NEW YORK STATE OF OPPORTUNITY. | Department of Environmental Conservation

TAR SEEP INVESTIGATION REPORT

North Tonawanda Botanical Gardens
1825 Sweeney Street
North Tonawanda, NY 14120
Site #932068

November 30, 2015

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1.0 Introduction

The Botanical Gardens (the Site) is located in a residential area in the eastern part of the City of North Tonawanda. The site is approximately 11 acres in size and is located in the northeast corner of the intersection of Sweeney Street and East Robinson Street. The site location is shown on Figure 1.

An investigation was completed by the New York State Department of Environmental Conservation (NYSDEC) to investigate a tar seep observed in the south western portion of the Site in July 2015. Field work was completed by NYSDEC approved contractors under the supervision of NYSDEC Region 9 staff. Field work was completed in October 2015.

The investigation determined that there is an unregistered underground storage tank (UST) located to the west of the old park shed. There was also a significant amount of black, odiferous, refuse material in the subsurface soil borings that had a distinct sewage smell. It is believed that this material is not directly related to the tar. The investigation was able to locate the origin of the tar seep, but was unable to identify a source area. The tar material on the ground surface was collected for off-site disposal at a permitted facility.

Based on these results the NYSDEC will pursue negotiations with the City of North Tonawanda for the removal and further investigation of the UST. It is also recommended that test pits be completed to locate the source of the tar seep or determine if it was an isolated pocket of material.

2.0 Background

2.1 Site History

During the 1950s the City of North Tonawanda Department of Public Works was granted permission by the New York State Canal Commission to fill a low area along the canal with municipal refuse. Based on historical information, dumping operations were limited to the southern portion of the Site. In 1964, the New York State Department of Health (NYSDOH) reported violations at the Site, including the disposal of putrescible material and that an inadequate amount of material was used to cover the refuse. The City disposed of refuse at this location until approximately 1965. Dumping was discontinued at the Site due to the opening of waste management facilities in the area.

NYSDEC files also indicate that the Durez Division of Hooker Chemical may have disposed of industrial wastes at the Site and the adjacent Holiday Park Site (Site #932033) (NYSDEC, 1983). The waste was reported to include 125 tons of phenolic resins, 500 tons of phenolic

molding compounds, and 500 tons of general rubbish material (Malcom Pirnie, INC., 1999). The wastes were mainly solid materials and were transported to the site in drums.

The Botanical Gardens were developed at the site starting in 1962 by the Colorful Tonawandas Committee, which was largely composed of residents from the Wurlitzer Park area of North Tonawanda (Museum, 2015). The Botanical Gardens started with only a small greenhouse and garden areas but grew due to donations and work by the Colorful Tonawandas Committee. A boat launch was built in the 1960s to allow access to Tonawanda Creek.

In the 1983 concerns over the past dumping at and near the Site prompted the site to be listed to the Registry of Inactive Hazardous Waste Sites (the Registry), which is maintained by the NYSDEC (NYSDEC, 1983). Subsequent investigations completed at the site during the 1980s and 1990s did not document the disposal of hazardous waste at the Site, and it was delisted from the Registry in 2002.

In July 2015 a tar like material was observed seeping from the ground in the southern portion of the Site (NYSDEC, 2015). The NYSDEC was informed by North Tonawanda Parks Department of this seep and collected a sample for chemical analysis. The results indicate that the tar contains several compounds that are typical of the disposal of hazardous substances, and the site was reclassified as a 'potential-site' to be listed on the Registry for tracking purposes. As a result of the discovery of this material the NYSDEC conducted an investigation in 2015 to better characterize the nature and extent of the unknown tar material. The results of this investigation is the subject of this report.

2.2 Past Investigations

2.2.1 RECRA Research Inc. Analysis

RECRA Research Inc. (RECRA) conducted chemical analysis of groundwater samples from both Holiday Park and the Site in 1979 on behalf of the City of North Tonawanda (Engineering Science, INC. and Dames & Moore, 1983). Samples were analyzed for phenols and total halogenated organics to screen for signs hazardous waste. The qualitative analysis identified phenolic compounds, and potentially polychlorinated biphenyls (PCBs) in groundwater.

2.2.2 United States Geological Survey Investigation

The United States Geological Survey (USGS) installed monitoring wells at Holiday Park and the Site in 1979, and collected groundwater samples from the wells. Only two wells were installed on the Site, being designated USGS-1 and USGS-2 (Malcom Pirnie, INC., 1999). Groundwater sampling from 1979 detected total halogenated organics at a concentration of

19.1 parts per billion (ppb) in USGS-1. Other aliphatic, aromatic, and oxygenated hydrocarbons were also detected in the wells at low concentrations. The USGS conducted additional sampling and finalized their report on the sites in 1982. The USGS wells are reported to still be accessible on the Site.

2.2.3 Phase I and Phase II Reports

A Phase I Site Investigation was completed for the NYSDEC in 1983 by Engineering Science, INC (in association with Dames and Moore) (Engineering Science, INC. and Dames & Moore, 1983). The Phase I focused on summarizing the results of the RECRA analysis and USGS investigation. It concluded that a complete Hazard Ranking Score (HRS) could not be determined due to a lack of information, and recommended the completion of a Phase II investigation.

A Phase II Investigation was completed for the NYSDEC in 1985 by Wehran Engineering, P.C. (Wehran Engineering, P.C., 1985). Ambient air sampling for volatile organic compounds (VOCs) was the only activity conducted during the Phase II. VOCs were detected in Site air, but concentrations were consistent with levels observed in background ambient air samples. The report concluded that VOC impacts to ambient air related to the Site did not pose a threat to public health or the environment. The conclusion of the report recommended that additional groundwater and soil sampling be completed to confirm the results of the RECRA and USGS reports and determine if Site contamination is impacting Tonawanda Creek.

2.2.4 NYSDOH Surface Soil Sampling

Four surface soil samples were collected by the NYSDOH in 1992 to characterize the condition of site soils (Malcom Pirnie, INC., 1999). VOCs, semi-volatile organic compounds (SVOCs), pesticides, PCBs, and metals were detected in at least one of the soil samples. Sample S-4, located to the south of the boat launch, had the most detections. All of the detected compounds, with the exception of acetone (a VOC), were present at concentrations below NYSDEC soil cleanup levels.

2.2.5 Preliminary Site Assessment

A joint Preliminary Site Assessment (PSA) for Holiday Park and the Site was completed in 1999 by Malcolm Pirnie, INC. (Malcom Pirnie, INC., 1999) with field oversight from NYSDEC. The PSA collected subsurface soil samples, surface water samples, and groundwater samples for chemical analysis. NYSDEC also collected surface soil samples at this time, and the results were included in the PSA Report. Samples were analyzed for VOCs, SVOCs, pesticides,

PCBs, and metals. Surface soil samples were only analyzed for SVOCs. PCBs were not detected during the PSA in any environmental media.
Nine VOCs and SVOCs were detected in subsurface soil samples, with none exceeding the soil cleanup standards. Several metals were detected in subsurface soil at levels that exceed standards, but were determined to not be indicative of hazardous waste disposal. Several SVOCs were detected in the surface soil samples, but were well below standards.

Two surface water samples were collected, one from a surface depression and the other from the fountain/pond that is part of the Botanical Gardens. Results from the surface depression indicate that phenol, 4-methylphenol, iron, manganese, and sodium are present at levels that exceed standards. Results from the fountain/pond indicated that 1,2-dichloroethene, vinyl chloride, bis(2-ethylhexyl)phthalate, iron, and manganese are present at levels that exceed standards. Surface water was noted as being distinctly rust colored.

Monitoring well sampling results indicated that groundwater is impacted by carbon disulfide, benzene, 4,4-DDT, and several metals at levels that exceed standards.

It was noted on several soil boring logs that refuse material (bed springs, cardboard, plastic, etc.) was encountered in the subsurface, but no buried drums were encountered. A geophysical survey of the Site was also conducted, but was not able to definitively identify buried drums. The PSA concluded that while the Site is impacted by VOCs and unusually high iron concentrations, there was insufficient evidence to support that hazardous waste was disposed of at the Site. The PSA did note that high iron concentrations exfiltrating from groundwater into Tonawanda Creek may be a concern, but would require additional investigation. As a result of this and subsequent investigations, the site was delisted from the Registry dated January 1, 2002.

The PSA sample locations are shown on Figure 2 and analytical tables are provided in Appendix F.

2.2.6 Tar Seep Analytical

In July 2015 a tar like material was observed seeping from the ground in the southern portion of the Site near the adjacent residential property. A sample of the tar was collected by NYSDEC staff and analyzed for VOCs, SVOCs, pesticides, PCBs, and metals (TestAmerica Laboratories, Inc., 2015). Of the detected compounds in the tar, methylene chloride, tetrachloroethene (PCE), gamma-chlordane, copper, and zinc were present at levels exceeding their respective unrestricted soil cleanup objective (SCO). PCBs, barium, cadmium, and lead were present at levels exceeding their respective restricted-residential SCO. These results are summarized in Table 2. The area of the seep was not previously investigated during

the PSA or other investigations (Figure 2). Due to the compounds detected in the tar and its location, NYSDEC began an investigation to determine the source of the material and what future actions are warranted.

2.3 Geology

The overburden at the site is comprised of glaciolacustrine silt and clay deposits with lesser amounts of sand and gravel. These sediments were deposited when the area was covered by a proglacial lake which formed during the retreat of the Wisconsin glacier during the last ice age. In areas of the sites in which fill material was encountered during the boring investigation, the fill appeared to be reworked native material mixed with refuse. Previous investigations of the site indicated that bedrock is at a depth of approximately 25 feet below grade. Bedrock was not encountered during this investigation. The groundwater elevation measurements collected during previous investigations indicate that the water table slopes to the northeast toward the canal/creek at a relatively flat gradient. Historically, the depth to the water table ranges between 6 to 8 feet below grade (Malcom Pirnie, INC., 1999) and is likely in direct contact with the canal/creek waters.

3.0 Scope of Work

The NYSDEC issued callouts to Empire Geoservices, Inc. (NYSDEC Contract #C100908) and TestAmerica Laboratories, Inc. (NYSDEC Contract #C008010) to conduct the investigation of the tar seep observed at the Site.

The investigation is focused on the immediate area surrounding the tar seep, and consisted of the following:

- An electromagnetic and utility survey to identify any potential waste drums, underground storage tanks (USTs), the extent of tar product, and buried utilities;
- The advancement of soil borings using a track mounted GeoProbe up to 16 feet below ground surface (bgs) to delineate the extent of tar in the subsurface;
- Logging and field screening of soil borings by a geologist;
- The collection of soil samples from soil boring intervals exhibiting the greatest contamination;
- The installation of temporary monitoring wells to collect groundwater samples; and
- The analysis of all soil and groundwater samples for VOCs, SVOCs, pesticides, PCBs, and metals at a NYSDOH certified laboratory.

4.0 Results

4.1 Geophysical Surveys

The electromagnetic and utility survey were completed two weeks prior to boring activities by AMEC Foster Wheeler (AMEC) and On The Mark Locating (OTM), respectively. An electromagnetic survey map was generated by AMEC, and is included as Figure 3. Several anomalies were identified by the survey, indicated by the red to yellow areas on the figure. The anomalies to the north of the park shed are believed to be indicative of refuse disposed of at the site in the past. The large anomalies to the west of the park shed were investigated, and are discussed in Section 4.2 below.

4.2 Soil Boring Results

A total of eleven borings were completed using a track mounted GeoProbe equipped with a 2 inch diameter probe. The borings were originally targeted to be completed to 16 feet bgs, but the dense clay and till materials present at the site limited borings to a depth of 12 feet bgs. Several borings were limited in depth due to shallow refusal, poor recoveries, or encountering subsurface features. A summary of the boring descriptions and photoionization detector (PID) readings are presented in Table 1, with the full boring logs attached as Appendix A. Boring locations are shown on Figure 4.

Table 1: Soil Boring Summary

Location (Depth in feet)	Soil Description/Field Indicators	PID (ppm)
B-1 (0-12)	Thin layer of topsoil that grades to a brown/gray clay, followed by a reddish till. No signs of contamination	0
B-2 (0-9.3)	Thin layer of overburden over a layer of black, wet, refuse material. Extremely strong sewage odor. Limited recovery as the probe compressed the refuse material or became plugged. Possible tar globules on tip of the spoon.	4 - 1770
B-3 (0-12)	Similar to B-1, but did not encounter the reddish till unit. No signs of contamination.	0
B-4 (0-12)	Thin layer of overburden over a layer of black, wet, refuse material. Extremely strong sewage odor. Limited recovery. Reddish till encountered at base of boring appeared to be clear of impacts.	40 - 240
B-5 (0-12)	Possible slag material encountered at ~1 ft bgs. Black refuse material present at lower depths, strong sewage odor. Clean brown/gray clay and reddish till encountered at end of boring.	40 -220

Location (Depth in feet)	Soil Description/Field Indicators	PID (ppm)
B-6 (0-1)	Encountered a hollow metal object at ~1 ft bgs. Boring was hand cleared to expose what appears to be an underground storage tank, size unknown.	N/A
B-7 (0-12)	Thin layer of topsoil underlain by brown/gray silt and clay. No signs of contamination.	0
B-8A (0-4)	Encountered black refuse material, but met shallow refusal due to a large woody debris. Some odors. Stepped out boring to avoid refusal.	0 - 32
B-8B (0-2.5)	Limited recovery, gravel stuck in end of probe. Encountered same woody debris causing refusal. Boring abandoned.	N/A
B-9 (0-7)	Partial recovery throughout boring. Some black refuse material in end of boring, some odors. Clean gray clay at base of boring.	4 - 12
B-10 (0-12)	Advanced directly on top of tar seep. Veins of tar material observed in boring, with tar smearing on outside of probe. A mix of tar, water, and air bubbled out of the push rods recovering the final probe. Tar did not exhibit an odor. Clean brown/gray clay and reddish till encountered at base of boring.	0

Borings B-2, B-4, B-5, B-6, B-9, B-10, and to a lesser extent B-8A/B-8B were all advanced in the relatively low 'trough' area that originates near the park shed and runs approximately SE to NW (see Appendix B, Photo 11). These borings were typified by a distinct black, wet, odoriferous refuse material encountered below a thin layer of overburden material. The refuse material had a distinct sewage or septic system smell that persisted in the area throughout the work. The refuse was largely decomposed, but bits of cardboard, wall paper, wood, glass, and plastic could be distinguished in some borings. Many of these boring only had partial recoveries as the refuse material was readily compressed or the probe tip became plugged by debris. While this refuse material is clearly a waste (likely placed while the site was used as a dump) it did not appear to be directly related to the tar based on its physical appearance. The dense native clay and/or till at the base of the borings did not appear to be impacted significantly by the refuse material.

Borings B-5, B-6, and B-7 were completed to investigate the electromagnetic anomalies near the park shed. B-5 was targeted to be on the edge of the large western anomaly identified by the electromagnetic survey. A slug of slag-like material was recovered in the boring, at approximately 1 foot bgs. Slag material is known to exhibit metallic properties in electromagnetic surveys. To confirm that the electromagnetic response was related to slag-

like material B-6 was advanced near the center of the anomaly. B-6 was only completed to approximately 1 foot bgs, where the probe encountered a hollow metal object. The boring was abandoned and the hole expanded using a shovel until it was approximately 1.5 feet in diameter. The metal object appeared to be a small underground storage tank (UST) of unknown size and contents. The majority of the western anomaly is attributed to this UST. B-7 was completed in the smaller north-western anomaly, but did not find any material that would cause such a response. Additional investigation surrounding B-7 was limited by the overhead power lines.

Borings B-9 and B-10 were completed in the immediate vicinity of the surface tar seep, as the previous borings lacked signs of significant tar material. B-9 was located approximately 1 foot NW of the edge of the tar seep. Even this close to the seep no clear tar material was observed. Following the completion of B-9 a shovel was used to hand excavate the soil surrounding the tar seep. The tar was largely restricted to the surface of the soil, not even impacting the thin layer of topsoil. The hand excavation discovered a small 'vein' of tar the extended down near the center of the seep. B-10 was completed directly on top of this vein. Tar material was recovered throughout the boring, but in discrete intervals, suggesting that the vein follows a somewhat sinuous path. The outside of the probe was coated with tar due to smearing. While extracting the 8-12 feet core a mixture of tar, water, and air bubbled up from the push rods. It was not clear if this flow was induced by the probe or if the material was already pressurized in the subsurface. No odors were associated with the tar material.

