156-59-2	cis-1,2-Dichloroethene	1	4.1	JD
10061-01-5	cis-1,3-Dichloropropene	1	4.5	UD
110-82-7	Cyclohexane	1	4.5	UD
75-71-8	Dichlorodifluoromethane	1	4.5	UD
100-41-4	Ethylbenzene	1	4.5	UD
98-82-8	Isopropylbenzene	1	4.5	UD
79-20-9	Methyl Acetate	1	4.5	UD J
1634-04-4	Methyl tert-Butyl Ether	1	4.5	UD J
108-87-2	Methylcyclohexane	1	5.0	D



Form 1  
**ORGANIC ANALYSIS DATA SHEET**  
 8260B

CS-BH-09

Laboratory: TestAmerica Buffalo SDG:  
 Client: Panamerican Environmental Inc. Project: Commerces Square  
 Matrix: Solid Laboratory ID: RSC0813-07 File ID: F7767.D  
 Sampled: 03/24/09 15:00 Prepared: 03/30/09 18:25 Analyzed: 03/31/09 00:26  
 Solids: 82.99 Preparation: 5035A MS Initial/Final: 6.65 g / 5 mL  
 Batch: 9C30060 Sequence: RC93030 Calibration: R9C1304 Instrument: HP5973F

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q		
75-09-2	Methylene Chloride	1	4.5	UDJ		
100-42-5	Styrene	1	4.5	UD		
127-18-4	Tetrachloroethene	1	4.5	UD		
108-88-3	Toluene	1	4.5	UD		
156-60-5	trans-1,2-Dichloroethene	1	4.5	UD		
10061-02-6	trans-1,3-Dichloropropene	1	4.5	UD		
79-01-6	Trichloroethene	1	4.5	UD		
75-69-4	Trichlorofluoromethane	1	4.5	UD		
108-05-4	Vinyl acetate	1	23	UDJ		
75-01-4	Vinyl chloride	1	9.1	UD		
1330-20-7	Xylenes, total	1	9.1	UD		
SYSTEM MONITORING COMPOUND		ADDED (ug/kg)	CONC (ug/kg)	% REC	QC LIMITS	Q
1,2-Dichloroethane-d4		50.0	48.2	96	64 - 126	
4-Bromofluorobenzene		50.0	54.3	109	72 - 126	
Toluene-d8		50.0	57.1	114	71 - 125	
INTERNAL STANDARD		AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4		514650	9.41	593311	9.4	
1,4-Difluorobenzene		1222991	4.34	1374141	4.35	
Chlorobenzene-d5		530179	6.96	594559	6.96	

\* Values outside of QC limits



Form 1  
ORGANIC ANALYSIS DATA SHEET  
8270C

CS-BH-02

Laboratory: TestAmerica Buffalo SDG:  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-01 File ID: U1833.D  
 Sampled: 03/24/09 10:15 Prepared: 03/27/09 08:30 Analyzed: 04/02/09 00:29  
 Solids: 86.40 Preparation: 3550B MB Initial/Final: 30.42 g / 1 mL  
 Batch: 9C26088 Sequence: RD90123 Calibration: R9D0106 Instrument: HP5973U

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q
95-95-4	2,4,5-Trichlorophenol	10	1900	UD
88-06-2	2,4,6-Trichlorophenol	10	1900	UD
120-83-2	2,4-Dichlorophenol	10	1900	UD
105-67-9	2,4-Dimethylphenol	10	1900	UD
51-28-5	2,4-Dinitrophenol	10	3800	UDJ
121-14-2	2,4-Dinitrotoluene	10	1900	UD
606-20-2	2,6-Dinitrotoluene	10	1900	UD
91-58-7	2-Chloronaphthalene	10	1900	UD
95-57-8	2-Chlorophenol	10	1900	UD
91-57-6	2-Methylnaphthalene	10	1900	UD
95-48-7	2-Methylphenol	10	1900	UD
88-74-4	2-Nitroaniline	10	3800	UD
88-75-5	2-Nitrophenol	10	1900	UD
15831-10-4	3 & 4 Methylphenol	10	3800	UD
91-94-1	3,3'-Dichlorobenzidine	10	1900	UD
99-09-2	3-Nitroaniline	10	3800	UD
534-52-1	4,6-Dinitro-2-methylphenol	10	3800	UD
101-55-3	4-Bromophenyl phenyl ether	10	1900	UD
59-50-7	4-Chloro-3-methylphenol	10	1900	UD
106-47-8	4-Chloroaniline	10	1900	UD
7005-72-3	4-Chlorophenyl phenyl ether	10	1900	UD
100-01-6	4-Nitroaniline	10	3800	UD
100-02-7	4-Nitrophenol	10	3800	UD
83-32-9	Acenaphthene	10	260	JD
208-96-8	Acenaphthylene	10	1900	UD
98-86-2	Acetophenone	10	1900	UD
120-12-7	Anthracene	10	230	JD
1912-24-9	Atrazine	10	1900	UD
100-52-7	Benzaldehyde	10	1900	UD
56-55-3	Benzo[a]anthracene	10	210	JD
50-32-8	Benzo[a]pyrene	10	110	JD
205-99-2	Benzo[b]fluoranthene	10	210	JD
191-24-2	Benzo[g,h,i]perylene	10	1900	UD
207-08-9	Benzo[k]fluoranthene	10	1900	UD
92-52-4	Biphenyl	10	1900	UD
111-91-1	Bis(2-chloroethoxy)methane	10	1900	UD
111-44-4	Bis(2-chloroethyl)ether	10	1900	UD
108-60-1	Bis(2-chloroisopropyl) ether	10	1900	UD
117-81-7	Bis(2-ethylhexyl) phthalate	10	1900	UD

Form 1  
ORGANIC ANALYSIS DATA SHEET

CS-BH-02

8270C

Laboratory: TestAmerica Buffalo SDG:  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-01 File ID: U1833.D  
 Sampled: 03/24/09 10:15 Prepared: 03/27/09 08:30 Analyzed: 04/02/09 00:29  
 Solids: 86.40 Preparation: 3550B MB Initial/Final: 30.42 g / 1 mL  
 Batch: 9C26088 Sequence: RD90123 Calibration: R9D0106 Instrument: HP5973U