There were some free tar globules recovered from the probe or boring cores of B-10. At first the tar was highly viscous, almost dense, but did become less viscous after sitting in the sun for several minutes. The tar did not exhibit an odor nor register a PID reading. The bottom of B-10 encountered the same brown/gray clay and reddish till that was observed in the other borings at the site. The clay and till did not exhibit any tar material.

Due to poor soil recoveries and the nature of the refuse material (contained debris chunks and few fines) no analytical samples were collected. Surface soil and boring cuttings that were impacted by the tar or refuse material were containerized in 5 gallon plastic buckets for disposal at a permitted facility. Bore holes were backfilled using clean native material or bentonite chips as needed.

Photographs of the investigation are included in Appendix B.

4.3 Groundwater

A significant amount groundwater was not encountered during the investigation. While the refuse material was highly saturated, the clay or till material underlying it was either dry or only moist. It is likely that the refuse material serves a porous media to store perched rain water on top of the low-permeability clay and till.

Temporary monitoring wells were not installed as part of the investigation due to a lack of groundwater.

5.0 Discussion and Recommendations

The subsurface investigation surrounding the tar seep was unable to locate the source of the tar material. The tar migrated to the ground surface through a thin vein in the soil that was too fine for the GeoProbe to consistently locate. Additional investigation using test pits or hand excavations may provide greater insight into the source of the material. Based on the observed hydrogeology surrounding the seep area it is likely that the tar had accumulated on top of the clay and till layer and was transported to the ground surface on top of rain water that had pooled on the low permeability clay. This theory is supported by precipitation data collected by the National Weather Service, included as Appendix C.

The UST that was discovered in front of the park shed is not a registered tank, and based on its depth not properly installed. It will have to be removed and the surrounding soil investigated to determine if there have been leaks from the tank. Prior to removing the tank the overhead power lines would have to be decommissioned and several limbs of the nearby tree would have to be removed. It should be pointed out, that due to the size of the western electromagnetic anomaly that there may be another tank/metal object near the park shed.

The black refuse material was consistently encountered in borings from the low ‘trough’ area. The exact thickness of the material is unknown as the probe tended to compress the soft material or become plugged with debris. Based on the cores with better recoveries the refuse material is likely several feet thick. It is recommended that future analytical samples be collected if material of sufficient quality and volume is encountered. When the refuse material was exposed to the atmosphere numerous small bubbles appeared on the surface of the saturated material. It is suspected that this was due to increased aerobic microbial activity.

6.0 Conclusions

The investigation was unsuccessful in locating the source of the tar seep that was observed at the Botanical Gardens in July 2015. Borings identified a thin vein in the subsurface that the tar migrated to the surface through, but did not locate a source area. While a distinct black, odiferous, refuse material is present throughout a low area of the site it is unclear that this material is related to the tar. The refuse material had an extremely strong sewage smell, but did not exhibit any other characteristics that would relate it to hazardous waste disposal. This refuse material is likely tied to the dumping activities conducted at the site during the 1950s and 1960s.

A previously unknown UST was discovered near the park shed. The exact size and contents of the tank are unknown at this time, but based on field observations it is likely relatively small. As this tank is not registered or properly installed it will have to be removed, and the surrounding subsurface investigated for signs leakage from the tank. Concurrent with tank removal activities it is recommended that test pits be completed to fully investigate the remainder of the western electromagnetic anomaly and the area of the tar seep. Any tar material encountered during future site work should be removed for disposal off-site at a permitted facility.

7.0 References

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TABLES

Table 2: July 2015 Tar Analytical Results[2]

Compound	Result		Units	Part 375 SCOs[1] (mg/kg)	
				Unrestricted	Restricted Residential
Volatile Organic Compounds (EPA Method 8260)					
Methyl acetate	200		mg/kg	-	-
Methylene chloride	0.81	J	mg/kg	0.05	100
Tetrachloroethene	3.2		mg/kg	1.3	19
Organochlorine Pesticides (EPA Method 8081)					
gamma-Chlordane	1.4	J	mg/kg	0.094	24
Poly Chlorinated Biphenyls (PCBs) (EPA Method 8082)					
PCB-1248	22		mg/kg	-	-
PCB-1254	8.3		mg/kg	-	-
PCB-1260	5.3		mg/kg	-	-
Total PCBs	35.6		mg/kg	0.1	1
Metals (EPA Method 6010)					
Aluminum	158		mg/kg	-	-
Antimony	0.46	J	mg/kg	-	-
Arsenic	1.6	J	mg/kg	13	16
Barium	6940		mg/kg	350	400
Cadmium	4.8		mg/kg	2.5	4.3
Calcium	1300	B	mg/kg	-	-
Chromium	25.3		mg/kg	30	180
Copper	111		mg/kg	50	270
Iron	1090		mg/kg	-	-
Lead	26200		mg/kg	63	400
Magnesium	66		mg/kg	-	-
Manganese	12	B	mg/kg	1600	2000
Nickel	6		mg/kg	30	310
Potassium	61.4		mg/kg	-	-
Silver	0.21	J	mg/kg	2	180
Sodium	446		mg/kg	-	-
Vanadium	1.1		mg/kg	-	-
Zinc	914		mg/kg	109	10000

1 : 6 NYCRR Part 375-6.8 Soil Cleanup Objectives (SCOs)
2 : only compounds detected over their respective reporting limits are included.
J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B : Compound was found in the blank and sample.
"-" : indicates that a specific SCO for this compound does not exist.
concentration exceeds unrestricted SCO
concentration exceeds restricted residential SCO

FIGURES

Figure 1: Site Location Map
Botanical Gardens
North Tonawanda, NY 14120
Site #932068
November 2015

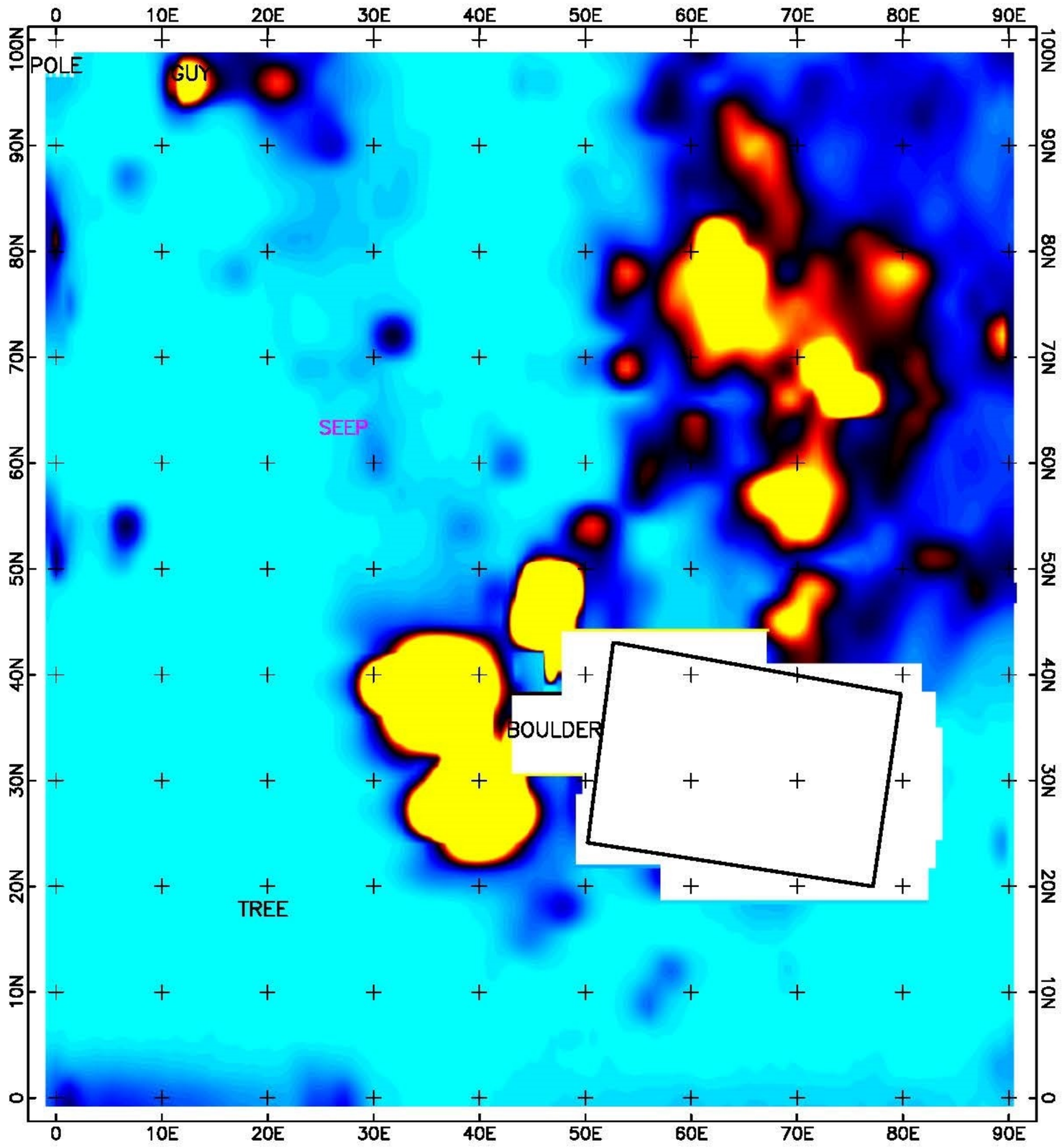
Author: Ben McPherson Revised: 11/5/2015 \\gis-serv\workspace\private\R9\Botanical Gardens\Bontanical Gardens- Site Location.mxd

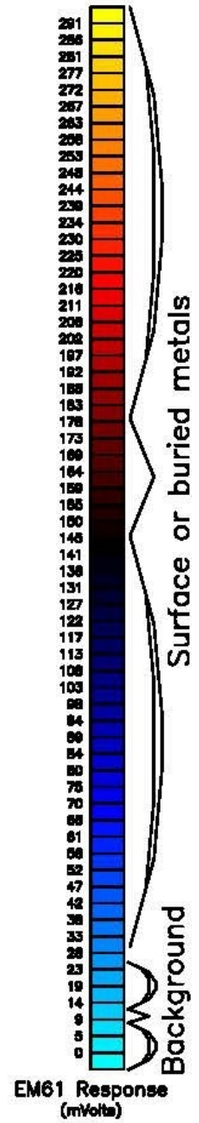
Figure 2: PSA Sampling Locations
Botanical Gardens
North Tonawanda, NY 14120
Site #932068
November 1999

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Sources: Holiday Park/Botanical Gardens Preliminary Site Assessments, Malcom Pirnie, INC. (1999)

Author: Ben McPherson Revised: 11/17/2015 \\gis-serv\workspace\private\R9\Botanical Gardens\Bontanical Gardens- Figure 1- PSA Sampling Locations.mxd





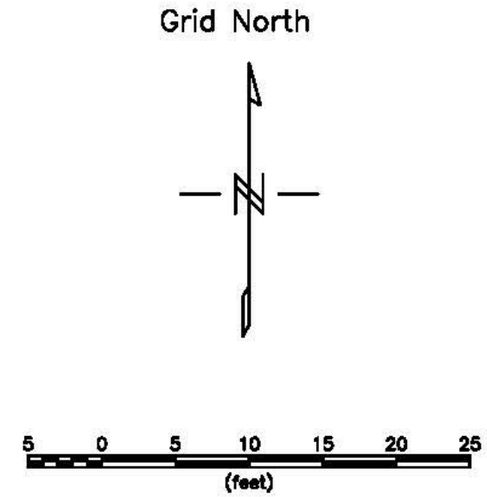


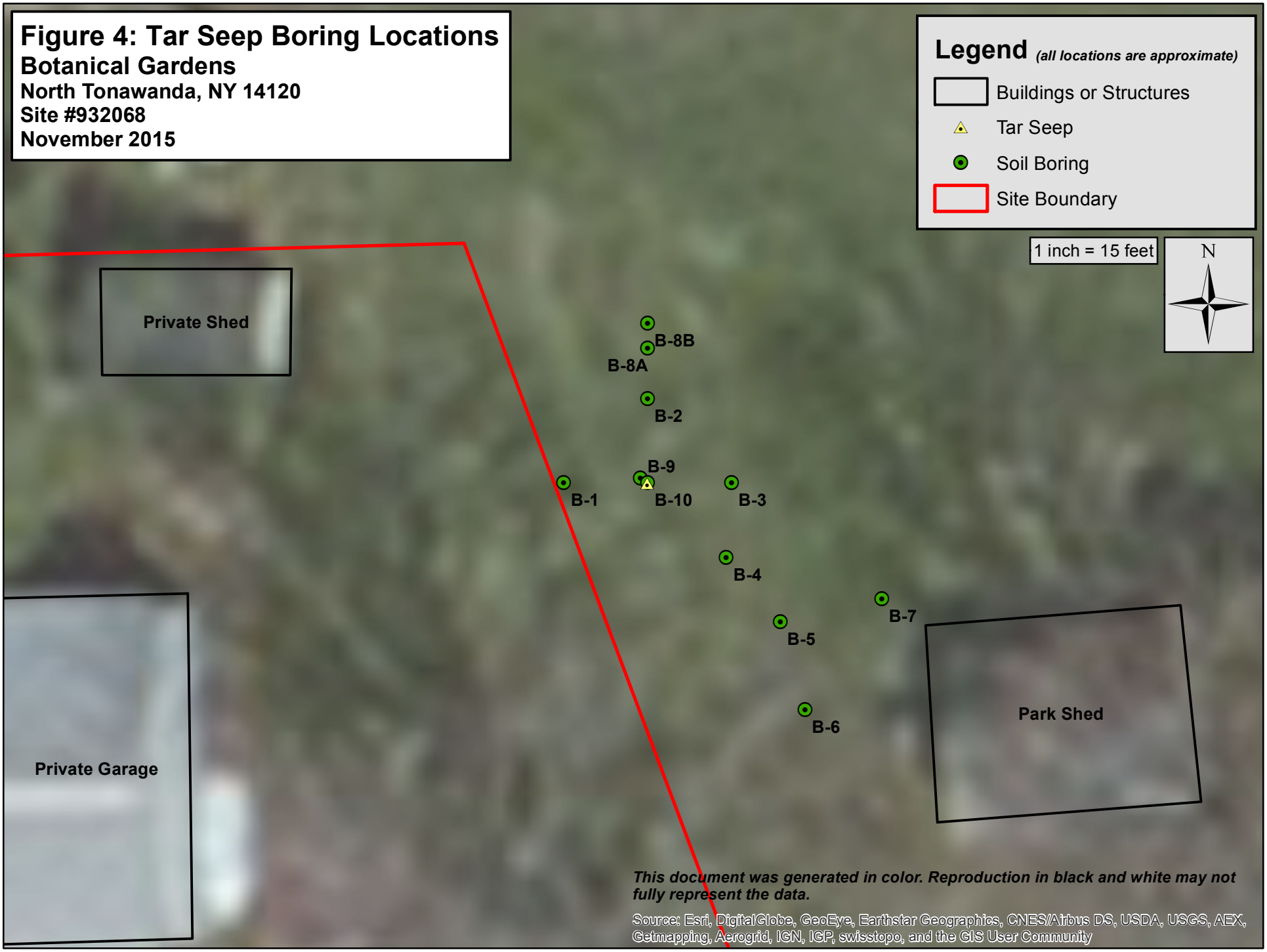
*Figure title modified by NYSDEC to match report naming convention

Figure 3*

Geophysical Survey Results
Color Contours of EM61 Data
(mVolts)

Botanical Gardens Site
North Tonawanda, NY
Empire Geoservices

Amec Foster Wheeler (716) 998-6973



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APPENDICES

Appendix A:
Soil Boring Logs

DATE:
STARTED 10/19/2015
FINISHED 10/19/2015
SHEET 1 OF 1

SJB SERVICES, INC.
DIRECT PUSH LOG

HOLE NO. B-1
SURF. ELEV
G.W. DEPTH See Notes

PROJECT: BOTANICAL GARDENS
PROJ. NO.: BEV-15-050
LOCATION: OLD FALLS BLVD.
NORTH TONAWANDA, NY

DEPTH FT.	PID READING	SOIL OR ROCK CLASSIFICATION	NOTES
	BG	TOPSOIL 0.5'	PID: Photoionization Detector readings in parts per million (ppm)
1		Brown Silty CLAY, tr.sand (moist, CL)	
2		Contains roots at 1.7'	BG: Background PID reading
3			
4		Becomes Mottled Tan-Brown and Gray	
	BG		
5			
6			
7			
8			
	BG	Contains little f-c Sand	
9		Becomes wet at 8.8'	
10			
		Contains Gray f-c Sand, tr.gravel, tr.shell 10.1' - 10.6'	
11		Red-Brown Silty CLAY, little f-c Sand, little f-c Gravel (moist, CL)	
12			
13		Boring Complete at 12.0'	Free Standing Water recorded at 6.3' at Boring Completion
14			
15			
16			