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q
85-68-7	Butyl benzyl phthalate	10	1900		UD
105-60-2	Caprolactam	10	1900		UD
86-74-8	Carbazole	10	1900		UD
218-01-9	Chrysene	10	140		JD
53-70-3	Dibenz[a,h]anthracene	10	1900		UD
132-64-9	Dibenzofuran	10	1900		UD
84-66-2	Diethyl phthalate	10	1900		UD
131-11-3	Dimethyl phthalate	10	1900		UD
84-74-2	Di-n-butyl phthalate	10	1900		UD
117-84-0	Di-n-octyl phthalate	10	1900		UD
206-44-0	Fluoranthene	10	500		JD
86-73-7	Fluorene	10	320		JD
118-74-1	Hexachlorobenzene	10	1900		UD
87-68-3	Hexachlorobutadiene	10	1900		UD
77-47-4	Hexachlorocyclopentadiene	10	1900		UD
67-72-1	Hexachloroethane	10	1900		UD
193-39-5	Indeno[1,2,3-cd]pyrene	10	1900		UD
78-59-1	Isophorone	10	1900		UD
91-20-3	Naphthalene	10	1900		UD
98-95-3	Nitrobenzene	10	1900		UD
621-64-7	N-Nitrosodi-n-propylamine	10	1900		UD
86-30-6	N-Nitrosodiphenylamine	10	1900		UD
87-86-5	Pentachlorophenol	10	3800		UD
85-01-8	Phenanthrene	10	910		JD
108-95-2	Phenol	10	1900		UD
129-00-0	Pyrene	10	550		JD
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2,4,6-Tribromophenol	5710	4660	82	39 - 146	
2-Fluorobiphenyl	3800	3760	99	37 - 120	
2-Fluorophenol	5710	3900	68	18 - 120	
Nitrobenzene-d5	3800	2970	78	34 - 132	
Phenol-d5	5710	4380	77	11 - 120	
p-Terphenyl-d14	3800	3670	96	58 - 147	
INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	127141	6.04	181664	6.04	
Acenaphthene-d10	296684	9.97	432184	9.97	
Chrysene-d12	652425	14.12	918440	14.13	
Naphthalene-d8	448392	7.72	655068	7.72	
Perylene-d12	596654	15.46	764213	15.47	

Form 1  
ORGANIC ANALYSIS DATA SHEET  
8270C

CS-BH-05

Laboratory: TestAmerica Buffalo SDG:  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-02 File ID: U1834.D  
 Sampled: 03/24/09 12:00 Prepared: 03/27/09 08:30 Analyzed: 04/02/09 00:52  
 Solids: 86.20 Preparation: 3550B MB Initial/Final: 30.29 g / 1 mL  
 Batch: 9C26088 Sequence: RD90123 Calibration: R9D0106 Instrument: HP5973U

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q
95-95-4	2,4,5-Trichlorophenol	10	2000	UD
88-06-2	2,4,6-Trichlorophenol	10	2000	UD
120-83-2	2,4-Dichlorophenol	10	2000	UD
105-67-9	2,4-Dimethylphenol	10	2000	UD
51-28-5	2,4-Dinitrophenol	10	3800	UD
121-14-2	2,4-Dinitrotoluene	10	2000	UD
606-20-2	2,6-Dinitrotoluene	10	2000	UD
91-58-7	2-Chloronaphthalene	10	2000	UD
95-57-8	2-Chlorophenol	10	2000	UD
91-57-6	2-Methylnaphthalene	10	2000	UD
95-48-7	2-Methylphenol	10	2000	UD
88-74-4	2-Nitroaniline	10	3800	UD
88-75-5	2-Nitrophenol	10	2000	UD
15831-10-4	3 & 4 Methylphenol	10	3800	UD
91-94-1	3,3'-Dichlorobenzidine	10	2000	UD
99-09-2	3-Nitroaniline	10	3800	UD
534-52-1	4,6-Dinitro-2-methylphenol	10	3800	UD
101-55-3	4-Bromophenyl phenyl ether	10	2000	UD
59-50-7	4-Chloro-3-methylphenol	10	2000	UD
106-47-8	4-Chloroaniline	10	2000	UD
7005-72-3	4-Chlorophenyl phenyl ether	10	2000	UD
100-01-6	4-Nitroaniline	10	3800	UD
100-02-7	4-Nitrophenol	10	3800	UD
83-32-9	Acenaphthene	10	2000	UD
208-96-8	Acenaphthylene	10	2000	UD
98-86-2	Acetophenone	10	2000	UD
120-12-7	Anthracene	10	120	JD
1912-24-9	Atrazine	10	2000	UD
100-52-7	Benzaldehyde	10	2000	UD
56-55-3	Benzo[a]anthracene	10	220	JD
50-32-8	Benzo[a]pyrene	10	100	JD
205-99-2	Benzo[b]fluoranthene	10	180	JD
191-24-2	Benzo[g,h,i]perylene	10	2000	UD
207-08-9	Benzo[k]fluoranthene	10	2000	UD
92-52-4	Biphenyl	10	2000	UD
111-91-1	Bis(2-chloroethoxy)methane	10	2000	UD
111-44-4	Bis(2-chloroethyl)ether	10	2000	UD
108-60-1	Bis(2-chloroisopropyl) ether	10	2000	UD
117-81-7	Bis(2-ethylhexyl) phthalate	10	2000	UD



Form 1  
ORGANIC ANALYSIS DATA SHEET  
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CS-BH-05

Laboratory: TestAmerica Buffalo SDG:  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-02 File ID: U1834.D  
 Sampled: 03/24/09 12:00 Prepared: 03/27/09 08:30 Analyzed: 04/02/09 00:52  
 Solids: 86.20 Preparation: 3550B MB Initial/Final: 30.29 g / 1 mL  
 Batch: 9C26088 Sequence: RD90123 Calibration: R9D0106 Instrument: HP5973U

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q
85-68-7	Butyl benzyl phthalate	10	2000		UD
105-60-2	Caprolactam	10	2000		UD
86-74-8	Carbazole	10	2000		UD
218-01-9	Chrysene	10	200		JD
53-70-3	Dibenz[a,h]anthracene	10	2000		UD
132-64-9	Dibenzofuran	10	2000		UD
84-66-2	Diethyl phthalate	10	2000		UD
131-11-3	Dimethyl phthalate	10	2000		UD
84-74-2	Di-n-butyl phthalate	10	2000		UD
117-84-0	Di-n-octyl phthalate	10	2000		UD
206-44-0	Fluoranthene	10	420		JD
86-73-7	Fluorene	10	190		JD
118-74-1	Hexachlorobenzene	10	2000		UD
87-68-3	Hexachlorobutadiene	10	2000		UD
77-47-4	Hexachlorocyclopentadiene	10	2000		UD
67-72-1	Hexachloroethane	10	2000		UD
193-39-5	Indeno[1,2,3-cd]pyrene	10	2000		UD
78-59-1	Isophorone	10	2000		UD
91-20-3	Naphthalene	10	2000		UD
98-95-3	Nitrobenzene	10	2000		UD
621-64-7	N-Nitrosodi-n-propylamine	10	2000		UD
86-30-6	N-Nitrosodiphenylamine	10	2000		UD
87-86-5	Pentachlorophenol	10	3800		UD
85-01-8	Phenanthrene	10	540		JD
108-95-2	Phenol	10	2000		UD
129-00-0	Pyrene	10	430		JD
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2,4,6-Tribromophenol	5740	4870	85	39 - 146	
2-Fluorobiphenyl	3830	3920	102	37 - 120	
2-Fluorophenol	5740	4210	73	18 - 120	
Nitrobenzene-d5	3830	3220	84	34 - 132	
Phenol-d5	5740	4700	82	11 - 120	
p-Terphenyl-d14	3830	3540	92	58 - 147	
INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	137714	6.04	181664	6.04	
Acenaphthene-d10	304744	9.97	432184	9.97	
Chrysene-d12	708598	14.12	918440	14.13	
Naphthalene-d8	476978	7.72	655068	7.72	
Perylene-d12	628339	15.46	764213	15.47	

Form 1  
ORGANIC ANALYSIS DATA SHEET  
8270C

CS-BH-05D

Laboratory: TestAmerica Buffalo SDG:  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-03 File ID: U1835.D  
 Sampled: 03/24/09 12:00 Prepared: 03/27/09 08:30 Analyzed: 04/02/09 01:16  
 Solids: 86.80 Preparation: 3550B MB Initial/Final: 30.62 g / 1 mL  
 Batch: 9C26088 Sequence: RD90123 Calibration: R9D0106 Instrument: HP5973U

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q
95-95-4	2,4,5-Trichlorophenol	10	1900	UD
88-06-2	2,4,6-Trichlorophenol	10	1900	UD
120-83-2	2,4-Dichlorophenol	10	1900	UD
105-67-9	2,4-Dimethylphenol	10	1900	UD
51-28-5	2,4-Dinitrophenol	10	3700	UD J
121-14-2	2,4-Dinitrotoluene	10	1900	UD
606-20-2	2,6-Dinitrotoluene	10	1900	UD
91-58-7	2-Chloronaphthalene	10	1900	UD
95-57-8	2-Chlorophenol	10	1900	UD
91-57-6	2-Methylnaphthalene	10	1900	UD
95-48-7	2-Methylphenol	10	1900	UD
88-74-4	2-Nitroaniline	10	3700	UD
88-75-5	2-Nitrophenol	10	1900	UD
15831-10-4	3 & 4 Methylphenol	10	3700	UD
91-94-1	3,3'-Dichlorobenzidine	10	1900	UD
99-09-2	3-Nitroaniline	10	3700	UD
534-52-1	4,6-Dinitro-2-methylphenol	10	3700	UD
101-55-3	4-Bromophenyl phenyl ether	10	1900	UD
59-50-7	4-Chloro-3-methylphenol	10	1900	UD
106-47-8	4-Chloroaniline	10	1900	UD
7005-72-3	4-Chlorophenyl phenyl ether	10	1900	UD
100-01-6	4-Nitroaniline	10	3700	UD
100-02-7	4-Nitrophenol	10	3700	UD
83-32-9	Acenaphthene	10	1900	UD
208-96-8	Acenaphthylene	10	1900	UD
98-86-2	Acetophenone	10	1900	UD
120-12-7	Anthracene	10	150	JD
1912-24-9	Atrazine	10	1900	UD
100-52-7	Benzaldehyde	10	1900	UD
56-55-3	Benzo[a]anthracene	10	190	JD
50-32-8	Benzo[a]pyrene	10	94	JD
205-99-2	Benzo[b]fluoranthene	10	170	JD
191-24-2	Benzo[g,h,i]perylene	10	1900	UD
207-08-9	Benzo[k]fluoranthene	10	1900	UD
92-52-4	Biphenyl	10	1900	UD
111-91-1	Bis(2-chloroethoxy)methane	10	1900	UD
111-44-4	Bis(2-chloroethyl)ether	10	1900	UD
108-60-1	Bis(2-chloroisopropyl) ether	10	1900	UD
117-81-7	Bis(2-ethylhexyl) phthalate	10	1900	UD

Form 1  
ORGANIC ANALYSIS DATA SHEET  
8270C

CS-BH-05D

Laboratory: TestAmerica Buffalo SDG:  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-03 File ID: U1835.D  
 Sampled: 03/24/09 12:00 Prepared: 03/27/09 08:30 Analyzed: 04/02/09 01:16  
 Solids: 86.80 Preparation: 3550B MB Initial/Final: 30.62 g / 1 mL  
 Batch: 9C26088 Sequence: RD90123 Calibration: R9D0106 Instrument: HP5973U

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q
85-68-7	Butyl benzyl phthalate	10	1900		UD
105-60-2	Caprolactam	10	1900		UD
86-74-8	Carbazole	10	1900		UD
218-01-9	Chrysene	10	150		JD
53-70-3	Dibenz[a,h]anthracene	10	1900		UD
132-64-9	Dibenzofuran	10	1900		UD
84-66-2	Diethyl phthalate	10	1900		UD
131-11-3	Dimethyl phthalate	10	1900		UD
84-74-2	Di-n-butyl phthalate	10	1900		UD
117-84-0	Di-n-octyl phthalate	10	1900		UD
206-44-0	Fluoranthene	10	440		JD
86-73-7	Fluorene	10	230		JD
118-74-1	Hexachlorobenzene	10	1900		UD
87-68-3	Hexachlorobutadiene	10	1900		UD
77-47-4	Hexachlorocyclopentadiene	10	1900		UD
67-72-1	Hexachloroethane	10	1900		UD
193-39-5	Indeno[1,2,3-cd]pyrene	10	1900		UD
78-59-1	Isophorone	10	1900		UD
91-20-3	Naphthalene	10	1900		UD
98-95-3	Nitrobenzene	10	1900		UD
621-64-7	N-Nitrosodi-n-propylamine	10	1900		UD
86-30-6	N-Nitrosodiphenylamine	10	1900		UD
87-86-5	Pentachlorophenol	10	3700		UD
85-01-8	Phenanthrene	10	570		JD
108-95-2	Phenol	10	1900		UD
129-00-0	Pyrene	10	440		JD
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2,4,6-Tribromophenol	5640	5020	89	39 - 146	
2-Fluorobiphenyl	3760	3950	105	37 - 120	
2-Fluorophenol	5640	4390	78	18 - 120	
Nitrobenzene-d5	3760	3510	93	34 - 132	
Phenol-d5	5640	4910	87	11 - 120	
p-Terphenyl-d14	3760	3650	97	58 - 147	
INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	134525	6.04	181664	6.04	
Acenaphthene-d10	309392	9.97	432184	9.97	
Chrysene-d12	701260	14.12	918440	14.13	
Naphthalene-d8	479818	7.72	655068	7.72	
Perylene-d12	621339	15.46	764213	15.47	



Form 1  
ORGANIC ANALYSIS DATA SHEET  
8270C

CS-BH-07

Laboratory: TestAmerica Buffalo SDG:  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-04 File ID: U1836.D  
 Sampled: 03/24/09 14:00 Prepared: 03/27/09 08:30 Analyzed: 04/02/09 01:39  
 Solids: 83.71 Preparation: 3550B MB Initial/Final: 30.74 g / 1 mL  
 Batch: 9C26088 Sequence: RD90123 Calibration: R9D0106 Instrument: HP5973U