DRILLER: R. STEINER **DRILL RIG TYPE:** GEOPROBE 6620 DT **CLASSIFIED BY:** D. STEINER

METHOD OF INVESTIGATION: ASTM 6282 - DIRECT PUSH SAMPLING

DATE:
STARTED 10/19/2015
FINISHED 10/19/2015
SHEET 1 OF 1

SJB SERVICES, INC.
DIRECT PUSH LOG

HOLE NO. B-2
SURF. ELEV
G.W. DEPTH See Notes

PROJECT: BOTANICAL GARDENS
PROJ. NO.: BEV-15-050
LOCATION: OLD FALLS BLVD.
NORTH TONAWANDA, NY

DEPTH FT.	PID READING	SOIL OR ROCK CLASSIFICATION	NOTES
		TOPSOIL 0.3'	PID: Photoionization Detector readings in parts per million (ppm)
1	BG	Brown Silty CLAY, tr.sand (moist, CL-FILL)	
2	BG		BG: Background PID reading
3	BG		
4	5	Contains Black wet seam with Wood and Plastic fragments 3.9' - 7.3'	
5	158		
	180		water in sampler with
6	1770		septic-type odor
7	570	Contains Gray-Black Silty Clay, little f-m Sand	
	160		
8	8		
9	BG		
10		Boring Complete with Refusal at 9.3'	
11			Free Standing Water recorded at 6.2' at Boring Completion
12			
13			
14			
15			
16			

DRILLER: R. STEINER **DRILL RIG TYPE:** GEOPROBE 6620 DT **CLASSIFIED BY:** D. STEINER

METHOD OF INVESTIGATION: ASTM 6282 - DIRECT PUSH SAMPLING

DATE:
STARTED 10/19/2015
FINISHED 10/19/2015
SHEET 1 OF 1

SJB SERVICES, INC.
DIRECT PUSH LOG

HOLE NO. B-3
SURF. ELEV
G.W. DEPTH See Notes

PROJECT: BOTANICAL GARDENS
PROJ. NO.: BEV-15-050
LOCATION: OLD FALLS BLVD.
NORTH TONAWANDA, NY

DEPTH FT.	PID READING	SOIL OR ROCK CLASSIFICATION	NOTES
	BG	TOPSOIL 0.4'	PID: Photoionization Detector readings in parts per million (ppm)
1		Brown Silty CLAY, tr.sand (moist, CL-FILL)	
2			BG: Background PID reading
3			
4			
	BG		
5			
6		Becomes Gray and more moist at 6'	
7			
8			
	BG	Becomes wet at 8.7'	
9			
			No odor
10		Contains little f-m Sand, tr.shells	No stain
11			
12		Red-Brown Silty CLAY, little f-c Sand, tr.gravel (moist, CL)	
13		Boring Complete at 12.0'	Free Standing Water recorded at 6.5' at Boring Completion
14			
15			
16			

DRILLER: R. STEINER **DRILL RIG TYPE:** GEOPROBE 6620 DT **CLASSIFIED BY:** D. STEINER

METHOD OF INVESTIGATION: ASTM 6282 - DIRECT PUSH SAMPLING

DATE:
STARTED 10/19/2015
FINISHED 10/19/2015
SHEET 1 OF 1

SJB SERVICES, INC.
DIRECT PUSH LOG

HOLE NO. B-4
SURF. ELEV
G.W. DEPTH See Notes

PROJECT: BOTANICAL GARDENS
PROJ. NO.: BEV-15-050
LOCATION: OLD FALLS BLVD.
NORTH TONAWANDA, NY

DEPTH FT.	PID READING	SOIL OR ROCK CLASSIFICATION	NOTES
	BG	TOPSOIL 0.5'	PID: Photoionization Detector readings in parts per million (ppm)
1		Brown Silty CLAY, tr.sand (moist, CL-FILL)	
2			BG: Background PID reading
3			
4			
	BG		
5		Black Silty CLAY, little f-c Sand, tr.glass, tr.paper	
			Water in sampler with septic odor
6	240		
7	1500	Contains shredded Wood and Tar mixed with water	
	178		
8	18		
	40		
9			
	130		
10	8	Brown-Gray Silty CLAY, little f-m Sand (wet, CL)	
11	BG		
		11.2'	
12	BG	Becomes Red-Brown, Contains little f-c Sand, little f-c Gravel (moist)	
13		Boring Complete at 12.0'	Free Standing Water recorded at 6.4' at Boring Completion
14			
15			
16			

DRILLER: R. STEINER **DRILL RIG TYPE:** GEOPROBE 6620 DT **CLASSIFIED BY:** D. STEINER

METHOD OF INVESTIGATION: ASTM 6282 - DIRECT PUSH SAMPLING

DATE:
STARTED 10/19/2015
FINISHED 10/19/2015
SHEET 1 OF 1

SJB SERVICES, INC.
DIRECT PUSH LOG

HOLE NO. B-5
SURF. ELEV
G.W. DEPTH See Notes

PROJECT: BOTANICAL GARDENS
PROJ. NO.: BEV-15-050
LOCATION: OLD FALLS BLVD.
NORTH TONAWANDA, NY

DEPTH FT.	PID READING	SOIL OR ROCK CLASSIFICATION	NOTES
	BG	TOPSOIL 0.4'	PID: Photoionization Detector readings in parts per million (ppm)
1		SLAG fragments at 0.7'	
		Tan-Brown Silty CLAY, tr.sand (moist, CL-FILL)	
2			BG: Background PID reading
3			
4			
5	BG	Brown and Black FILL, Contains Wood, Glass, Plastic, Silty Clay soil	
	BG		
6	BG		Septic odor
7	2		
	40-70		
8	220		
	8		
9		Gray and Brown Silty CLAY, tr.sand (moist-wet, CL)	
	BG	(wet)	
10	BG	Contains some f-c Sand, little f-m Gravel	
		10.5'	
11	BG	Contains Red-Brown Silty CLAY, little f-c Sand, little f-c Gravel	
12		Boring Complete with Refusal at 11.2'	Free Standing Water recorded at 6.0' at Boring Completion
13			
14			
15			
16			

DRILLER: R. STEINER **DRILL RIG TYPE:** GEOPROBE 6620 DT **CLASSIFIED BY:** D. STEINER

METHOD OF INVESTIGATION: ASTM 6282 - DIRECT PUSH SAMPLING

DATE:
STARTED 10/19/2015
FINISHED 10/19/2015
SHEET 1 OF 1

SJB SERVICES, INC.
DIRECT PUSH LOG

HOLE NO. B-6
SURF. ELEV
G.W. DEPTH See Notes

PROJECT: BOTANICAL GARDENS
PROJ. NO.: BEV-15-050
LOCATION: OLD FALLS BLVD.
NORTH TONAWANDA, NY

DEPTH FT.	PID READING	SOIL OR ROCK CLASSIFICATION	NOTES
1	BG	Refusal at 1' on Tank	
2		Boring Complete at 1.0'	No Free standing Water
3		Excavated by hand with shovel to verify tank	PID: Photoionization Detector readings in parts per million (ppm)
4			
5			BG: Background PID reading
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

DRILLER: R. STEINER **DRILL RIG TYPE:** GEOPROBE 6620 DT **CLASSIFIED BY:** D. STEINER

METHOD OF INVESTIGATION: ASTM 6282 - DIRECT PUSH SAMPLING

DATE:
STARTED 10/19/2015
FINISHED 10/19/2015
SHEET 1 OF 1

SJB SERVICES, INC.
DIRECT PUSH LOG

HOLE NO. B-7
SURF. ELEV
G.W. DEPTH See Notes

PROJECT: BOTANICAL GARDENS
PROJ. NO.: BEV-15-050
LOCATION: OLD FALLS BLVD.
NORTH TONAWANDA, NY

DEPTH FT.	PID READING	SOIL OR ROCK CLASSIFICATION	NOTES
	BG	TOPSOIL 0.2'	PID: Photoionization Detector readings in parts per million (ppm)
1		Tan Brown Silty CLAY, tr.sand (moist, CL-FILL)	
2			BG: Background PID reading
3			
4			
	BG		
5			
6		Becomes Gray and more moist at 6'	
7			
8		Becomes Gray-Brown, more Plastic	
	BG	(wet)	No odor
9			No stain
10			
		Contains little f-m Sand	
11			
		Contains some f-m Sand	
12			
13		Boring Complete at 12.0'	Free Standing Water recorded at 6.7' at Boring Completion
14			
15			
16			

DRILLER: R. STEINER **DRILL RIG TYPE:** GEOPROBE 6620 DT **CLASSIFIED BY:** D. STEINER

METHOD OF INVESTIGATION: ASTM 6282 - DIRECT PUSH SAMPLING

DATE:
STARTED 10/19/2015
FINISHED 10/19/2015
SHEET 1 OF 1

SJB SERVICES, INC.
DIRECT PUSH LOG

HOLE NO. B-8A
SURF. ELEV
G.W. DEPTH See Notes

PROJECT: BOTANICAL GARDENS
PROJ. NO.: BEV-15-050
LOCATION: OLD FALLS BLVD.
NORTH TONAWANDA, NY

DEPTH FT.	PID READING	SOIL OR ROCK CLASSIFICATION	NOTES
1	BG	TOPSOIL 0.2'	PID: Photoionization Detector readings in parts per million (ppm)
2		Brown Silty CLAY, tr.sand, tr.gravel (moist, CL-FILL)	
3			BG: Background PID reading
4	32	Contains Wood (wet)	
5		Boring Complete with Refusal at 3.9'	No Free Standing Water Encountered at Completion
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

DRILLER: R. STEINER **DRILL RIG TYPE:** GEOPROBE 6620 DT **CLASSIFIED BY:** D. STEINER

METHOD OF INVESTIGATION: ASTM 6282 - DIRECT PUSH SAMPLING

DATE:
STARTED 10/19/2015
FINISHED 10/19/2015
SHEET 1 OF 1

SJB SERVICES, INC.
DIRECT PUSH LOG

HOLE NO. B-8B
SURF. ELEV
G.W. DEPTH See Notes

PROJECT: BOTANICAL GARDENS
PROJ. NO.: BEV-15-050
LOCATION: OLD FALLS BLVD.
NORTH TONAWANDA, NY

DEPTH FT.	PID READING	SOIL OR ROCK CLASSIFICATION	NOTES
1	BG	TOPSOIL 0.2'	PID: Photoionization Detector readings in parts per million (ppm)
2	↓	Brown Silty CLAY, tr.sand, tr.gravel, tr.glass (moist, CL-FILL)	BG: Background PID reading
3		Boring Complete with Refusal at 2.5'	No Free standing Water Encountered at Completion
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

DRILLER: R. STEINER **DRILL RIG TYPE:** GEOPROBE 6620 DT **CLASSIFIED BY:** D. STEINER

METHOD OF INVESTIGATION: ASTM 6282 - DIRECT PUSH SAMPLING

DATE:
STARTED 10/19/2015
FINISHED 10/19/2015
SHEET 1 OF 1

SJB SERVICES, INC.
DIRECT PUSH LOG

HOLE NO. B-9
SURF. ELEV
G.W. DEPTH See Notes

PROJECT: BOTANICAL GARDENS
PROJ. NO.: BEV-15-050
LOCATION: OLD FALLS BLVD.
NORTH TONAWANDA, NY

DEPTH FT.	PID READING	SOIL OR ROCK CLASSIFICATION	NOTES
1	BG	TOPSOIL 0.3'	PID: Photoionization Detector readings in parts per million (ppm)
2		Brown Silty CLAY, tr.sand, tr.gravel (moist, CL-FILL)	
3			BG: Background PID reading
4			
5	BG		
6			Septic odor
7	8 12	Brown and Black Silty CLAY and Wood fragments, tr.sand (wet, FILL)	
8	5 4		
9	56 8	Gray-Brown Silty CLAY, tr.sand (wet, CL)	
10	BG		
11	BG	Becomes Red-Brown, Contains little f-c Sand, little f-c Gravel	
12		Boring Complete with Refusal at 10.9'	Free Standing Water recorded at 6.3' at Boring Completion
13			
14			
15			
16			

DRILLER: R. STEINER **DRILL RIG TYPE:** GEOPROBE 6620 DT **CLASSIFIED BY:** D. STEINER

METHOD OF INVESTIGATION: ASTM 6282 - DIRECT PUSH SAMPLING

DATE:
STARTED 10/19/2015
FINISHED 10/19/2015
SHEET 1 OF 1

SJB SERVICES, INC.
DIRECT PUSH LOG

HOLE NO. B-10
SURF. ELEV
G.W. DEPTH See Notes

PROJECT: BOTANICAL GARDENS
PROJ. NO.: BEV-15-050
LOCATION: OLD FALLS BLVD.
NORTH TONAWANDA, NY

DEPTH FT.	PID READING	SOIL OR ROCK CLASSIFICATION	NOTES
1	BG	TOPSOIL 0.3'	PID: Photoionization Detector readings in parts per million (ppm)
2		Brown Silty CLAY, tr.sand, occasional Tar (wet, FILL)	BG: Background PID reading
3		Tan-Brown Silty CLAY, tr.sand (moist, CL-FILL)	
4			
5	BG		
6			
7			
8		Contains Wood with Paper at 7.8' - 8'	
9	BG		Septic odor
10		Gray-Brown Silty CLAY, tr.sand (moist-wet, CL)	
11			
12		Contains little f-c Sand, little f-c Gravel (moist)	
13		Boring Complete at 12.0'	Free Standing Water recorded at 7.8' at Boring Completion
14			
15		(Note: Possible PID malfunction screening soils at depths below 7 feet since elevated PID readings were associated with the Septic odor in other borings)	
16			

DRILLER: R. STEINER **DRILL RIG TYPE:** GEOPROBE 6620 DT **CLASSIFIED BY:** D. STEINER

METHOD OF INVESTIGATION: ASTM 6282 - DIRECT PUSH SAMPLING

Appendix B:
Investigation Photo Log

Photo 1: picture of tar seep area (surrounded by the orange construction fence) before boring work, facing south-east looking towards Robinson Street.

[B. McPherson, 10/19/2015]

Photo 2: picture of tar seep area (surrounded by the orange construction fence) before boring work, facing south-west looking towards Robinson Street.

[B. McPherson, 10/19/2015]

Photo 3: picture of B-2 from 4'–8' core. Note high moisture content and black material throughout. Very strong sewage smell. Refuse debris evident in the middle portion of the core.

[B. McPherson, 10/19/2015]

Photo 4: picture of B-4 from 4'–8' core. Note woody debris mixed with refuse material. Apparent wall paper in the end of the core. Very strong sewage smell. Black discoloration throughout.

[B. McPherson, 10/19/2015]

Photo 5: picture of hand dug hole surrounding B-6. Reddish-orange material in hole is the top of the discovered UST.

[B. McPherson, 10/19/2015]

Photo 6: close-up picture of hand dug hole surrounding B-6. Reddish-orange material in hole is the top of the discovered UST.

[B. McPherson, 10/19/2015]

Photo 7: picture of hand dug hole surrounding the tar seep. Note that soil/root layer immediately below the seep does not appear impacted by tar (outlined in red).

[B. McPherson, 10/19/2015]

Photo 8: picture of hand dug hole surrounding the tar seep, below surface soil. Note that tar impacts are not widespread.

[B. McPherson, 10/19/2015]

Photo 9: picture of hand dug hole surrounding the tar seep, below surface soil. Note the ‘vein’ of tar that appears to be the migration pathway to the surface (outlined in red).

[B. McPherson, 10/19/2015]

Photo 10: picture of a horizontal shovel recovery from under the tar seep. Note the ‘vein’ of tar that appears to be the migration pathway to the surface (outlined in red).

[B. McPherson, 10/19/2015]

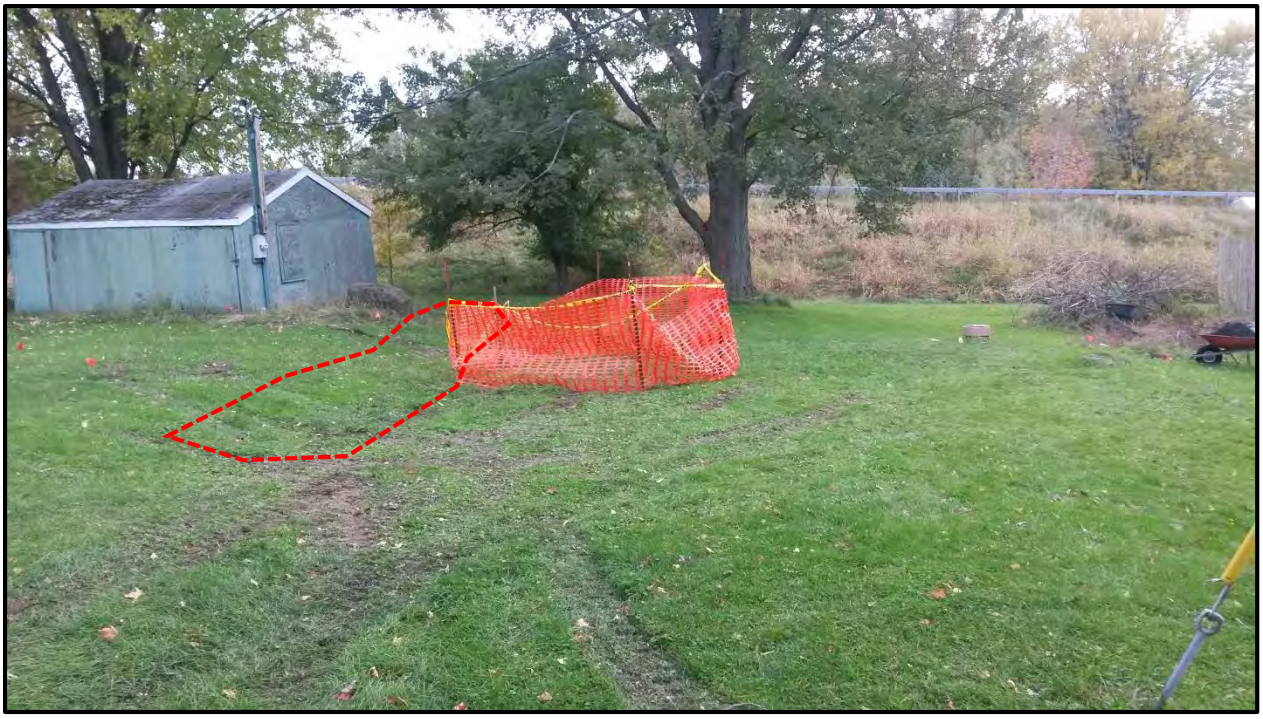

Photo 11: picture of tar seep area (surrounded by the orange construction fence) after completion of boring work, facing south-east looking towards Robinson Street. Approximate location of the low 'trough' area (outlined in red) that extends past the tar seep towards the park shed.

[B. McPherson, 10/19/2015]

Photo 12: picture of discovered UST/B-6 location relative to the park shed (stake with pink flag), facing east.

[B. McPherson, 11/03/2015]

Photo 13: picture of discovered UST/B-6 location relative to the park shed (stake with pink flag), facing north.

[B. McPherson, 11/03/2015]

Photo 14: picture of discovered UST/B-6 location relative to the park shed (stake with pink flag), facing north-west. Private shed in background.

[B. McPherson, 11/03/2015]

Appendix C:
National Weather Service Data

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

Climatological Report (Monthly)

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CXUS51 KBUF 060049
CLMBUF

CLIMATE REPORT
NATIONAL WEATHER SERVICE BUFFALO NY
607 PM EDT MON JUN 1 2015

.................................

...THE BUFFALO NY CLIMATE SUMMARY FOR THE MONTH OF MAY 2015...

CLIMATE NORMAL PERIOD 1981 TO 2010
CLIMATE RECORD PERIOD 1871 TO 2015
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WEATHER	OBSERVED VALUE	DATE(S)	NORMAL VALUE	DEPART FROM NORMAL	LAST YEAR`S VALUE	DATE(S)
TEMPERATURE (F)						
RECORD						
HIGH	94	05/22/1911				
LOW	25	05/04/1926				
HIGHEST	89	05/09			85	05/13
LOWEST	34	05/23			37	05/05
AVG. MAXIMUM	73.1		66.5	6.6	66.7	
AVG. MINIMUM	52.2		47.4	4.8	48.6	
MEAN	62.6		56.9	5.7	57.7	
DAYS MAX >= 90	0		0.0	0.0	0	
DAYS MAX <= 32	0		0.0	0.0	0	
DAYS MIN <= 32	0		0.2	-0.2	0	
DAYS MIN <= 0	0		0.0	0.0	0	
PRECIPITATION (INCHES)						
RECORD						
MAXIMUM	8.09	2011				
MINIMUM	0.53	1877				
TOTALS	3.50		3.46	0.04	3.12	
DAYS >= .01	9				14	
DAYS >= .10	4				8	
DAYS >= .50	1				2	
DAYS >= 1.00	1				0	
GREATEST						
24 HR. TOTAL	2.44	05/31 TO 05/31				
SNOWFALL (INCHES)						
RECORDS						
TOTAL	7.9	1989				
TOTALS	0.0		0.3	-0.3	0.0	
SINCE 7/1	112.9		94.7	18.2		
SNOWDEPTH AVG.	0		MM	MM	0	
DAYS >= 1.0	0		0.0	0.0	0	

```
GREATEST
 SNOW DEPTH          0   MM                              0  MM
 24 HR TOTAL       0.0   05/31 TO 05/31

DEGREE_DAYS
HEATING TOTAL      158              272    -114      242
 SINCE 7/1        6978             6553     425     7097
COOLING TOTAL       91               23      68       23
 SINCE 1/1          91               26      65       23
.................................................

WIND (MPH)
AVERAGE WIND SPEED              10.0
HIGHEST WIND SPEED/DIRECTION    31/280    DATE  05/27
HIGHEST GUST SPEED/DIRECTION    41/280    DATE  05/27

SKY COVER
POSSIBLE SUNSHINE (PERCENT)   MM
NUMBER OF DAYS FAIR            4
NUMBER OF DAYS PC             20
NUMBER OF DAYS CLOUDY          7

AVERAGE RH (PERCENT)     64

WEATHER CONDITIONS. NUMBER OF DAYS WITH
THUNDERSTORM               3     MIXED PRECIP               0
HEAVY RAIN                 3     RAIN                       4
LIGHT RAIN                12     FREEZING RAIN              0
LT FREEZING RAIN           0     HAIL                       0
HEAVY SNOW                 0     SNOW                       0
LIGHT SNOW                 0     SLEET                      0
FOG                       15     FOG W/VIS <= 1/4 MILE      1
HAZE                       6

-  INDICATES NEGATIVE NUMBERS.
R  INDICATES RECORD WAS SET OR TIED.
MM INDICATES DATA IS MISSING.
T  INDICATES TRACE AMOUNT.

&&

...VERY WARM AND DRY MAY...

AFTER A COLD START TO SPRING...AND NEAR NORMAL TEMPERATURES IN
APRIL...VERY WARM AIR TEMPERATURES RETURNED TO WESTERN NEW YORK IN
MAY. IT WAS ALSO A DRY MONTH WITH MEANINGFUL RAINFALL FALLING ON TWO
OCCASIONS THROUGH THE MONTH.

ABUNDANT SUNNY DAYS...A DRYING GROUND AND A MEAN SOUTHWESTERLY FLOW
LED TO THE 5TH WARMEST MAY ON RECORD. THE MEAN TEMPERATURES THIS
MONTH WAS 62.6F DEGREES WHICH IS 5.7F DEGREES ABOVE NORMAL. THERE
WERE TWO RECORD HIGH TEMPERATURES SET THIS MONTH...FALLING
CONSECUTIVELY ON THE 8TH AND 9TH WITH READINGS OF 88F AND 89F
RESPECTIVELY. THERE WERE ALSO TWO RECORD WARM MINIMUM
TEMPERATURES...ALSO FALLING CONSECUTIVELY ON THE 10TH AND 11TH WITH
READINGS OF 67F AND 64F DEGREES RESPECTIVELY. THE 5 CONSECUTIVE DAYS
WITHIN THE 80S FROM THE 7TH THROUGH THE 11TH WAS THE EARLIEST
STRETCH OF 5 DAYS WITHIN THE 80S FOR BUFFALO.

PRECIPITATION THIS MONTH TOTALED 3.50 INCHES WHICH IS A SHADE ABOVE
NORMAL. THOUGH MAY`S PRECIPITATION FINISHED NEAR NORMAL...ALMOST THE
ENTIRE MONTH WAS DRY AS MOST OF THE RAIN THIS MONTH FELL OVER TWO
```

OCCASIONS THE 10-11TH (0.59") AND THE LAST 26 HOURS OF THE MONTH (2.67"). THE 2.44 INCHES OF RAIN THAT FELL ON THE LAST DAY OF THE MONTH SET A NEW RECORD FOR THE DATE. THE OLD RECORD WAS 1.30 INCHES SET BACK IN 1889. THIS DAILY EVENT WAS ALSO THE SECOND GREATEST CALENDAR RAINFALL EVENT IN THE MONTH OF MAY...TRAILING ONLY THE 3.41 INCHES THAT FELL MAY 19TH 1986.

MANY OF MAY`S DAILY TEMPERATURES WERE ABOVE NORMAL WITH 23 DAYS AVERAGING ABOVE NORMAL COMPARED TO 8 DAYS AT OR BELOW NORMAL. THESE WARM TEMPERATURES IN CONJUNCTION WITH ALL THE SUNSHINE AND LACK OF RAIN MADE THIS MONTH A VERY PLEASANT MONTH. THERE WERE TWO NOTABLE WEATHER FEATURES THIS MONTH. THE FIRST WAS A LATE FROST/FREEZE ACROSS WESTERN NEW YORK ON THE MORNING OF THE 23RD. FOLLOWING A COOL AND CLOUDY DAY IN THE LOW 60S...SKIES CLEARED WITH EXCELLENT RADIATIONAL COOLING CONDITIONS. TEMPERATURES DROPPED TO 34F DEGREES SATURDAY MORNING THE 23RD WITH WIDESPREAD FROST ACROSS METRO BUFFALO AND FREEZE CONDITIONS TO AREAS WELL SOUTH OF BUFFALO. ONLY 5 OTHER SPRINGS HAVE HAD A TEMPERATURE OF 34F OR COLDER LATER IN THE SEASON.

VEGETATION SPRUNG FORTH IN THE WARM MONTH OF MAY...BUT PROLONGED DRY STRETCHES AND SUNNY DAYS EVENTUALLY STARTED TO DRY THE LOW BRUSH AND GRASSES. THIS DRY PATTERN ENDED ON THE LAST DAY OF THE MONTH WHEN A MOISTURE LADEN SLOW MOVING COLD FRONT MOVED THROUGH THE REGION WITH SIGNIFICANT RAINFALL. SEVERAL WAVES ALONG THIS COLD FRONT BROUGHT OVER TWO INCHES OF RAINFALL THE LAST DAY AND A HALF TO WESTERN NEW YORK...A RAINFALL EVENT THAT WAS WELCOMED EVEN THOUGH THE RAIN FELL ON A WEEKEND. THIS EVENT PRODUCED NO SIGNIFICANT FLOODING AS ANTECEDENT DRY CONDITIONS ALLOWED THE GROUND TO ABSORB A PORTION OF THE RAIN THAT FELL...WITH REMAINING RUNOFF CONTAINED WITHIN ALL CREEKS AND RIVERS.

WINDS WERE PREDOMINATELY SOUTHWEST THIS MONTH AND TAME WITH THE STRONGEST GUST JUST 41 MPH. LAKE ERIE`S WATER TEMPERATURE ROSE FROM 39F AT MONTHS START TO 60F BY THE END OF THE MONTH.

IN ALL A PLEASANT SPRING MONTH FOR WESTERN NEW YORK.

SPRING STATS...

SPRING STARTED COOL...WITH AIR TEMPERATURES IN MARCH WELL BELOW NORMAL. AFTER A NEAR NORMAL MONTH IN APRIL TEMPERATURE-WISE THE MONTH OF MAY BROUGHT SUMMER LIKE WARMTH ACROSS WESTERN NEW YORK. IT WAS A DRY SPRING...WITH THE MONTH OF MARCH THE DRIEST OF THE THREE MONTHS. THE TOTAL PRECIPITATION THIS SPRING WAS CONTRARY TO THE PRIOR TWO SPRINGS...WHICH FINISHED WITH ABOVE NORMAL PRECIPITATION. HERE ARE SOME SPRING STATS FOR METEOROLOGICAL SPRING WHICH IS DEFINED AS THE MONTHS OF MARCH...APRIL AND MAY.

TEMPERATURE..... 45.9F (+0.3)
PRECIPITATION..... 7.64" (-1.70")
SNOW..... 9.9" (-6.0")

&&

THOMAS

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

Climatological Report (Monthly)

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CXUS51 KBUF 050433
CLMBUF

CLIMATE REPORT
NATIONAL WEATHER SERVICE BUFFALO NY
149 PM EDT THU JUL 2 2015

.................................

...THE BUFFALO NY CLIMATE SUMMARY FOR THE MONTH OF JUNE 2015...

CLIMATE NORMAL PERIOD 1981 TO 2010
CLIMATE RECORD PERIOD 1871 TO 2015

WEATHER         OBSERVED          NORMAL  DEPART  LAST YEAR`S
                 VALUE   DATE(S)  VALUE   FROM    VALUE  DATE(S)
                                          NORMAL
.............................................................
TEMPERATURE (F)
RECORD
 HIGH              97   06/29/1933
 LOW               36   06/11/1972
HIGHEST            84   06/12                        89  06/28
LOWEST             45   06/03                        48  06/06
                        06/01
AVG. MAXIMUM     73.8             75.3    -1.5     78.3
AVG. MINIMUM     57.4             57.3     0.1     59.2
MEAN             65.6             66.3    -0.7     68.8
DAYS MAX >= 90      0              0.5    -0.5        0
DAYS MAX <= 32      0              0.0     0.0        0
DAYS MIN <= 32      0              0.0     0.0        0
DAYS MIN <= 0       0              0.0     0.0        0

PRECIPITATION (INCHES)
RECORD
 MAXIMUM         9.67   1928
 MINIMUM         0.11   1955
TOTALS           5.03             3.66    1.37     3.80
DAYS >= .01        16                               10
DAYS >= .10         9                                8
DAYS >= .50         4                                3
DAYS >= 1.00        1                                1
GREATEST
 24 HR. TOTAL    1.78   06/27 TO 06/28

SNOWFALL (INCHES)
RECORDS
 TOTAL             MM   MM
TOTALS            0.0              0.0     0.0      0.0
SINCE 7/1       112.9              94.7    18.2
SNOWDEPTH AVG.      0               MM      MM        0
```

```
DAYS >= 1.0          0               0.0     0.0        0
GREATEST
 SNOW DEPTH          0   MM                             0  MM
 24 HR TOTAL       0.0

DEGREE_DAYS
HEATING TOTAL       50               64     -14       28
 SINCE 7/1        7028             6617     411     7125
COOLING TOTAL       76              103     -27      148
 SINCE 1/1         167              129      38      171
.................................................

WIND (MPH)
AVERAGE WIND SPEED              9.2
HIGHEST WIND SPEED/DIRECTION    33/280
HIGHEST GUST SPEED/DIRECTION    47/280    DATE  06/12

SKY COVER
POSSIBLE SUNSHINE (PERCENT)   MM
NUMBER OF DAYS FAIR            2
NUMBER OF DAYS PC             13
NUMBER OF DAYS CLOUDY         15

AVERAGE RH (PERCENT)     72

WEATHER CONDITIONS. NUMBER OF DAYS WITH
THUNDERSTORM               7     MIXED PRECIP               0
HEAVY RAIN                 5     RAIN                       8
LIGHT RAIN                19     FREEZING RAIN              0
LT FREEZING RAIN           0     HAIL                       0
HEAVY SNOW                 0     SNOW                       0
LIGHT SNOW                 0     SLEET                      0
FOG                       18     FOG W/VIS <= 1/4 MILE      3
HAZE                       5

-  INDICATES NEGATIVE NUMBERS.
R  INDICATES RECORD WAS SET OR TIED.
MM INDICATES DATA IS MISSING.
T  INDICATES TRACE AMOUNT.

&&

...A WET JUNE LACKING ANY PROLONGED HEAT...