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q
95-95-4	2,4,5-Trichlorophenol	10	2000	UD
88-06-2	2,4,6-Trichlorophenol	10	2000	UD
120-83-2	2,4-Dichlorophenol	10	2000	UD
105-67-9	2,4-Dimethylphenol	10	2000	UD
51-28-5	2,4-Dinitrophenol	10	3800	UD J
121-14-2	2,4-Dinitrotoluene	10	2000	UD
606-20-2	2,6-Dinitrotoluene	10	2000	UD
91-58-7	2-Chloronaphthalene	10	2000	UD
95-57-8	2-Chlorophenol	10	2000	UD
91-57-6	2-Methylnaphthalene	10	1100	JD
95-48-7	2-Methylphenol	10	2000	UD
88-74-4	2-Nitroaniline	10	3800	UD
88-75-5	2-Nitrophenol	10	2000	UD
15831-10-4	3 & 4 Methylphenol	10	3800	UD
91-94-1	3,3'-Dichlorobenzidine	10	2000	UD
99-09-2	3-Nitroaniline	10	3800	UD
534-52-1	4,6-Dinitro-2-methylphenol	10	3800	UD
101-55-3	4-Bromophenyl phenyl ether	10	2000	UD
59-50-7	4-Chloro-3-methylphenol	10	2000	UD
106-47-8	4-Chloroaniline	10	2000	UD
7005-72-3	4-Chlorophenyl phenyl ether	10	2000	UD
100-01-6	4-Nitroaniline	10	3800	UD
100-02-7	4-Nitrophenol	10	3800	UD
83-32-9	Acenaphthene	10	2000	UD
208-96-8	Acenaphthylene	10	2000	UD
98-86-2	Acetophenone	10	2000	UD
120-12-7	Anthracene	10	2000	UD
1912-24-9	Atrazine	10	2000	UD
100-52-7	Benzaldehyde	10	2000	UD
56-55-3	Benzo[a]anthracene	10	93	JD
50-32-8	Benzo[a]pyrene	10	2000	UD
205-99-2	Benzo[b]fluoranthene	10	2000	UD
191-24-2	Benzo[g,h,i]perylene	10	2000	UD
207-08-9	Benzo[k]fluoranthene	10	2000	UD
92-52-4	Biphenyl	10	2000	UD
111-91-1	Bis(2-chloroethoxy)methane	10	2000	UD
111-44-4	Bis(2-chloroethyl)ether	10	2000	UD
108-60-1	Bis(2-chloroisopropyl) ether	10	2000	UD
117-81-7	Bis(2-ethylhexyl) phthalate	10	2000	UD

Form 1  
ORGANIC ANALYSIS DATA SHEET

CS-BH-07

8270C

Laboratory: TestAmerica Buffalo SDG:  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-04 File ID: U1836.D  
 Sampled: 03/24/09 14:00 Prepared: 03/27/09 08:30 Analyzed: 04/02/09 01:39  
 Solids: 83.71 Preparation: 3550B MB Initial/Final: 30.74 g / 1 mL  
 Batch: 9C26088 Sequence: RD90123 Calibration: R9D0106 Instrument: HP5973U

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q
85-68-7	Butyl benzyl phthalate	10	2000		UD
105-60-2	Caprolactam	10	2000		UD
86-74-8	Carbazole	10	2000		UD
218-01-9	Chrysene	10	2000		UD
53-70-3	Dibenz[a,h]anthracene	10	2000		UD
132-64-9	Dibenzofuran	10	2000		UD
84-66-2	Diethyl phthalate	10	2000		UD
131-11-3	Dimethyl phthalate	10	2000		UD
84-74-2	Di-n-butyl phthalate	10	2000		UD
117-84-0	Di-n-octyl phthalate	10	2000		UD
206-44-0	Fluoranthene	10	100		JD
86-73-7	Fluorene	10	2000		UD
118-74-1	Hexachlorobenzene	10	2000		UD
87-68-3	Hexachlorobutadiene	10	2000		UD
77-47-4	Hexachlorocyclopentadiene	10	2000		UD
67-72-1	Hexachloroethane	10	2000		UD
193-39-5	Indeno[1,2,3-cd]pyrene	10	2000		UD
78-59-1	Isophorone	10	2000		UD
91-20-3	Naphthalene	10	940		JD
98-95-3	Nitrobenzene	10	2000		UD
621-64-7	N-Nitrosodi-n-propylamine	10	2000		UD
86-30-6	N-Nitrosodiphenylamine	10	2000		UD
87-86-5	Pentachlorophenol	10	3800		UD
85-01-8	Phenanthrene	10	180		JD
108-95-2	Phenol	10	2000		UD
129-00-0	Pyrene	10	210		JD
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2,4,6-Tribromophenol	5830	4280	73	39 - 146	
2-Fluorobiphenyl	3890	3410	88	37 - 120	
2-Fluorophenol	5830	3700	64	18 - 120	
Nitrobenzene-d5	3890	3410	88	34 - 132	
Phenol-d5	5830	4270	73	11 - 120	
p-Terphenyl-d14	3890	3160	81	58 - 147	
INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	140749	6.04	181664	6.04	
Acenaphthene-d10	331634	9.97	432184	9.97	
Chrysene-d12	705997	14.12	918440	14.13	
Naphthalene-d8	500849	7.72	655068	7.72	
Perylene-d12	651298	15.46	764213	15.47	

Form 1  
ORGANIC ANALYSIS DATA SHEET

CS-BH-09

8270C

Laboratory: TestAmerica Buffalo SDG: \_\_\_\_\_  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-07 File ID: U1842.D  
 Sampled: 03/24/09 15:00 Prepared: 03/27/09 08:30 Analyzed: 04/02/09 15:37  
 Solids: 82.99 Preparation: 3550B MB Initial/Final: 30.23 g / 1 mL  
 Batch: 9C26088 Sequence: RD90224 Calibration: R9D0106 Instrument: HP5973U

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q
95-95-4	2,4,5-Trichlorophenol	1	200	UD
88-06-2	2,4,6-Trichlorophenol	1	200	UD
120-83-2	2,4-Dichlorophenol	1	200	UD
105-67-9	2,4-Dimethylphenol	1	200	UD
51-28-5	2,4-Dinitrophenol	1	390	UD
121-14-2	2,4-Dinitrotoluene	1	200	UD
606-20-2	2,6-Dinitrotoluene	1	200	UD
91-58-7	2-Chloronaphthalene	1	200	UD
95-57-8	2-Chlorophenol	1	200	UD
91-57-6	2-Methylnaphthalene	1	200	UD
95-48-7	2-Methylphenol	1	200	UD
88-74-4	2-Nitroaniline	1	390	UD
88-75-5	2-Nitrophenol	1	200	UD
15831-10-4	3 & 4 Methylphenol	1	390	UD
91-94-1	3,3'-Dichlorobenzidine	1	200	UD
99-09-2	3-Nitroaniline	1	390	UD
534-52-1	4,6-Dinitro-2-methylphenol	1	390	UD
101-55-3	4-Bromophenyl phenyl ether	1	200	UD
59-50-7	4-Chloro-3-methylphenol	1	200	UD
106-47-8	4-Chloroaniline	1	200	UD
7005-72-3	4-Chlorophenyl phenyl ether	1	200	UD
100-01-6	4-Nitroaniline	1	390	UD
100-02-7	4-Nitrophenol	1	390	UD
83-32-9	Acenaphthene	1	200	UD
208-96-8	Acenaphthylene	1	200	UD
98-86-2	Acetophenone	1	200	UD
120-12-7	Anthracene	1	10	JD
1912-24-9	Atrazine	1	200	UD
100-52-7	Benzaldehyde	1	200	UD
56-55-3	Benzo[a]anthracene	1	30	JD
50-32-8	Benzo[a]pyrene	1	22	JD
205-99-2	Benzo[b]fluoranthene	1	32	JD
191-24-2	Benzo[g,h,i]perylene	1	14	JD
207-08-9	Benzo[k]fluoranthene	1	14	JD
92-52-4	Biphenyl	1	200	UD
111-91-1	Bis(2-chloroethoxy)methane	1	200	UD
111-44-4	Bis(2-chloroethyl)ether	1	200	UD
108-60-1	Bis(2-chloroisopropyl) ether	1	200	UD
117-81-7	Bis(2-ethylhexyl) phthalate	1	200	UD