ON THE HEELS OF A SOAKING END TO MAY...THE MONTH OF JUNE CONTINUED
THE ROUNDS OF SHOWERS AND THUNDERSTORMS. OVER HALF THE DAYS
CONTAINED MEASURABLE RAINFALL...AND THIS RAINFALL WAS SPREAD EVENLY
THROUGHOUT THE MONTH. THE MAJORITY OF WESTERN NEW YORK FINISHED AN
INCH OR MORE ABOVE NORMAL JUNE PRECIPITATION. ALONG WITH THIS
RAIN...DAYS WERE CLOUDIER THAN NORMAL AND AIR TEMPERATURES FINISHED
THE MONTH SLIGHTLY BELOW NORMAL.

THE AVERAGE TEMPERATURE FOR JUNE FINISHED AT 65.6F DEGREES WHICH IS
0.7 DEGREES BELOW NORMAL. THE WARMEST TEMPERATURE IN JUNE WAS A MERE
84F DEGREES ON THE 12TH. THERE WERE ONLY FIVE DAYS THAT REACHED THE
80S...AND THIS TOTAL WAS THE 7TH FEWEST AMOUNT OF DAYS SINCE
OBSERVING RECORDS MOVED TO THE AIRPORT IN 1943. ON THE 28TH THE
TEMPERATURE REACHED A HIGH OF ONLY 61F...WHICH WAS THE COOLEST
MAXIMUM TEMPERATURE FOR THE DATE...BREAKING A RECORD OF 63F SET BACK
IN 2004.

PRECIPITATION TOPPED FIVE INCHES FOR THE 18TH JUNE IN RECORDED
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HISTORY (RECORDS START 1871). THE 5.03 INCHES WAS AN INCH AND A THIRD ABOVE NORMAL AND CAME ON 16 DAYS OF MEASURABLE PRECIPITATION. OF THE PAST SIX JUNES...THREE HAVE HAD OVER FIVE INCHES OF RAINFALL. THERE WAS ONE RECORD RAINFALL EVENT...WITH THE 1.72 INCHES ON THE 27TH BREAKING THE OLD RECORD OF 1.29 INCHES SET BACK IN 2006. THERE WERE FOUR DAYS THAT RECEIVED A HALF AN INCH OR MORE OF RAINFALL...TWICE THE TYPICAL AMOUNT OF TWO DAYS. EVERY SUNDAY THIS MONTH RECORDED MEASURABLE RAINFALL.

THE RECORD SOAKING RAINFALL OF LATE MAY...THAT ENDED IN THE WEE HOURS OF JUNE WAS JUST A SIGN OF THE PATTERN FOR THE MONTH OF JUNE. A MEAN LONGWAVE TROUGH REMAINED OVER THE GREAT LAKES REGION THIS MONTH...A TROUGH THAT FAVORED STORM DEVELOPMENT OVER THE EASTERN GREAT LAKES REGION. SEVERAL STORM SYSTEMS PRODUCED MODERATE TO HEAVY RAINFALL THROUGH THE MONTH. THE FIRST SIGNIFICANT STORM SYSTEM CAME THROUGH WESTERN NEW YORK ON THE 8TH AND 9TH OF THE MONTH...SPREADING A HALF TO ONE INCH OF RAINFALL...AND ALSO GUSTY THUNDERSTORM WINDS ON THE MORNING OF THE 9TH. MORE WIDESPREAD SEVERE THUNDERSTORMS DROPPED ACROSS THE REGION ON THE 11TH...WITH BOTH THE HEAVIER RAINFALL AND DAMAGE FOUND EAST OF BUFFALO ACROSS THE GENESEE VALLEY AND FINGER LAKES REGION. A BRIEF TORNADO SPUN UP JUST NORTH OF CANANDAIGUA DURING THE LATE EVENING HOURS OF THE 11TH. THE NEXT SYSTEM OF NOTE CAME SEVERAL DAYS LATER WHEN ANOTHER WARM FRONT AND HUMID AIRMASS EDGED INTO WESTERN NEW YORK THROUGH THE EARLY MORNING HOURS OF SUNDAY THE 14TH. ONE SLOW MOVING THUNDERSTORM PRODUCE FLASH FLOODING ACROSS WARSAW IN WYOMING COUNTY LATE SUNDAY AFTERNOON. ADDITIONAL SHOWERS AND DRENCHING THUNDERSTORMS PASSED ACROSS WESTERN NEW YORK LATER SUNDAY NIGHT. ANOTHER COLD FRONT CROSSED THE REGION ON THE 23RD WITH EARLY MORNING HEAVY RAIN SHOWERS AND A FEW SEVERE THUNDERSTORMS DOWNING TREES ACROSS WESTERN NEW YORK. LASTLY ANOTHER SYNOPTIC STORM SYSTEM ROSE NORTHWARD FROM THE SOUTH WITH A LENGTHY PERIOD OF HEAVY RAIN SHOWERS ON THE 27TH-28TH. THIS WEEKEND SOAKING RAINFALL BROUGHT SEVERAL INCHES OF RAIN TO WESTERN NEW YORK AND RUINED MANY OUTDOOR PLANS.

LAKE ERIE`S WATER TEMPERATURE RANGED FROM 55F DEGREES AT MONTH`S BEGINNING TO 65F DEGREES ON THE 26TH. WIND SPEED AVERAGED 9.2 MPH WHICH IS NEAR THE NORMAL OF 9.3 MPH.

IN ALL A COOL...AND VERY WET START TO SUMMER.

&&

THOMAS

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - http://www.ncdc.noaa.gov.

Climatological Report (Monthly)

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CLMBUF

CLIMATE REPORT
NATIONAL WEATHER SERVICE BUFFALO NY
745 AM EDT SAT AUG 1 2015

.....................................

...THE BUFFALO NY CLIMATE SUMMARY FOR THE MONTH OF JULY 2015...

CLIMATE NORMAL PERIOD 1981 TO 2010
CLIMATE RECORD PERIOD 1871 TO 2015
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WEATHER	OBSERVED VALUE	OBSERVED DATE(S)	NORMAL VALUE	DEPART FROM NORMAL	LAST YEAR`S VALUE	LAST YEAR`S DATE(S)
TEMPERATURE (F)						
RECORD						
HIGH	97	07/15/1995 07/06/1988				
LOW	43	07/11/1945				
HIGHEST	91	07/29			86	07/01
LOWEST	50	07/03			52	07/05
AVG. MAXIMUM	79.9		79.9	0.0	76.5	
AVG. MINIMUM	62.0		62.3	-0.3	60.6	
MEAN	71.0		71.1	-0.1	68.6	
DAYS MAX >= 90	1		1.1	-0.1	0	
DAYS MAX <= 32	0		0.0	0.0	0	
DAYS MIN <= 32	0		0.0	0.0	0	
DAYS MIN <= 0	0		0.0	0.0	0	
PRECIPITATION (INCHES)						
RECORD						
MAXIMUM	8.93	1992				
MINIMUM	0.15	1933				
TOTALS	2.42		3.23	-0.81	5.45	
DAYS >= .01	10				14	
DAYS >= .10	6				9	
DAYS >= .50	1				5	
DAYS >= 1.00	0				1	
GREATEST						
24 HR. TOTAL	0.65	07/14 TO 07/14				
SNOWFALL (INCHES)						
RECORDS						
TOTAL	MM	MM				
TOTALS	0.0		0.0	0.0	0.0	
SINCE 7/1	0.0		0.0	0.0		
SNOWDEPTH AVG.	0		MM	MM	0	

DAYS >= 1.0	0		0.0	0.0	0
GREATEST					
SNOW DEPTH	0	MM			0 MM
24 HR TOTAL	0.0	MM			
DEGREE_DAYS					
HEATING TOTAL	7		9	-2	10
SINCE 7/1	7		9	-2	10
COOLING TOTAL	198		197	1	130
SINCE 1/1	365		326	39	301

.....

WIND (MPH)			
AVERAGE WIND SPEED	7.8		
HIGHEST WIND SPEED/DIRECTION	29/240		
HIGHEST GUST SPEED/DIRECTION	38/250	DATE	07/07

SKY COVER			
POSSIBLE SUNSHINE (PERCENT)	MM		
NUMBER OF DAYS FAIR	7		
NUMBER OF DAYS PC	18		
NUMBER OF DAYS CLOUDY	6		
AVERAGE RH (PERCENT)	66		

WEATHER CONDITIONS. NUMBER OF DAYS WITH			
THUNDERSTORM	5	MIXED PRECIP	0
HEAVY RAIN	4	RAIN	6
LIGHT RAIN	13	FREEZING RAIN	0
LT FREEZING RAIN	0	HAIL	0
HEAVY SNOW	0	SNOW	0
LIGHT SNOW	0	SLEET	0
FOG	14	FOG W/VIS <= 1/4 MILE	0
HAZE	6		

- INDICATES NEGATIVE NUMBERS.
R INDICATES RECORD WAS SET OR TIED.
MM INDICATES DATA IS MISSING.
T INDICATES TRACE AMOUNT.

&&

...COMFORTABLE MONTH OF JULY...

JULY CONTINUED THE SWINGS OF ABOVE TO BELOW NORMAL TEMPERATURES THROUGH THE MONTH...ENDING WITH A MORE TYPICAL PATTERN REGIME OF HEAT THE LAST FEW DAYS OF THE MONTH. HEAVY RAINS FROM THUNDERSTORMS GENERALLY REMAINED SOUTH OF THE BUFFALO METRO AREA THROUGH THE MONTH.

THE AVERAGE TEMPERATURE FOR JULY WAS 71.0F DEGREES WHICH IS JUST A TENTH OF A DEGREE BELOW NORMAL. NO SINGLE WEATHER PATTERN WAS ABLE TO BE ESTABLISHED OVER THE REGION THIS MONTH...WITH THE LONGEST STRETCH OF ABOVE OR BELOW NORMAL TEMPERATURES BEING JUST 7 DAYS. IN TOTAL THERE WERE 16 DAYS ABOVE NORMAL...AND 15 DAYS BELOW NORMAL. THE WARMEST DAY THIS MONTH WAS A 91 DEGREE READING ON THE 29TH WHICH WAS THE FIRST 90 DEGREE READING FOR BUFFALO SINCE JULY 16TH 2013. OUTSIDE OF THIS TEMPERATURE READING...THE MONTH GENERALLY FINISHED NEAR NORMAL WITH 18 OF THE 31 DAYS FINISHING WITHIN 5 DEGREES OF NORMAL. THERE WERE 17 DAYS THAT REACHED 80F OR GREATER WHICH IS 3 MORE THAN NORMAL.

PRECIPITATION FINISHED BELOW NORMAL FOR THE MONTH WITH THE 2.42
INCHES OF RAIN EIGHT TENTHS OF AN INCH BELOW NORMAL. THREE-QUARTERS
OF THE RAINFALL THIS MONTH FELL WITHIN THE FIRST TWO WEEKS OF THE
MONTH. THE SECOND HALF OF JULY FEATURED JUST FIVE DAYS WITH
MEASURABLE RAINFALL...WITH ALL FIVE DAYS MEASURING LESS THAN A
QUARTER OF AN INCH.

JULY STARTED PLEASANT ACROSS WESTERN NEW YORK. AFTER A FEW SCATTERED
SHOWERS ON THE 1ST...SUNSHINE AND COMFORTABLE HUMIDITY LEVELS
RETURNED WITH THE FINE WEATHER CONDITIONS PREVAILING RIGHT THROUGH
THE HOLIDAY WEEKEND. A WARM FRONT THEN LIFTED ACROSS THE REGION ON
THE 6TH AND 7TH BRINGING AN INCREASE IN HUMIDITY ALONG WITH
SCATTERED SHOWERS AND THUNDERSTORMS. FORMING ON LAKE BREEZE
BOUNDARIES A FEW THUNDERSTORMS BECAME STRONG DURING THE AFTERNOON
HOURS OF THE 7TH...WITH ISOLATED TREE DAMAGE SOUTHEAST OF BUFFALO.
MORE SIGNIFICANT THUNDERSTORMS ROLLED THROUGH WESTERN NEW YORK ON
THE 14TH WITH THE STORMS PRODUCING FLOODING RAINS ACROSS THE
SOUTHERN TIER IN ADDITION TO DOWNING SEVERAL TREES. WHILE OVER A
HALF INCH OF RAIN FELL ACROSS THE BUFFALO METRO AREA...THE IMMEDIATE
REGION DID ESCAPE THE WORST OF THE DAMAGING RAINS WHICH STAYED JUST
TO THE SOUTH OF THE AREA. DEWPOINTS SOARED TO OVER 70F ON THE 18TH
MAKING FOR A STICKY START TO THE WEEKEND. A STRONG LAKE BREEZE BLEW
ACROSS THE REGION ON THE 19TH...BRINGING SOME RELIEF TO THE HUMIDITY
AND FENDING OFF APPROACHING THUNDERSTORMS FROM THE WEST. AFTER A
BRIEF COOL SPELL FROM THE 22ND TO THE 24TH...THE WARMEST AIRMASS OF
THE SUMMER SEASON REACHED WESTERN NEW YORK. TEMPERATURES ON THE 26TH
THROUGH 28TH CLIMBED INTO THE UPPER 80S...WITH A PEAK OF 91F ON THE
29TH. A COOL FRONT CROSSED WESTERN NEW YORK ON THE MORNING HOURS OF
THE 30TH WITH JUST A FEW SHOWERS.

WINDS WERE BELOW NORMAL THIS MONTH...AVERAGING 7.8 MPH WHICH IS 1.2
MILES PER HOUR BELOW NORMAL. THE STRONGEST WIND GUST OF 38 MPH CAME
ON THE 6TH WITHIN A THUNDERSTORM. LAKE ERIE ROSE FROM 64 DEGREES AT
MONTHS BEGINNING TO 75 DEGREES BY MONTHS END.

IN ALL A COMFORTABLE MONTH...WITH LIMITED EXTREME HEAT AND HUMIDITY.

&&

THOMAS

Appendix D:
TestAmerica Analytical Results

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-83779-1
Client Project/Site: NYSDEC- Spill# 1503836

For:
New York State D.E.C.
270 Michigan Avenue
Buffalo, New York 14203

Attn: Sal Calandra

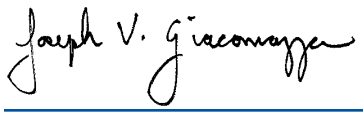
Joseph V. Giacomazza

Authorized for release by:
7/16/2015 4:45:50 PM
Joe Giacomazza, Project Management Assistant II
joe.giacomazza@testamericainc.com

Designee for

Brian Fischer, Manager of Project Management
(716)504-9835
brian.fischer@testamericainc.com

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.



Joe Giacomazza
Project Management Assistant II
7/16/2015 4:45:50 PM

Table of Contents

Definitions/Glossary

Client: New York State D.E.C.
Project/Site: NYSDEC- Spill# 1503836

TestAmerica Job ID: 480-83779-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
*	LCS or LCSD is outside acceptance limits.

GC Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
X	Surrogate is outside control limits
*	RPD of the LCS and LCSD exceeds the control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 480-83779-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-83779-1

Receipt
The sample was received on 7/13/2015 2:50 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 16.5º C.

GC/MS VOA
Method(s) 8260C: The laboratory control sample (LCS) for 480-253504 recovered outside control limits for the following analytes: 1,3-Dichlorobenzene, 1,2-Dichloropropane, 1,4-Dichlorobenzene, cis-1,3-Dichloropropene, Isopropylbenzene.These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported. The following sample is impacted: BOT GARDEN TAR (480-83779-1)

Method(s) 8260C: The following sample was analyzed using medium level soil analysis to bring the concentration of target analytes within the calibration range: BOT GARDEN TAR (480-83779-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D: The following samples were diluted due to appearance and viscosity: BOT GARDEN TAR (480-83779-1). As such, surrogate recoveries are not reported, and elevated reporting limits (RLs) are provided.

Method(s) 8270D: The continuing calibration verification (CCV) analyzed in batch 480-253291 was outside the method criteria for the following analytes: 4-Nitroaniline and Benzo[g,h,i]perylene. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.

Method(s) 8270D: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 480-253202 and analytical batch 480-253291 recovered outside control limits for the following analyte: 4-Methylphenol. This analyte was biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method(s) 8081B: The laboratory control sample (LCS) and sample duplicate (LCSD) for 253555 recovered outside control limits for several analytes: <AffectedAnalytes>. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method(s) 8081B: The following samples were diluted due to the extraction color and the nature of the sample matrix: BOT GARDEN TAR (480-83779-1). As such, surrogate recoveries are below the calibration range or are not reported, and elevated reporting limits (RLs) are provided.

Method(s) 8081B: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 480-253203 recovered outside control limits for the following analyte: Methoxychlor.

Method(s) 8082A: The following sample was diluted due to the nature of the sample matrix: BOT GARDEN TAR (480-83779-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method(s) 6010C: The following sample was diluted for Total Cobalt due to the nature of the sample matrix: BOT GARDEN TAR (480-83779-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 480-83779-1 (Continued)

Laboratory: TestAmerica Buffalo (Continued)

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method(s) 3580A: The following sample required a Florisil clean-up, via EPA Method 3620C, to reduce matrix interferences: BOT GARDEN TAR (480-83779-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: New York State D.E.C.
Project/Site: NYSDEC- Spill# 1503836

TestAmerica Job ID: 480-83779-1

Client Sample ID: BOT GARDEN TAR

Lab Sample ID: 480-83779-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl acetate	200000		1000	480	ug/Kg	10		8260C	Total/NA
Methylene Chloride	810	J	1000	200	ug/Kg	10		8260C	Total/NA
Tetrachloroethene	3200		1000	130	ug/Kg	10		8260C	Total/NA
gamma-Chlordane	1.4	J	5.9	0.81	mg/Kg	20		8081B	Total/NA
PCB-1248	22		4.2	4.2	mg/Kg	2		8082A	Total/NA
PCB-1254	8.3		4.2	4.2	mg/Kg	2		8082A	Total/NA
PCB-1260	5.3		4.2	4.2	mg/Kg	2		8082A	Total/NA
Aluminum	158		9.4	4.1	mg/Kg	1		6010C	Total/NA
Antimony	0.46	J	14.1	0.38	mg/Kg	1		6010C	Total/NA
Arsenic	1.6	J	1.9	0.38	mg/Kg	1		6010C	Total/NA
Barium	6940		4.7	1.0	mg/Kg	10		6010C	Total/NA
Cadmium	4.8		0.19	0.028	mg/Kg	1		6010C	Total/NA
Calcium	1300	B	47.0	3.1	mg/Kg	1		6010C	Total/NA
Chromium	25.3		0.47	0.19	mg/Kg	1		6010C	Total/NA
Copper	111		0.94	0.20	mg/Kg	1		6010C	Total/NA
Iron	1090		9.4	3.3	mg/Kg	1		6010C	Total/NA
Lead	26200		9.4	2.3	mg/Kg	10		6010C	Total/NA
Magnesium	66.0		18.8	0.87	mg/Kg	1		6010C	Total/NA
Manganese	12.0	B	0.19	0.030	mg/Kg	1		6010C	Total/NA
Nickel	6.0		4.7	0.22	mg/Kg	1		6010C	Total/NA
Potassium	61.4		28.2	18.8	mg/Kg	1		6010C	Total/NA
Silver	0.21	J	0.56	0.19	mg/Kg	1		6010C	Total/NA
Sodium	446		131	12.2	mg/Kg	1		6010C	Total/NA
Vanadium	1.1		0.47	0.10	mg/Kg	1		6010C	Total/NA
Zinc	914		1.9	0.60	mg/Kg	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client: New York State D.E.C.
Project/Site: NYSDEC- Spill# 1503836

TestAmerica Job ID: 480-83779-1

Client Sample ID: BOT GARDEN TAR
Date Collected: 07/13/15 14:15
Date Received: 07/13/15 14:50

Lab Sample ID: 480-83779-1
Matrix: Waste

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1000	280	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
1,1,2,2-Tetrachloroethane	ND		1000	160	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
1,1,2-Trichloroethane	ND		1000	210	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1000	500	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
1,1-Dichloroethane	ND		1000	310	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
1,1-Dichloroethene	ND		1000	350	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
1,2,4-Trichlorobenzene	ND		1000	380	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
1,2-Dibromo-3-Chloropropane	ND		1000	500	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
1,2-Dichlorobenzene	ND		1000	250	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
1,2-Dichloroethane	ND		1000	410	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
1,2-Dichloropropane	ND	*	1000	160	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
1,3-Dichlorobenzene	ND	*	1000	270	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
1,4-Dichlorobenzene	ND	*	1000	140	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
2-Butanone (MEK)	ND		5000	3000	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
2-Hexanone	ND		5000	2000	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
4-Methyl-2-pentanone (MIBK)	ND		5000	320	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Acetone	ND		5000	4100	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Benzene	ND		1000	190	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Bromodichloromethane	ND		1000	200	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Bromoform	ND		1000	500	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Bromomethane	ND		1000	220	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Carbon disulfide	ND		1000	450	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Carbon tetrachloride	ND		1000	250	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Chlorobenzene	ND		1000	130	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Dibromochloromethane	ND		1000	480	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Chloroethane	ND		1000	210	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Chloroform	ND		1000	680	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Chloromethane	ND		1000	240	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
cis-1,2-Dichloroethene	ND		1000	280	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
cis-1,3-Dichloropropene	ND	*	1000	240	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Cyclohexane	ND		1000	220	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Dichlorodifluoromethane	ND		1000	440	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Ethylbenzene	ND		1000	290	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
1,2-Dibromoethane	ND		1000	170	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Isopropylbenzene	ND	*	1000	150	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Methyl acetate	**200000**		1000	480	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Methyl tert-butyl ether	ND		1000	380	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Methylcyclohexane	ND		1000	470	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Methylene Chloride	**810**	**J**	1000	200	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Styrene	ND		1000	240	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Tetrachloroethene	**3200**		1000	130	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Toluene	ND		1000	270	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
trans-1,2-Dichloroethene	ND		1000	240	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
trans-1,3-Dichloropropene	ND		1000	98	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Trichloroethene	ND		1000	280	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Trichlorofluoromethane	ND		1000	470	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Vinyl chloride	ND		1000	330	ug/Kg		07/15/15 18:34	07/16/15 13:40	10
Xylenes, Total	ND		2000	550	ug/Kg		07/15/15 18:34	07/16/15 13:40	10

Client Sample ID: BOT GARDEN TAR

Date Collected: 07/13/15 14:15
Date Received: 07/13/15 14:50

Lab Sample ID: 480-83779-1

Matrix: Waste

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*101*		*50 - 149*	*07/15/15 18:34*	*07/16/15 13:40*	*10*
1,2-Dichloroethane-d4 (Surr)	*100*		*53 - 146*	*07/15/15 18:34*	*07/16/15 13:40*	*10*
4-Bromofluorobenzene (Surr)	*99*		*49 - 148*	*07/15/15 18:34*	*07/16/15 13:40*	*10*
Dibromofluoromethane (Surr)	*100*		*60 - 140*	*07/15/15 18:34*	*07/16/15 13:40*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-Trichlorophenol	ND		210000	46000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
2,4,6-Trichlorophenol	ND		210000	14000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
2,4-Dichlorophenol	ND		210000	11000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
2,4-Dimethylphenol	ND		210000	58000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
2,4-Dinitrophenol	ND		410000	74000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
2,4-Dinitrotoluene	ND		210000	33000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
2,6-Dinitrotoluene	ND		210000	51000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
2-Chloronaphthalene	ND		210000	14000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
2-Chlorophenol	ND		210000	11000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
2-Methylnaphthalene	ND		210000	2500	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
2-Methylphenol	ND		210000	6500	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
2-Nitroaniline	ND		410000	68000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
2-Nitrophenol	ND		210000	9600	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
3,3'-Dichlorobenzidine	ND		210000	190000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
3-Nitroaniline	ND		410000	49000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
4,6-Dinitro-2-methylphenol	ND		410000	73000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
4-Bromophenyl phenyl ether	ND		210000	68000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
4-Chloro-3-methylphenol	ND		210000	8600	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
4-Chloroaniline	ND		210000	63000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
4-Chlorophenyl phenyl ether	ND		210000	4500	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
4-Methylphenol	ND	*	410000	12000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
4-Nitroaniline	ND		410000	24000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
4-Nitrophenol	ND		410000	51000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Acenaphthene	ND		210000	2500	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Acenaphthylene	ND		210000	1800	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Acetophenone	ND		210000	11000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Anthracene	ND		210000	5400	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Atrazine	ND		210000	9400	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Benzaldehyde	ND		210000	24000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Benzo[a]anthracene	ND		210000	3600	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Benzo[a]pyrene	ND		210000	5100	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Benzo[b]fluoranthene	ND		210000	4100	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Benzo[g,h,i]perylene	ND		210000	2500	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Benzo[k]fluoranthene	ND		210000	2400	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Biphenyl	ND		210000	14000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
bis (2-chloroisopropyl) ether	ND		210000	23000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Bis(2-chloroethoxy)methane	ND		210000	12000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Bis(2-chloroethyl)ether	ND		210000	19000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Bis(2-ethylhexyl) phthalate	ND		210000	68000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Butyl benzyl phthalate	ND		210000	56000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Caprolactam	ND		210000	91000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Carbazole	ND		210000	2500	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Chrysene	ND		210000	2100	ug/Kg		07/14/15 15:27	07/15/15 10:56	100

Client Sample ID: BOT GARDEN TAR

Date Collected: 07/13/15 14:15
Date Received: 07/13/15 14:50

Lab Sample ID: 480-83779-1

Matrix: Waste

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	ND		210000	2500	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Dibenzofuran	ND		210000	2300	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Diethyl phthalate	ND		210000	6400	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Dimethyl phthalate	ND		210000	5500	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Di-n-butyl phthalate	ND		210000	73000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Di-n-octyl phthalate	ND		210000	4900	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Fluoranthene	ND		210000	3000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Fluorene	ND		210000	4900	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Hexachlorobenzene	ND		210000	11000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Hexachlorobutadiene	ND		210000	11000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Hexachlorocyclopentadiene	ND		210000	64000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Hexachloroethane	ND		210000	16000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Indeno[1,2,3-cd]pyrene	ND		210000	5900	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Isophorone	ND		210000	11000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Naphthalene	ND		210000	3500	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Nitrobenzene	ND		210000	9400	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
N-Nitrosodi-n-propylamine	ND		210000	16000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
N-Nitrosodiphenylamine	ND		210000	12000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Pentachlorophenol	ND		410000	73000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Phenanthrene	ND		210000	4400	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Phenol	ND		210000	23000	ug/Kg		07/14/15 15:27	07/15/15 10:56	100
Pyrene	ND		210000	1400	ug/Kg		07/14/15 15:27	07/15/15 10:56	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*0*	*X*	*39 - 146*	*07/14/15 15:27*	*07/15/15 10:56*	*100*
2-Fluorobiphenyl	*0*	*X*	*37 - 120*	*07/14/15 15:27*	*07/15/15 10:56*	*100*
2-Fluorophenol (Surr)	*0*	*X*	*18 - 120*	*07/14/15 15:27*	*07/15/15 10:56*	*100*
Nitrobenzene-d5 (Surr)	*0*	*X*	*34 - 132*	*07/14/15 15:27*	*07/15/15 10:56*	*100*
Phenol-d5 (Surr)	*0*	*X*	*11 - 120*	*07/14/15 15:27*	*07/15/15 10:56*	*100*
p-Terphenyl-d14 (Surr)	*0*	*X*	*65 - 153*	*07/14/15 15:27*	*07/15/15 10:56*	*100*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND	*	5.9	1.1	mg/Kg		07/14/15 15:29	07/16/15 07:54	20
4,4'-DDE	ND		5.9	1.6	mg/Kg		07/14/15 15:29	07/16/15 07:54	20
4,4'-DDT	ND		5.9	1.3	mg/Kg		07/14/15 15:29	07/16/15 07:54	20
Aldrin	ND		5.9	0.60	mg/Kg		07/14/15 15:29	07/16/15 07:54	20
alpha-BHC	ND	*	5.9	1.1	mg/Kg		07/14/15 15:29	07/16/15 07:54	20
alpha-Chlordane	ND		5.9	2.9	mg/Kg		07/14/15 15:29	07/16/15 07:54	20
beta-BHC	ND	*	5.9	4.2	mg/Kg		07/14/15 15:29	07/16/15 07:54	20
delta-BHC	ND	*	5.9	0.78	mg/Kg		07/14/15 15:29	07/16/15 07:54	20
Dieldrin	ND		5.9	1.4	mg/Kg		07/14/15 15:29	07/16/15 07:54	20
Endosulfan I	ND		5.9	1.2	mg/Kg		07/14/15 15:29	07/16/15 07:54	20
Endosulfan II	ND	*	5.9	1.1	mg/Kg		07/14/15 15:29	07/16/15 07:54	20
Endosulfan sulfate	ND	*	5.9	1.1	mg/Kg		07/14/15 15:29	07/16/15 07:54	20
Endrin	ND		5.9	1.9	mg/Kg		07/14/15 15:29	07/16/15 07:54	20
Endrin aldehyde	ND	*	5.9	1.5	mg/Kg		07/14/15 15:29	07/16/15 07:54	20
Endrin ketone	ND	*	5.9	1.4	mg/Kg		07/14/15 15:29	07/16/15 07:54	20
gamma-BHC (Lindane)	ND	*	5.9	4.2	mg/Kg		07/14/15 15:29	07/16/15 07:54	20
gamma-Chlordane	**1.4**	**J**	5.9	0.81	mg/Kg		07/14/15 15:29	07/16/15 07:54	20

Client Sample ID: BOT GARDEN TAR

Date Collected: 07/13/15 14:15
Date Received: 07/13/15 14:50

Lab Sample ID: 480-83779-1

Matrix: Waste

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	ND		5.9	0.92	mg/Kg		07/14/15 15:29	07/16/15 07:54	20
Heptachlor epoxide	ND		5.9	1.5	mg/Kg		07/14/15 15:29	07/16/15 07:54	20
Methoxychlor	ND	*	5.9	1.5	mg/Kg		07/14/15 15:29	07/16/15 07:54	20
Toxaphene	ND		59	34	mg/Kg		07/14/15 15:29	07/16/15 07:54	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*0*	*X*	*32 - 136*	*07/14/15 15:29*	*07/16/15 07:54*	*20*
Tetrachloro-m-xylene	*166*	*X*	*30 - 124*	*07/14/15 15:29*	*07/16/15 07:54*	*20*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		4.2	4.2	mg/Kg		07/14/15 16:31	07/15/15 22:13	2
PCB-1221	ND		4.2	4.2	mg/Kg		07/14/15 16:31	07/15/15 22:13	2
PCB-1232	ND		4.2	4.2	mg/Kg		07/14/15 16:31	07/15/15 22:13	2
PCB-1242	ND		4.2	4.2	mg/Kg		07/14/15 16:31	07/15/15 22:13	2
PCB-1248	**22**		4.2	4.2	mg/Kg		07/14/15 16:31	07/15/15 22:13	2
PCB-1254	**8.3**		4.2	4.2	mg/Kg		07/14/15 16:31	07/15/15 22:13	2
PCB-1260	**5.3**		4.2	4.2	mg/Kg		07/14/15 16:31	07/15/15 22:13	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*87*		*60 - 154*	*07/14/15 16:31*	*07/15/15 22:13*	*2*
DCB Decachlorobiphenyl	*137*		*65 - 174*	*07/14/15 16:31*	*07/15/15 22:13*	*2*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**158**		9.4	4.1	mg/Kg		07/15/15 11:00	07/16/15 14:31	1
Antimony	**0.46**	**J**	14.1	0.38	mg/Kg		07/15/15 11:00	07/16/15 14:31	1
Arsenic	**1.6**	**J**	1.9	0.38	mg/Kg		07/15/15 11:00	07/16/15 14:31	1
Barium	**6940**		4.7	1.0	mg/Kg		07/15/15 11:00	07/16/15 15:11	10
Beryllium	ND		0.19	0.026	mg/Kg		07/15/15 11:00	07/16/15 14:31	1
Cadmium	**4.8**		0.19	0.028	mg/Kg		07/15/15 11:00	07/16/15 14:31	1
Calcium	**1300**	**B**	47.0	3.1	mg/Kg		07/15/15 11:00	07/16/15 14:31	1
Chromium	**25.3**		0.47	0.19	mg/Kg		07/15/15 11:00	07/16/15 14:31	1
Cobalt	ND		4.7	0.47	mg/Kg		07/15/15 11:00	07/16/15 15:11	10
Copper	**111**		0.94	0.20	mg/Kg		07/15/15 11:00	07/16/15 14:31	1
Iron	**1090**		9.4	3.3	mg/Kg		07/15/15 11:00	07/16/15 14:31	1
Lead	**26200**		9.4	2.3	mg/Kg		07/15/15 11:00	07/16/15 15:11	10
Magnesium	**66.0**		18.8	0.87	mg/Kg		07/15/15 11:00	07/16/15 14:31	1
Manganese	**12.0**	**B**	0.19	0.030	mg/Kg		07/15/15 11:00	07/16/15 14:31	1
Nickel	**6.0**		4.7	0.22	mg/Kg		07/15/15 11:00	07/16/15 14:31	1
Potassium	**61.4**		28.2	18.8	mg/Kg		07/15/15 11:00	07/16/15 14:31	1
Selenium	ND		3.8	0.38	mg/Kg		07/15/15 11:00	07/16/15 14:31	1
Silver	**0.21**	**J**	0.56	0.19	mg/Kg		07/15/15 11:00	07/16/15 14:31	1
Sodium	**446**		131	12.2	mg/Kg		07/15/15 11:00	07/16/15 14:31	1
Thallium	ND		5.6	0.28	mg/Kg		07/15/15 11:00	07/16/15 14:31	1
Vanadium	**1.1**		0.47	0.10	mg/Kg		07/15/15 11:00	07/16/15 14:31	1
Zinc	**914**		1.9	0.60	mg/Kg		07/15/15 11:00	07/16/15 14:31	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020	0.0080	mg/Kg		07/15/15 13:35	07/15/15 15:12	1