Form 1  
ORGANIC ANALYSIS DATA SHEET  
8270C

CS-BH-09

Laboratory: TestAmerica Buffalo SDG:  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-07 File ID: U1842.D  
 Sampled: 03/24/09 15:00 Prepared: 03/27/09 08:30 Analyzed: 04/02/09 15:37  
 Solids: 82.99 Preparation: 3550B MB Initial/Final: 30.23 g / 1 mL  
 Batch: 9C26088 Sequence: RD90224 Calibration: R9D0106 Instrument: HP5973U

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q
85-68-7	Butyl benzyl phthalate	1	200		UD
105-60-2	Caprolactam	1	200		UD
86-74-8	Carbazole	1	200		UD
218-01-9	Chrysene	1	31		JD
53-70-3	Dibenz[a,h]anthracene	1	200		UD
132-64-9	Dibenzofuran	1	200		UD
84-66-2	Diethyl phthalate	1	200		UD
131-11-3	Dimethyl phthalate	1	200		UD
84-74-2	Di-n-butyl phthalate	1	190		JD
117-84-0	Di-n-octyl phthalate	1	200		UD
206-44-0	Fluoranthene	1	54		JD
86-73-7	Fluorene	1	25		JD
118-74-1	Hexachlorobenzene	1	200		UD
87-68-3	Hexachlorobutadiene	1	200		UD
77-47-4	Hexachlorocyclopentadiene	1	200		UD
67-72-1	Hexachloroethane	1	200		UD
193-39-5	Indeno[1,2,3-cd]pyrene	1	12		JD
78-59-1	Isophorone	1	200		UD
91-20-3	Naphthalene	1	200		UD
98-95-3	Nitrobenzene	1	200		UD
621-64-7	N-Nitrosodi-n-propylamine	1	200		UD
86-30-6	N-Nitrosodiphenylamine	1	200		UD
87-86-5	Pentachlorophenol	1	390		UD
85-01-8	Phenanthrene	1	50		JD
108-95-2	Phenol	1	200		UD
129-00-0	Pyrene	1	50		JD
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
2,4,6-Tribromophenol	5980	6060	101	39 - 146	
2-Fluorobiphenyl	3990	3740	94	37 - 120	
2-Fluorophenol	5980	4450	74	18 - 120	
Nitrobenzene-d5	3990	3490	88	34 - 132	
Phenol-d5	5980	4750	79	11 - 120	
p-Terphenyl-d14	3990	3590	90	58 - 147	
INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	153220	6.04	219759	6.04	
Acenaphthene-d10	356513	9.96	508053	9.96	
Chrysene-d12	793380	14.12	1089567	14.12	
Naphthalene-d8	544104	7.71	776628	7.71	
Perylene-d12	709892	15.46	956868	15.46	



Form 1  
ORGANIC ANALYSIS DATA SHEET  
8082

CS-BH-05

Laboratory: TestAmerica Buffalo SDG:  
Client: Panamerican Environmental Inc. Project: Commerce Square  
Matrix: Solid Laboratory ID: RSC0813-02 File ID: 19B65257  
Sampled: 03/24/09 12:00 Prepared: 03/27/09 08:30 Analyzed: 03/30/09 19:42  
Solids: 86.20 Preparation: 3550B GC Initial/Final: 30.11 g / 10 mL  
Batch: 9C26091 Sequence: RD90313 Calibration: R9B2502 Instrument: HP5890-19

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q	
12674-11-2	Aroclor 1016	1	19		UD	
11104-28-2	Aroclor 1221	1	19		UD	
11141-16-5	Aroclor 1232	1	19		UD	
53469-21-9	Aroclor 1242	1	19		UD	
12672-29-6	Aroclor 1248	1	19		UD	
11097-69-1	Aroclor 1254	1	19		UD	
11096-82-5	Aroclor 1260	1	19		UD	
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl		7.71	7.08	92	34 - 148	
Tetrachloro-m-xylene		7.71	4.66	60	35 - 134	

\* Values outside of QC limits



## Form 1

## ORGANIC ANALYSIS DATA SHEET

CS-BH-05D

8082

Laboratory: TestAmerica Buffalo SDG:  
Client: Panamerican Environmental Inc. Project: Commerce Square  
Matrix: Solid Laboratory ID: RSC0813-03 File ID: 19B65258  
Sampled: 03/24/09 12:00 Prepared: 03/27/09 08:30 Analyzed: 03/30/09 19:57  
Solids: 86.80 Preparation: 3550B GC Initial/Final: 30.24 g / 10 mL  
Batch: 9C26091 Sequence: RD90313 Calibration: R9B2502 Instrument: HP5890-19

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q	
12674-11-2	Aroclor 1016	1	19	UD	
11104-28-2	Aroclor 1221	1	19	UD	
11141-16-5	Aroclor 1232	1	19	UD	
53469-21-9	Aroclor 1242	1	19	UD	
12672-29-6	Aroclor 1248	1	19	UD	
11097-69-1	Aroclor 1254	1	19	UD	
11096-82-5	Aroclor 1260	1	19	UD	
SYSTEM MONITORING COMPOUND	ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl	7.62	7.22	95	34 - 148	
Tetrachloro-m-xylene	7.62	4.81	63	35 - 134	

\* Values outside of QC limits

Form 1  
ORGANIC ANALYSIS DATA SHEET

CS-BH-07
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8082

Laboratory: TestAmerica Buffalo SDG: \_\_\_\_\_  
 Client: Panamerican Environmental Inc. Project: Commerce Square  
 Matrix: Solid Laboratory ID: RSC0813-04 File ID: 19B65259  
 Sampled: 03/24/09 14:00 Prepared: 03/27/09 08:30 Analyzed: 03/30/09 20:11  
 Solids: 83.71 Preparation: 3550B GC Initial/Final: 14.51 g / 10 mL  
 Batch: 9C26091 Sequence: RD90313 Calibration: R9B2502 Instrument: HP5890-19

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)		Q	
12674-11-2	Aroclor 1016	1	41		UD	
11104-28-2	Aroclor 1221	1	41		UD	
11141-16-5	Aroclor 1232	1	41		UD	
53469-21-9	Aroclor 1242	1	41		UD	
12672-29-6	Aroclor 1248	1	41		UD	
11097-69-1	Aroclor 1254	1	41		UD	
11096-82-5	Aroclor 1260	1	41		UD	
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl		16.5	17.7	108	34 - 148	
Tetrachloro-m-xylene		16.5	14.2	86	35 - 134	

\* Values outside of QC limits

Form 1  
ORGANIC ANALYSIS DATA SHEET

CS-BH-09
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8082

Laboratory:	TestAmerica Buffalo	SDG:	
Client:	Panamerican Environmental Inc.	Project:	Commerce Square
Matrix:	Solid	Laboratory ID:	RSC0813-07
Sampled:	03/24/09 15:00	Prepared:	03/27/09 08:30
Solids:	82.99	Preparation:	3550B GC
Batch:	9C26091	Sequence:	RD90313
		Calibration:	R9B2502
		Instrument:	HP5890-19
		File ID:	19B65260
		Analyzed:	03/30/09 20:26
		Initial/Final:	30.32 g / 10 mL

CAS NO.	COMPOUND	DILUTION	CONC. (ug/kg dry)	Q		
12674-11-2	Aroclor 1016	1	20	UD		
11104-28-2	Aroclor 1221	1	20	UD		
11141-16-5	Aroclor 1232	1	20	UD		
53469-21-9	Aroclor 1242	1	20	UD		
12672-29-6	Aroclor 1248	1	20	UD		
11097-69-1	Aroclor 1254	1	20	UD		
11096-82-5	Aroclor 1260	1	20	UD		
SYSTEM MONITORING COMPOUND		ADDED (ug/kg dry)	CONC (ug/kg dry)	% REC	QC LIMITS	Q
Decachlorobiphenyl		7.95	7.83	99	34 - 148	
Tetrachloro-m-xylene		7.95	5.91	74	35 - 134	

\* Values outside of QC limits



Form 1

800/1092

# INORGANIC ANALYSIS DATA SHEET

CS-BH-02

7471A

Laboratory: TestAmerica Buffalo

SDG:

Client: Panamerican Environmental Inc.

Project: Commerce Square

Matrix: Solid

Laboratory ID: RSC0813-01

File ID: H03309S1-6

Sampled: 03/24/09 10:15

Prepared: 03/30/09 15:00

Analyzed: 03/30/09 17:08

Solids: 86.40

Preparation: 7471A

Initial/Final: 0.575 g / 50 mL

Batch: 9C24028

Sequence: RC93029

Calibration: R9C3011

Instrument: Leeman 2

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.0287	1		7471A

Form 1  
INORGANIC ANALYSIS DATA SHEET  
7471A

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CS-BH-05

Laboratory: TestAmerica Buffalo

SDG:

Client: Panamerican Environmental Inc.

Project: Commerce Square

Matrix: Solid

Laboratory ID: RSC0813-02

File ID: H03309S1-7

Sampled: 03/24/09 12:00

Prepared: 03/30/09 15:00

Analyzed: 03/30/09 17:10

Solids: 86.20

Preparation: 7471A

Initial/Final: 0.6294 g / 50 mL

Batch: 9C24028

Sequence: RC93029

Calibration: R9C3011

Instrument: Leeman 2

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.0221	1	U	7471A

Form 1  
INORGANIC ANALYSIS DATA SHEET  
7471A

802/1092

CS-BH-05D

Laboratory: TestAmerica Buffalo

SDG:

Client: Panamerican Environmental Inc.

Project: Commerce Square

Matrix: Solid

Laboratory ID: RSC0813-03

File ID: H03309S1-8

Sampled: 03/24/09 12:00

Prepared: 03/30/09 15:00

Analyzed: 03/30/09 17:11

Solids: 86.80

Preparation: 7471A

Initial/Final: 0.6099 g / 50 mL

Batch: 9C24028

Sequence:

RC93029

Calibration: R9C3011

Instrument: Leeman 2

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.0227	1	U	7471A



Form 1

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# INORGANIC ANALYSIS DATA SHEET

CS-BH-07

7471A

Laboratory: TestAmerica Buffalo

SDG:

Client: Panamerican Environmental Inc.

Project: Commerce Square

Matrix: Solid

Laboratory ID: RSC0813-04

File ID: H03309S1-9

Sampled: 03/24/09 14:00

Prepared: 03/30/09 15:00

Analyzed: 03/30/09 17:13

Solids: 83.71

Preparation: 7471A

Initial/Final: 0.5719 g / 50 mL

Batch: 9C24028

Sequence: RC93029

Calibration: R9C3011

Instrument: Leeman 2

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.0251	1	U	7471A

Form 1

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# INORGANIC ANALYSIS DATA SHEET

CS-BH-09

7471A

Laboratory: TestAmerica Buffalo

SDG:

Client: Panamerican Environmental Inc.

Project: Commerce Square

Matrix: Solid

Laboratory ID: RSC0813-07

File ID: H03309S1-13

Sampled: 03/24/09 15:00

Prepared: 03/30/09 15:00

Analyzed: 03/30/09 17:19

Solids: 82.99

Preparation: 7471A

Initial/Final: 0.6117 g / 50 mL

Batch: 9C24028

Sequence: RC93029

Calibration: R9C3011

Instrument: Leeman 2

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7439-97-6	Mercury	0.0236	1	U	7471A

## INORGANIC ANALYSIS DATA SHEET

CS-BH-02

6010B

Laboratory: TestAmerica Buffalo

SDG:

Client: Panamerican Environmental Inc.Project: Commerce SquareMatrix: SolidLaboratory ID: RSC0813-01File ID: 1032609-038Sampled: 03/24/09 10:15Prepared: 03/25/09 11:00Analyzed: 03/26/09 16:39Solids: 86.40Preparation: 3050BInitial/Final: 0.5214 g / 50 mLBatch: 9C24054Sequence: RD90126Calibration: R9D0108Instrument: Trace 1

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7429-90-5	Aluminum	6410	1	J	6010B
7440-36-0	Antimony	16.6	1	UJ	6010B
7440-38-2	Arsenic	2.2	1		6010B
7440-39-3	Barium	73.3	1		6010B
7440-41-7	Beryllium	0.304	1		6010B
7440-43-9	Cadmium	0.156	1		6010B
7440-47-3	Chromium	9.30	1		6010B
7440-48-4	Cobalt	5.30	1	J	6010B
7440-50-8	Copper	16.5	1		6010B
7439-89-6	Iron	11500	1	J	6010B
7439-92-1	Lead	16.7	1		6010B
7439-95-4	Magnesium	14100	1		6010B
7439-96-5	Manganese	535	1		6010B
7440-02-0	Nickel	12.3	1		6010B
7440-09-7	Potassium	1200	1		6010B
7782-49-2	Selenium	4.4	1	U	6010B
7440-22-4	Silver	0.555	1	U	6010B
7440-23-5	Sodium	211	1		6010B
7440-28-0	Thallium	6.7	1	U	6010B
7440-62-2	Vanadium	12.6	1		6010B
7440-66-6	Zinc	180	1	J	6010B



Form 1  
INORGANIC ANALYSIS DATA SHEET  
6010B

818/1092

CS-BH-02

Laboratory: TestAmerica Buffalo

SDG:

Client: Panamerican Environmental Inc.