Client: New York State D.E.C.
Project/Site: NYSDEC- Spill# 1503836

TestAmerica Job ID: 480-83779-1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		0.98	0.47	mg/Kg		07/15/15 18:00	07/16/15 10:39	1

Surrogate Summary

Client: New York State D.E.C.
Project/Site: NYSDEC- Spill# 1503836

TestAmerica Job ID: 480-83779-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Waste **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	12DCE	BFB	DBFM
Lab Sample ID	Client Sample ID	(50-149)	(53-146)	(49-148)	(60-140)
480-83779-1	BOT GARDEN TAR	101	100	99	100
LCS 480-253504/1-A	Lab Control Sample	115	119	114	116
MB 480-253504/2-A	Method Blank	99	102	99	97

Surrogate Legend

TOL = Toluene-d8 (Surr)
12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Waste **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL	TPH
Lab Sample ID	Client Sample ID	(39-146)	(37-120)	(18-120)	(34-132)	(11-120)	(65-153)
480-83779-1	BOT GARDEN TAR	0 X	0 X	0 X	0 X	0 X	0 X
LCS 480-253202/2-A	Lab Control Sample	95	82	82	97	84	98
LCSD 480-253202/3-A	Lab Control Sample Dup	93	86	82	99	85	104
MB 480-253202/1-A	Method Blank	90	85	84	103	87	101

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = p-Terphenyl-d14 (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Waste **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB2	TCX2
Lab Sample ID	Client Sample ID	(32-136)	(30-124)
480-83779-1	BOT GARDEN TAR	0 X	166 X
LCS 480-253203/2-A	Lab Control Sample	51	52
LCSD 480-253203/3-A	Lab Control Sample Dup	38	42
MB 480-253203/1-A	Method Blank	92	81

Surrogate Legend

DCB = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Surrogate Summary

Client: New York State D.E.C.
Project/Site: NYSDEC- Spill# 1503836

TestAmerica Job ID: 480-83779-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Waste **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	TCX1 (60-154)	DCB1 (65-174)								
480-83779-1	BOT GARDEN TAR	87	137								
LCS 480-253219/2-A	Lab Control Sample	111	152								
LCSD 480-253219/3-A	Lab Control Sample Dup	112	152								
MB 480-253219/1-A	Method Blank	91	140								

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 480-253504/2-A
Matrix: Waste
Analysis Batch: 253606

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 253504

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		99	27	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
1,1,2,2-Tetrachloroethane	ND		99	16	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
1,1,2-Trichloroethane	ND		99	21	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		99	50	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
1,1-Dichloroethane	ND		99	31	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
1,1-Dichloroethene	ND		99	34	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
1,2,4-Trichlorobenzene	ND		99	38	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
1,2-Dibromo-3-Chloropropane	ND		99	50	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
1,2-Dichlorobenzene	ND		99	25	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
1,2-Dichloroethane	ND		99	41	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
1,2-Dichloropropane	ND		99	16	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
1,3-Dichlorobenzene	ND		99	26	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
1,4-Dichlorobenzene	ND		99	14	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
2-Butanone (MEK)	ND		500	290	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
2-Hexanone	ND		500	200	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
4-Methyl-2-pentanone (MIBK)	ND		500	32	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Acetone	ND		500	410	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Benzene	ND		99	19	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Bromodichloromethane	ND		99	20	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Bromoform	ND		99	50	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Bromomethane	ND		99	22	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Carbon disulfide	ND		99	45	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Carbon tetrachloride	ND		99	25	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Chlorobenzene	ND		99	13	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Dibromochloromethane	ND		99	48	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Chloroethane	ND		99	21	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Chloroform	ND		99	68	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Chloromethane	ND		99	24	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
cis-1,2-Dichloroethene	ND		99	27	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
cis-1,3-Dichloropropene	ND		99	24	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Cyclohexane	ND		99	22	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Dichlorodifluoromethane	ND		99	43	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Ethylbenzene	ND		99	29	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
1,2-Dibromoethane	ND		99	17	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Isopropylbenzene	ND		99	15	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Methyl acetate	ND		99	47	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Methyl tert-butyl ether	ND		99	37	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Methylcyclohexane	ND		99	46	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Methylene Chloride	ND		99	20	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Styrene	ND		99	24	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Tetrachloroethene	ND		99	13	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Toluene	ND		99	27	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
trans-1,2-Dichloroethene	ND		99	23	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
trans-1,3-Dichloropropene	ND		99	9.8	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Trichloroethene	ND		99	28	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Trichlorofluoromethane	ND		99	47	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Vinyl chloride	ND		99	33	ug/Kg		07/15/15 18:34	07/16/15 12:10	1
Xylenes, Total	ND		200	55	ug/Kg		07/15/15 18:34	07/16/15 12:10	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*99*		*50 - 149*	*07/15/15 18:34*	*07/16/15 12:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*53 - 146*	*07/15/15 18:34*	*07/16/15 12:10*	*1*
4-Bromofluorobenzene (Surr)	*99*		*49 - 148*	*07/15/15 18:34*	*07/16/15 12:10*	*1*
Dibromofluoromethane (Surr)	*97*		*60 - 140*	*07/15/15 18:34*	*07/16/15 12:10*	*1*

Lab Sample ID: LCS 480-253504/1-A
Matrix: Waste
Analysis Batch: 253606

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 253504

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	2490	2830		ug/Kg		114	68 - 130
1,1,2,2-Tetrachloroethane	2490	2810		ug/Kg		113	73 - 119
1,1,2-Trichloroethane	2490	2840		ug/Kg		114	81 - 115
1,1,2-Trichloro-1,2,2-trifluoroethane	2490	2630		ug/Kg		106	10 - 179
1,1-Dichloroethane	2490	2930		ug/Kg		118	78 - 121
1,1-Dichloroethene	2490	2620		ug/Kg		105	48 - 133
1,2,4-Trichlorobenzene	2490	2880		ug/Kg		116	70 - 140
1,2-Dibromo-3-Chloropropane	2490	2700		ug/Kg		108	56 - 122
1,2-Dichlorobenzene	2490	2900		ug/Kg		116	78 - 125
1,2-Dichloroethane	2490	2730		ug/Kg		110	74 - 127
1,2-Dichloropropane	2490	2960	*	ug/Kg		119	81 - 115
1,3-Dichlorobenzene	2490	2900	*	ug/Kg		117	82 - 114
1,4-Dichlorobenzene	2490	2870	*	ug/Kg		115	81 - 113
2-Butanone (MEK)	12500	14500		ug/Kg		116	54 - 149
2-Hexanone	12500	14800		ug/Kg		119	70 - 127
4-Methyl-2-pentanone (MIBK)	12500	13600		ug/Kg		110	74 - 120
Acetone	12500	10200		ug/Kg		82	47 - 141
Benzene	2490	2960		ug/Kg		119	77 - 125
Bromodichloromethane	2490	2720		ug/Kg		109	71 - 121
Bromoform	2490	2440		ug/Kg		98	48 - 125
Bromomethane	2490	2160		ug/Kg		87	39 - 149
Carbon disulfide	2490	2640		ug/Kg		106	40 - 136
Carbon tetrachloride	2490	2990		ug/Kg		120	54 - 135
Chlorobenzene	2490	2900		ug/Kg		116	76 - 126
Dibromochloromethane	2490	2630		ug/Kg		106	64 - 118
Chloroethane	2490	1650		ug/Kg		66	23 - 164
Chloroform	2490	2850		ug/Kg		115	78 - 118
Chloromethane	2490	2710		ug/Kg		109	61 - 124
cis-1,2-Dichloroethene	2490	3000		ug/Kg		121	79 - 124
cis-1,3-Dichloropropene	2490	3060	*	ug/Kg		123	75 - 121
Cyclohexane	2490	2860		ug/Kg		115	49 - 129
Dichlorodifluoromethane	2490	2610		ug/Kg		105	10 - 150
Ethylbenzene	2490	2910		ug/Kg		117	78 - 124
1,2-Dibromoethane	2490	2870		ug/Kg		115	81 - 119
Isopropylbenzene	2490	2980	*	ug/Kg		120	76 - 119
Methyl acetate	12500	15200		ug/Kg		122	71 - 123
Methyl tert-butyl ether	2490	2790		ug/Kg		112	67 - 137
Methylcyclohexane	2490	3220		ug/Kg		129	50 - 130
Methylene Chloride	2490	2720		ug/Kg		109	75 - 118
Styrene	2490	2970		ug/Kg		119	84 - 119
Tetrachloroethene	2490	3000		ug/Kg		120	73 - 133
Toluene	2490	2910		ug/Kg		117	75 - 124
trans-1,2-Dichloroethene	2490	3020		ug/Kg		121	74 - 129

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 480-253504/1-A
Matrix: Waste
Analysis Batch: 253606

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 253504

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Trichloroethene			2490	3000		ug/Kg		121	75 - 131		
Trichlorofluoromethane			2490	1950		ug/Kg		78	29 - 158		
Vinyl chloride			2490	2790		ug/Kg		112	59 - 124		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*115*		*50 - 149*
1,2-Dichloroethane-d4 (Surr)	*119*		*53 - 146*
4-Bromofluorobenzene (Surr)	*114*		*49 - 148*
Dibromofluoromethane (Surr)	*116*		*60 - 140*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-253202/1-A
Matrix: Waste
Analysis Batch: 253291

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 253202

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-Trichlorophenol	ND		3400	740	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
2,4,6-Trichlorophenol	ND		3400	220	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
2,4-Dichlorophenol	ND		3400	180	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
2,4-Dimethylphenol	ND		3400	920	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
2,4-Dinitrophenol	ND		6600	1200	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
2,4-Dinitrotoluene	ND		3400	520	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
2,6-Dinitrotoluene	ND		3400	820	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
2-Chloronaphthalene	ND		3400	220	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
2-Chlorophenol	ND		3400	170	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
2-Methylnaphthalene	ND		3400	40	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
2-Methylphenol	ND		3400	100	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
2-Nitroaniline	ND		6600	1100	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
2-Nitrophenol	ND		3400	150	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
3,3'-Dichlorobenzidine	ND		3400	3000	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
3-Nitroaniline	ND		6600	780	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
4,6-Dinitro-2-methylphenol	ND		6600	1200	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
4-Bromophenyl phenyl ether	ND		3400	1100	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
4-Chloro-3-methylphenol	ND		3400	140	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
4-Chloroaniline	ND		3400	1000	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
4-Chlorophenyl phenyl ether	ND		3400	72	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
4-Methylphenol	ND		6600	190	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
4-Nitroaniline	ND		6600	380	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
4-Nitrophenol	ND		6600	820	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Acenaphthene	ND		3400	40	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Acenaphthylene	ND		3400	28	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Acetophenone	ND		3400	170	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Anthracene	ND		3400	86	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Atrazine	ND		3400	150	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Benzaldehyde	ND		3400	380	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Benzo[a]anthracene	ND		3400	58	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Benzo[a]pyrene	ND		3400	82	ug/Kg		07/14/15 15:27	07/15/15 09:32	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 480-253202/1-A
Matrix: Waste
Analysis Batch: 253291

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 253202

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[b]fluoranthene	ND		3400	66	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Benzo[g,h,i]perylene	ND		3400	40	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Benzo[k]fluoranthene	ND		3400	38	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Biphenyl	ND		3400	220	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
bis (2-chloroisopropyl) ether	ND		3400	360	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Bis(2-chloroethoxy)methane	ND		3400	180	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Bis(2-chloroethyl)ether	ND		3400	300	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Bis(2-ethylhexyl) phthalate	ND		3400	1100	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Butyl benzyl phthalate	ND		3400	900	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Caprolactam	ND		3400	1500	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Carbazole	ND		3400	40	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Chrysene	ND		3400	34	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Dibenz(a,h)anthracene	ND		3400	40	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Dibenzofuran	ND		3400	36	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Diethyl phthalate	ND		3400	100	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Dimethyl phthalate	ND		3400	88	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Di-n-butyl phthalate	ND		3400	1200	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Di-n-octyl phthalate	ND		3400	78	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Fluoranthene	ND		3400	48	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Fluorene	ND		3400	78	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Hexachlorobenzene	ND		3400	170	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Hexachlorobutadiene	ND		3400	170	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Hexachlorocyclopentadiene	ND		3400	1000	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Hexachloroethane	ND		3400	260	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Indeno[1,2,3-cd]pyrene	ND		3400	94	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Isophorone	ND		3400	170	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Naphthalene	ND		3400	56	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Nitrobenzene	ND		3400	150	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
N-Nitrosodi-n-propylamine	ND		3400	260	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
N-Nitrosodiphenylamine	ND		3400	180	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Pentachlorophenol	ND		6600	1200	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Phenanthrene	ND		3400	70	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Phenol	ND		3400	360	ug/Kg		07/14/15 15:27	07/15/15 09:32	1
Pyrene	ND		3400	22	ug/Kg		07/14/15 15:27	07/15/15 09:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*90*		*39 - 146*	*07/14/15 15:27*	*07/15/15 09:32*	*1*
2-Fluorobiphenyl	*85*		*37 - 120*	*07/14/15 15:27*	*07/15/15 09:32*	*1*
2-Fluorophenol (Surr)	*84*		*18 - 120*	*07/14/15 15:27*	*07/15/15 09:32*	*1*
Nitrobenzene-d5 (Surr)	*103*		*34 - 132*	*07/14/15 15:27*	*07/15/15 09:32*	*1*
Phenol-d5 (Surr)	*87*		*11 - 120*	*07/14/15 15:27*	*07/15/15 09:32*	*1*
p-Terphenyl-d14 (Surr)	*101*		*65 - 153*	*07/14/15 15:27*	*07/15/15 09:32*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-253202/2-A
Matrix: Waste
Analysis Batch: 253291

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 253202

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
2,4-Dinitrotoluene			500000	478000		ug/Kg		96	55 - 125		
2-Chlorophenol			500000	428000		ug/Kg		86	38 - 120		
4-Chloro-3-methylphenol			500000	523000		ug/Kg		105	49 - 125		
4-Nitrophenol			1000000	1190000		ug/Kg		119	43 - 137		
Acenaphthene			500000	435000		ug/Kg		87	53 - 120		
Atrazine			1000000	941000		ug/Kg		94	60 - 164		
Bis(2-ethylhexyl) phthalate			500000	543000		ug/Kg		109	61 - 133		
Fluorene			500000	437000		ug/Kg		87	63 - 126		
Hexachloroethane			500000	469000		ug/Kg		94	41 - 120		
N-Nitrosodi-n-propylamine			500000	482000		ug/Kg		96	46 - 120		
Pentachlorophenol			1000000	893000		ug/Kg		89	33 - 136		
Phenol			500000	419000		ug/Kg		84	36 - 120		
Pyrene			500000	531000		ug/Kg		106	51 - 133		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*95*		*39 - 146*
2-Fluorobiphenyl	*82*		*37 - 120*
2-Fluorophenol (Surr)	*82*		*18 - 120*
Nitrobenzene-d5 (Surr)	*97*		*34 - 132*
Phenol-d5 (Surr)	*84*		*11 - 120*
p-Terphenyl-d14 (Surr)	*98*		*65 - 153*