Project: Commerce Square

Matrix: Solid

Laboratory ID: RSC0813-01

File ID: A032709-167

Sampled: 03/24/09 10:15

Prepared: 03/25/09 11:00

Analyzed: 03/28/09 01:44

Solids: 86.40

Preparation: 3050B

Initial/Final: 0.5214 g / 50 mL

Batch: 9C24054

Sequence: RD90129

Calibration: R9D0109

Instrument: Trace 2

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7440-70-2	Calcium	44700	5	D	6010B

## INORGANIC ANALYSIS DATA SHEET

CS-BH-05

6010B

Laboratory: TestAmerica Buffalo

SDG:

Client: Panamerican Environmental Inc.Project: Commerce SquareMatrix: SolidLaboratory ID: RSC0813-02File ID: 1032609-039Sampled: 03/24/09 12:00Prepared: 03/25/09 11:00Analyzed: 03/26/09 16:44Solids: 86.20Preparation: 3050BInitial/Final: 0.5437 g / 50 mLBatch: 9C24054Sequence: RD90126Calibration: R9D0108Instrument: Trace 1

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7429-90-5	Aluminum	10200	1	J	6010B
7440-36-0	Antimony	16.0	1	UJ	6010B
7440-38-2	Arsenic	2.8	1	<del>UJ</del>	6010B
7440-39-3	Barium	96.3	1		6010B
7440-41-7	Beryllium	0.470	1		6010B
7440-43-9	Cadmium	0.213	1	U	6010B
7440-47-3	Chromium	15.4	1		6010B
7440-48-4	Cobalt	8.03	1	J	6010B
7440-50-8	Copper	18.9	1		6010B
7439-89-6	Iron	18900	1	J	6010B
7439-92-1	Lead	6.4	1		6010B
7439-95-4	Magnesium	10400	1		6010B
7439-96-5	Manganese	439	1		6010B
7440-02-0	Nickel	19.1	1		6010B
7440-09-7	Potassium	1690	1		6010B
7782-49-2	Selenium	4.3	1	U	6010B
7440-22-4	Silver	0.533	1	U	6010B
7440-23-5	Sodium	442	1		6010B
7440-28-0	Thallium	6.4	1	U	6010B
7440-62-2	Vanadium	21.8	1		6010B
7440-66-6	Zinc	43.9	1	J	6010B

Form 1

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# INORGANIC ANALYSIS DATA SHEET

CS-BH-05

6010B

Laboratory: TestAmerica Buffalo

SDG:

Client: Panamerican Environmental Inc.

Project: Commerce Square

Matrix: Solid

Laboratory ID: RSC0813-02

File ID: A032709-168

Sampled: 03/24/09 12:00

Prepared: 03/25/09 11:00

Analyzed: 03/28/09 01:49

Solids: 86.20

Preparation: 3050B

Initial/Final: 0.5437 g / 50 mL

Batch: 9C24054

Sequence: RD90129

Calibration: R9D0109

Instrument: Trace 2

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7440-70-2	Calcium	53600	5	D	6010B



## INORGANIC ANALYSIS DATA SHEET

CS-BH-05D

6010B

Laboratory: TestAmerica Buffalo

SDG:

Client: Panamerican Environmental Inc.Project: Commerce SquareMatrix: SolidLaboratory ID: RSC0813-03File ID: 1032609-040Sampled: 03/24/09 12:00Prepared: 03/25/09 11:00Analyzed: 03/26/09 16:49Solids: 86.80Preparation: 3050BInitial/Final: 0.4984 g / 50 mLBatch: 9C24054Sequence: RD90126Calibration: R9D0108Instrument: Trace 1

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7429-90-5	Aluminum	9920	1	J	6010B
7440-36-0	Antimony	17.3	1	UJ	6010B
7440-38-2	Arsenic	6.2	1		6010B
7440-39-3	Barium	98.2	1		6010B
7440-41-7	Beryllium	0.509	1		6010B
7440-43-9	Cadmium	0.231	1	U	6010B
7440-47-3	Chromium	15.3	1		6010B
7440-48-4	Cobalt	8.59	1	J	6010B
7440-50-8	Copper	19.9	1		6010B
7439-89-6	Iron	18700	1	J	6010B
7439-92-1	Lead	7.9	1		6010B
7439-95-4	Magnesium	10500	1		6010B
7439-96-5	Manganese	409	1		6010B
7440-02-0	Nickel	18.6	1		6010B
7440-09-7	Potassium	1590	1		6010B
7782-49-2	Selenium	4.6	1	U	6010B
7440-22-4	Silver	0.578	1	U	6010B
7440-23-5	Sodium	459	1		6010B
7440-28-0	Thallium	6.9	1	U	6010B
7440-62-2	Vanadium	22.7	1		6010B
7440-66-6	Zinc	42.7	1	J	6010B

Form 1

822/1092

# INORGANIC ANALYSIS DATA SHEET

CS-BH-05D

6010B

Laboratory: TestAmerica Buffalo

SDG:

Client: Panamerican Environmental Inc.

Project: Commerce Square

Matrix: Solid

Laboratory ID: RSC0813-03

File ID: A032709-169

Sampled: 03/24/09 12:00

Prepared: 03/25/09 11:00

Analyzed: 03/28/09 01:54

Solids: 86.80

Preparation: 3050B

Initial/Final: 0.4984 g / 50 mL

Batch: 9C24054

Sequence: RD90129

Calibration: R9D0109

Instrument: Trace 2

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7440-70-2	Calcium	47400	5	D	6010B

## INORGANIC ANALYSIS DATA SHEET

CS-BH-07

6010B

Laboratory: TestAmerica Buffalo

SDG:

Client: Panamerican Environmental Inc.Project: Commerce SquareMatrix: SolidLaboratory ID: RSC0813-04File ID: 1032609-041Sampled: 03/24/09 14:00Prepared: 03/25/09 11:00Analyzed: 03/26/09 16:54Solids: 83.71Preparation: 3050BInitial/Final: 0.5 g / 50 mLBatch: 9C24054Sequence: RD90126Calibration: R9D0108Instrument: Trace 1

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7429-90-5	Aluminum	11000	1	J	6010B
7440-36-0	Antimony	17.9	1	UJ	6010B
7440-38-2	Arsenic	3.5	1		6010B
7440-39-3	Barium	98.8	1		6010B
7440-41-7	Beryllium	0.527	1		6010B
7440-43-9	Cadmium	0.239	1	U	6010B
7440-47-3	Chromium	16.1	1		6010B
7440-48-4	Cobalt	11.8	1	J	6010B
7440-50-8	Copper	12.5	1		6010B
7439-89-6	Iron	17500	1	J	6010B
7439-92-1	Lead	4.3	1		6010B
7439-95-4	Magnesium	10500	1		6010B
7439-96-5	Manganese	646	1		6010B
7440-02-0	Nickel	25.6	1		6010B
7440-09-7	Potassium	1730	1		6010B
7782-49-2	Selenium	4.8	1	U	6010B
7440-22-4	Silver	0.597	1	U	6010B
7440-23-5	Sodium	519	1		6010B
7440-28-0	Thallium	7.2	1	U	6010B
7440-62-2	Vanadium	20.5	1		6010B
7440-66-6	Zinc	51.2	1	J	6010B

Form 1

824/1092

CS-BH-07

# INORGANIC ANALYSIS DATA SHEET

6010B

Laboratory: TestAmerica Buffalo

SDG:

Client: Panamerican Environmental Inc.

Project: Commerce Square

Matrix: Solid

Laboratory ID: RSC0813-04

File ID: A032709-170

Sampled: 03/24/09 14:00

Prepared: 03/25/09 11:00

Analyzed: 03/28/09 01:59

Solids: 83.71

Preparation: 3050B

Initial/Final: 0.5 g / 50 mL

Batch: 9C24054

Sequence:

RD90129

Calibration: R9D0109

Instrument: Trace 2

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7440-70-2	Calcium	54100	5	D	6010B



Form 1  
**INORGANIC ANALYSIS DATA SHEET**  
 6010B

825/1092

CS-BH-09

Laboratory: TestAmerica Buffalo

SDG:

Client: Panamerican Environmental Inc.

Project: Commerce Square

Matrix: Solid

Laboratory ID: RSC0813-07

File ID: 1032609-046

Sampled: 03/24/09 15:00

Prepared: 03/25/09 11:00

Analyzed: 03/26/09 17:19

Solids: 82.99

Preparation: 3050B

Initial/Final: 0.504 g / 50 mL

Batch: 9C24054

Sequence: RD90126

Calibration: R9D0108

Instrument: Trace 1

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7429-90-5	Aluminum	10200	1	J	6010B
7440-36-0	Antimony	17.9	1	UJ	6010B
7440-38-2	Arsenic	4.4	1		6010B
7440-39-3	Barium	152	1		6010B
7440-41-7	Beryllium	0.525	1		6010B
7440-43-9	Cadmium	0.239	1	U	6010B
7440-47-3	Chromium	15.1	1		6010B
7440-48-4	Cobalt	10.2	1	J	6010B
7440-50-8	Copper	11.9	1		6010B
7439-89-6	Iron	19900	1	J	6010B
7439-92-1	Lead	4.3	1		6010B
7439-95-4	Magnesium	9260	1		6010B
7439-96-5	Manganese	627	1		6010B
7440-02-0	Nickel	22.7	1		6010B
7440-09-7	Potassium	1650	1		6010B
7782-49-2	Selenium	1.0	1		6010B
7440-22-4	Silver	0.598	1	U	6010B
7440-23-5	Sodium	1260	1		6010B
7440-28-0	Thallium	0.6	1		6010B
7440-62-2	Vanadium	19.3	1		6010B
7440-66-6	Zinc	47.6	1	J	6010B

## INORGANIC ANALYSIS DATA SHEET

CS-BH-09

6010B

Laboratory: TestAmerica Buffalo

SDG:

Client: Panamerican Environmental Inc.Project: Commerce SquareMatrix: SolidLaboratory ID: RSC0813-07File ID: A032709-177Sampled: 03/24/09 15:00Prepared: 03/25/09 11:00Analyzed: 03/28/09 02:35Solids: 82.99Preparation: 3050BInitial/Final: 0.504 g / 50 mLBatch: 9C24054Sequence: RD90129Calibration: R9D0109Instrument: Trace 2

CAS NO.	Analyte	Concentration (mg/kg dry)	Dilution Factor	Q	Method
7440-70-2	Calcium	56000	5	D	6010B

**ATTACHMENT B**

Panamerican Environmental Inc.  
2390 Clinton Ave.  
Buffalo, NY 14227-1735

Work Order: RSC0813

Project: Commerce Square  
Project Number: 48000724

Received: 03/24/09  
Reported: 04/27/09 14:35

### Case Narrative

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. field-pH), they were not analyzed immediately, but as soon as possible after laboratory receipt.

A pertinent document is appended to this report, 1 page, is included and is an integral part of this report.

Reproduction of this analytical report is permitted only in its entirety. This report shall not be reproduced except in full without the written approval of the laboratory.

TestAmerica Laboratories, Inc. certifies that the analytical results contained herein apply only to the samples tested as received by our Laboratory.



Panamerican Environmental Inc.  
2390 Clinton Ave.  
Buffalo, NY 14227-1735

Work Order: RSC0813

Received: 03/24/09  
Reported: 04/27/09 14:35

Project: Commerce Square  
Project Number: 48000724

## LABORATORY (DATA QUALIFIERS AND DEFINITIONS)

<b>B</b>	Analyte was detected in the associated Method Blank.
<b>D02</b>	Dilution required due to sample matrix effects
<b>D08</b>	Dilution required due to high concentration of target analyte(s)
<b>ID4</b>	Benzo(b)fluoranthene coelutes with Benzo(k)fluoranthene. The reported result is a summation of the isomers and the concentration is based on the response factor of Benzo(b)fluoranthene
<b>J</b>	Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.
<b>L</b>	Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was above the acceptance limits. Analyte not detected, data not impacted.
<b>L1</b>	Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was above acceptance limits.
<b>M1</b>	The MS and/or MSD were outside the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
<b>M11</b>	The MS and/or MSD were above the acceptance limits.
<b>MHA</b>	Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
<b>MPS</b>	The Post spike and/or serial dilution were outside the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
<b>QSU</b>	Sulfur (EPA 3660) clean-up performed on extract.
<b>R</b>	The RPD exceeded the method control limit due to sample matrix effects. The individual analyte QA/QC recoveries, however, were within acceptance limits.
<b>Z5</b>	Due to sample matrix effects, the surrogate recovery was outside acceptance limits. Secondary surrogate recovery was within the acceptance limits.

### ADDITIONAL COMMENTS

Results are reported on a wet weight basis unless otherwise noted.

**Chain of Custody Record**

<b>Client Information</b>		<b>Lab File:</b> Paul Morrow E-Mail: Paul.Morrow@testamericainc.com		<b>Center Tracking No(s):</b>	
Company: Panamerican Environmental Inc.		Sampler: J. B. Szymulka		GDC No: 1	
Client Contact: Peter Gorton		Phone: (716) 465-7970		Page: 1	
Address: 2380 Clinton Ave.		Due Date Requested: 3/27/2009 16:00		Job #:	
City: Buffalo		TAT Requested (days): 30 CD		Analysis Requested	
State, Zip: NY, 14227-1735		PO #:		Preservation Codes: A - HCl B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Ascorbic Acid H - Iodo I - Iodo J - Di Water K - EDTA L - EDA Other:	
Phone: (716) 822.1658		WO #: RSC0666		M - Hexane N - None O - AsHClO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
Email: paul.morrow@panamericainc.com		Project #:		Total Number of Containers: 4	
Project Name: Commerce Square		SSOW#:		Special Instructions/Note:	
Site: Lockport, N.Y.					

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, F=soil, G=grab, O=other)	Field Filtered Sample (Yes or No)	Performs MS/MSD (Yes or No)	8268B	8270C:6010B	8270C:6010B	Special Instructions/Note:
CS-8H-02 (Repeatability)	03/24/09	1415	G	S	X	X	1	3	4	
CS-8H-05 (Repeatability)	11	1200	G	4			1	3		
CS-8H-05D (Repeatability)	13	1200	G	4			1	3		
CS-8H-07 (Repeatability)	14	1400	G	4			1	3		
CS-8H-07-MS (Repeatability)	14	1400	G	4			1	3		
CS-8H-07-MS (MSD)	14	1400	G	4			1	3		
CS-8H-09 (Repeatability)	14	1500	G	4			1	3		

Possible Hazard Identification  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown  Radiological

Deliverable Requested: I, II, III, IV, Other (specify)

Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Method of Shipment: \_\_\_\_\_

Relinquished by: *Walter J. Szymulka* Date/Time: 03/24/09 - 1400 Company: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Custody Seal Intact:  Yes  No Custody Seal No.: 610

Special Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Special Instructions/OC Requirements:



## **APPENDIX C**

### **Photographs**



**Photograph 1.** Location of CS-BH-01, facing south



**Photograph 2.** Facing south and location of CS-BH-03



**Photograph 3.** Location of CS-BH-05, facing west and Building #4



**Photograph 4.** Facing east, Building #2 and location of CS-BH-06



**Photograph 5.** Location of CS-BH-08, facing south across Walnut Street at Building #2