Lab Sample ID: LCSD 480-253202/3-A
Matrix: Waste
Analysis Batch: 253291

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 253202

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4-Dinitrotoluene			500000	482000		ug/Kg		96	55 - 125	1	20
2-Chlorophenol			500000	441000		ug/Kg		88	38 - 120	3	25
4-Chloro-3-methylphenol			500000	534000		ug/Kg		107	49 - 125	2	27
4-Nitrophenol			1000000	1190000		ug/Kg		119	43 - 137	0	25
Acenaphthene			500000	449000		ug/Kg		90	53 - 120	3	35
Atrazine			1000000	995000		ug/Kg		100	60 - 164	6	20
Bis(2-ethylhexyl) phthalate			500000	548000		ug/Kg		110	61 - 133	1	15
Fluorene			500000	454000		ug/Kg		91	63 - 126	4	15
Hexachloroethane			500000	467000		ug/Kg		93	41 - 120	0	46
N-Nitrosodi-n-propylamine			500000	489000		ug/Kg		98	46 - 120	1	31
Pentachlorophenol			1000000	893000		ug/Kg		89	33 - 136	0	35
Phenol			500000	427000		ug/Kg		85	36 - 120	2	35
Pyrene			500000	551000		ug/Kg		110	51 - 133	4	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*93*		*39 - 146*
2-Fluorobiphenyl	*86*		*37 - 120*
2-Fluorophenol (Surr)	*82*		*18 - 120*
Nitrobenzene-d5 (Surr)	*99*		*34 - 132*
Phenol-d5 (Surr)	*85*		*11 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 480-253202/3-A
Matrix: Waste
Analysis Batch: 253291

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 253202

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
p-Terphenyl-d14 (Surr)	*104*		*65 - 153*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 480-253203/1-A
Matrix: Waste
Analysis Batch: 253555

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 253203

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		0.50	0.097	mg/Kg		07/14/15 15:29	07/16/15 08:13	1
4,4'-DDE	ND		0.50	0.14	mg/Kg		07/14/15 15:29	07/16/15 08:13	1
4,4'-DDT	ND		0.50	0.11	mg/Kg		07/14/15 15:29	07/16/15 08:13	1
Aldrin	ND		0.50	0.051	mg/Kg		07/14/15 15:29	07/16/15 08:13	1
alpha-BHC	0.138	J	0.50	0.090	mg/Kg		07/14/15 15:29	07/16/15 08:13	1
alpha-Chlordane	ND		0.50	0.25	mg/Kg		07/14/15 15:29	07/16/15 08:13	1
beta-BHC	ND		0.50	0.36	mg/Kg		07/14/15 15:29	07/16/15 08:13	1
delta-BHC	ND		0.50	0.066	mg/Kg		07/14/15 15:29	07/16/15 08:13	1
Dieldrin	ND		0.50	0.12	mg/Kg		07/14/15 15:29	07/16/15 08:13	1
Endosulfan I	ND		0.50	0.11	mg/Kg		07/14/15 15:29	07/16/15 08:13	1
Endosulfan II	ND		0.50	0.090	mg/Kg		07/14/15 15:29	07/16/15 08:13	1
Endosulfan sulfate	ND		0.50	0.093	mg/Kg		07/14/15 15:29	07/16/15 08:13	1
Endrin	ND		0.50	0.16	mg/Kg		07/14/15 15:29	07/16/15 08:13	1
Endrin aldehyde	ND		0.50	0.13	mg/Kg		07/14/15 15:29	07/16/15 08:13	1
Endrin ketone	ND		0.50	0.12	mg/Kg		07/14/15 15:29	07/16/15 08:13	1
gamma-BHC (Lindane)	ND		0.50	0.36	mg/Kg		07/14/15 15:29	07/16/15 08:13	1
gamma-Chlordane	ND		0.50	0.069	mg/Kg		07/14/15 15:29	07/16/15 08:13	1
Heptachlor	ND		0.50	0.078	mg/Kg		07/14/15 15:29	07/16/15 08:13	1
Heptachlor epoxide	ND		0.50	0.13	mg/Kg		07/14/15 15:29	07/16/15 08:13	1
Methoxychlor	ND		0.50	0.13	mg/Kg		07/14/15 15:29	07/16/15 08:13	1
Toxaphene	ND		5.0	2.9	mg/Kg		07/14/15 15:29	07/16/15 08:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*92*		*32 - 136*	*07/14/15 15:29*	*07/16/15 08:13*	*1*
Tetrachloro-m-xylene	*81*		*30 - 124*	*07/14/15 15:29*	*07/16/15 08:13*	*1*

Lab Sample ID: LCS 480-253203/2-A
Matrix: Waste
Analysis Batch: 253555

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 253203

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4,4'-DDD	5.00	7.95	*	mg/Kg		159	52 - 138
4,4'-DDE	5.00	4.16		mg/Kg		83	52 - 131
4,4'-DDT	5.00	5.16		mg/Kg		103	50 - 131
Aldrin	5.00	3.58		mg/Kg		72	35 - 120
alpha-BHC	5.00	6.55	*	mg/Kg		131	49 - 120
alpha-Chlordane	5.00	5.45		mg/Kg		109	40 - 133
beta-BHC	5.00	10.3	*	mg/Kg		205	52 - 127

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 480-253203/2-A
Matrix: Waste
Analysis Batch: 253555

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 253203

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
delta-BHC	5.00	8.88	*	mg/Kg		178	45 - 123
Dieldrin	5.00	5.80		mg/Kg		116	50 - 131
Endosulfan I	5.00	4.77		mg/Kg		95	43 - 121
Endosulfan II	5.00	7.66	*	mg/Kg		153	48 - 134
Endosulfan sulfate	5.00	10.3	*	mg/Kg		205	46 - 144
Endrin	5.00	5.51		mg/Kg		110	46 - 134
Endrin aldehyde	5.00	10.9	*	mg/Kg		218	31 - 137
Endrin ketone	5.00	9.42	*	mg/Kg		188	44 - 140
gamma-BHC (Lindane)	5.00	7.52	*	mg/Kg		150	50 - 120
gamma-Chlordane	5.00	5.55		mg/Kg		111	52 - 129
Heptachlor	5.00	4.51		mg/Kg		90	51 - 121
Heptachlor epoxide	5.00	5.26		mg/Kg		105	52 - 129
Methoxychlor	5.00	7.41		mg/Kg		148	50 - 149

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*51*		*32 - 136*
Tetrachloro-m-xylene	*52*		*30 - 124*

Lab Sample ID: LCSD 480-253203/3-A
Matrix: Waste
Analysis Batch: 253555

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 253203

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4,4'-DDD	5.00	8.86	*	mg/Kg		177	52 - 138	11	18
4,4'-DDE	5.00	3.93		mg/Kg		79	52 - 131	6	16
4,4'-DDT	5.00	5.29		mg/Kg		106	50 - 131	3	17
Aldrin	5.00	3.13		mg/Kg		63	35 - 120	14	24
alpha-BHC	5.00	7.14	*	mg/Kg		143	49 - 120	9	19
alpha-Chlordane	5.00	5.43		mg/Kg		109	40 - 133	0	13
beta-BHC	5.00	12.1	*	mg/Kg		242	52 - 127	16	17
delta-BHC	5.00	10.2	*	mg/Kg		204	45 - 123	14	14
Dieldrin	5.00	5.93		mg/Kg		119	50 - 131	2	13
Endosulfan I	5.00	4.52		mg/Kg		90	43 - 121	5	16
Endosulfan II	5.00	7.74	*	mg/Kg		155	48 - 134	1	17
Endosulfan sulfate	5.00	12.0	*	mg/Kg		240	46 - 144	16	14
Endrin	5.00	5.51		mg/Kg		110	46 - 134	0	19
Endrin aldehyde	5.00	13.0	*	mg/Kg		261	31 - 137	18	23
Endrin ketone	5.00	10.9	*	mg/Kg		217	44 - 140	14	14
gamma-BHC (Lindane)	5.00	8.17	*	mg/Kg		163	50 - 120	8	20
gamma-Chlordane	5.00	5.84		mg/Kg		117	52 - 129	5	14
Heptachlor	5.00	4.22		mg/Kg		84	51 - 121	7	16
Heptachlor epoxide	5.00	5.62		mg/Kg		112	52 - 129	7	17
Methoxychlor	5.00	9.02	*	mg/Kg		180	50 - 149	20	14

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*38*		*32 - 136*
Tetrachloro-m-xylene	*42*		*30 - 124*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 480-253219/1-A
Matrix: Waste
Analysis Batch: 253492

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 253219

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		2.5	2.5	mg/Kg		07/14/15 16:31	07/15/15 19:54	1
PCB-1221	ND		2.5	2.5	mg/Kg		07/14/15 16:31	07/15/15 19:54	1
PCB-1232	ND		2.5	2.5	mg/Kg		07/14/15 16:31	07/15/15 19:54	1
PCB-1242	ND		2.5	2.5	mg/Kg		07/14/15 16:31	07/15/15 19:54	1
PCB-1248	ND		2.5	2.5	mg/Kg		07/14/15 16:31	07/15/15 19:54	1
PCB-1254	ND		2.5	2.5	mg/Kg		07/14/15 16:31	07/15/15 19:54	1
PCB-1260	ND		2.5	2.5	mg/Kg		07/14/15 16:31	07/15/15 19:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*91*		*60 - 154*	*07/14/15 16:31*	*07/15/15 19:54*	*1*
DCB Decachlorobiphenyl	*140*		*65 - 174*	*07/14/15 16:31*	*07/15/15 19:54*	*1*

Lab Sample ID: LCS 480-253219/2-A
Matrix: Waste
Analysis Batch: 253492

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 253219

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
PCB-1016			50.0	62.3		mg/Kg		125	51 - 185		
PCB-1260			50.0	71.7		mg/Kg		143	61 - 184		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*111*		*60 - 154*
DCB Decachlorobiphenyl	*152*		*65 - 174*

Lab Sample ID: LCSD 480-253219/3-A
Matrix: Waste
Analysis Batch: 253492

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 253219

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016			50.0	63.2		mg/Kg		126	51 - 185	1	50
PCB-1260			50.0	71.9		mg/Kg		144	61 - 184	0	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*112*		*60 - 154*
DCB Decachlorobiphenyl	*152*		*65 - 174*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-253360/1-A
Matrix: Waste
Analysis Batch: 253764

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 253360

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		10.3	4.5	mg/Kg		07/15/15 11:00	07/16/15 13:39	1
Antimony	ND		15.4	0.41	mg/Kg		07/15/15 11:00	07/16/15 13:39	1
Arsenic	ND		2.1	0.41	mg/Kg		07/15/15 11:00	07/16/15 13:39	1
Barium	ND		0.51	0.11	mg/Kg		07/15/15 11:00	07/16/15 13:39	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 480-253360/1-A
Matrix: Waste
Analysis Batch: 253764

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 253360

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.21	0.029	mg/Kg		07/15/15 11:00	07/16/15 13:39	1
Cadmium	ND		0.21	0.031	mg/Kg		07/15/15 11:00	07/16/15 13:39	1
Calcium	4.66	J	51.3	3.4	mg/Kg		07/15/15 11:00	07/16/15 13:39	1
Chromium	ND		0.51	0.21	mg/Kg		07/15/15 11:00	07/16/15 13:39	1
Cobalt	ND		0.51	0.051	mg/Kg		07/15/15 11:00	07/16/15 13:39	1
Copper	ND		1.0	0.22	mg/Kg		07/15/15 11:00	07/16/15 13:39	1
Iron	ND		10.3	3.6	mg/Kg		07/15/15 11:00	07/16/15 13:39	1
Lead	ND		1.0	0.25	mg/Kg		07/15/15 11:00	07/16/15 13:39	1
Magnesium	ND		20.5	0.95	mg/Kg		07/15/15 11:00	07/16/15 13:39	1
Manganese	0.0554	J	0.21	0.033	mg/Kg		07/15/15 11:00	07/16/15 13:39	1
Nickel	ND		5.1	0.24	mg/Kg		07/15/15 11:00	07/16/15 13:39	1
Potassium	ND		30.8	20.5	mg/Kg		07/15/15 11:00	07/16/15 13:39	1
Selenium	ND		4.1	0.41	mg/Kg		07/15/15 11:00	07/16/15 13:39	1
Silver	ND		0.62	0.21	mg/Kg		07/15/15 11:00	07/16/15 13:39	1
Sodium	ND		144	13.3	mg/Kg		07/15/15 11:00	07/16/15 13:39	1
Thallium	ND		6.2	0.31	mg/Kg		07/15/15 11:00	07/16/15 13:39	1
Vanadium	ND		0.51	0.11	mg/Kg		07/15/15 11:00	07/16/15 13:39	1
Zinc	ND		2.1	0.66	mg/Kg		07/15/15 11:00	07/16/15 13:39	1

Lab Sample ID: LCDSRM 480-253360/3-A
Matrix: Waste
Analysis Batch: 253764

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 253360

Analyte	Spike Added	LCDSRM Result	LCDSRM Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	8100	8201		mg/Kg		101.2	39.6 - 160.5	4	20
Antimony	116	94.65		mg/Kg		81.6	22.1 - 252.6	4	20
Arsenic	122	107.7		mg/Kg		88.3	70.0 - 145.1	2	20
Barium	167	147.1		mg/Kg		88.1	73.1 - 126.9	2	20
Beryllium	54.3	47.20		mg/Kg		86.9	73.1 - 127.1	3	20
Cadmium	88.0	77.26		mg/Kg		87.8	73.3 - 127.3	5	20
Calcium	5920	5019		mg/Kg		84.8	73.6 - 126.4	3	20
Chromium	102	90.10		mg/Kg		88.3	69.4 - 130.4	3	20
Cobalt	99.4	94.30		mg/Kg		94.9	74.3 - 125.8	3	20
Copper	78.0	68.12		mg/Kg		87.3	73.7 - 132.1	3	20
Iron	15100	13240		mg/Kg		87.7	37.1 - 162.9	6	20
Lead	94.5	93.11		mg/Kg		98.5	70.5 - 129.1	7	20
Magnesium	3020	2696		mg/Kg		89.3	65.9 - 133.8	3	20
Manganese	401	353.3		mg/Kg		88.1	76.1 - 123.9	7	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCDSRM 480-253360/3-A
Matrix: Waste
Analysis Batch: 253764

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 253360

Analyte	Spike Added	LCDSRM Result	LCDSRM Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nickel	56.3	53.12		mg/Kg		94.4	69.8 - 130.0	2	20
Potassium	2490	2346		mg/Kg		94.2	60.6 - 139.4	4	20
Selenium	157	141.0		mg/Kg		89.8	67.5 - 131.8	3	20
Silver	34.2	28.98		mg/Kg		84.7	65.5 - 134.2	1	20
Sodium	246	227.8		mg/Kg		92.6	32.0 - 168.3	3	20
Thallium	116	110.6		mg/Kg		95.3	67.4 - 132.8	4	20
Vanadium	67.1	62.95		mg/Kg		93.8	57.8 - 192.3	4	20
Zinc	207	182.4		mg/Kg		88.1	70.0 - 130.4	3	20

Lab Sample ID: LCSSRM 480-253360/2-A
Matrix: Waste
Analysis Batch: 253764

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 253360

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	8100	7857		mg/Kg		97.0	39.6 - 160.5
Antimony	116	90.86		mg/Kg		78.3	22.1 - 252.6
Arsenic	122	105.3		mg/Kg		86.3	70.0 - 145.1
Barium	167	143.5		mg/Kg		85.9	73.1 - 126.9
Beryllium	54.3	45.77		mg/Kg		84.3	73.1 - 127.1
Cadmium	88.0	73.74		mg/Kg		83.8	73.3 - 127.3
Calcium	5920	4852		mg/Kg		82.0	73.6 - 126.4
Chromium	102	87.64		mg/Kg		85.9	69.4 - 130.4
Cobalt	99.4	91.58		mg/Kg		92.1	74.3 - 125.8
Copper	78.0	65.81		mg/Kg		84.4	73.7 - 132.1
Iron	15100	12470		mg/Kg		82.6	37.1 - 162.9
Lead	94.5	86.96		mg/Kg		92.0	70.5 - 129.1
Magnesium	3020	2606		mg/Kg		86.3	65.9 - 133.8
Manganese	401	329.2		mg/Kg		82.1	76.1 - 123.9
Nickel	56.3	52.11		mg/Kg		92.6	69.8 - 130.0
Potassium	2490	2254		mg/Kg		90.5	60.6 - 139.4

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCSSRM 480-253360/2-A
Matrix: Waste
Analysis Batch: 253764

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 253360

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	157	136.6		mg/Kg		87.0	67.5 - 131.8
Silver	34.2	28.65		mg/Kg		83.8	65.5 - 134.2
Sodium	246	220.5		mg/Kg		89.6	32.0 - 168.3
Thallium	116	106.3		mg/Kg		91.6	67.4 - 132.8
Vanadium	67.1	60.71		mg/Kg		90.5	57.8 - 192.3
Zinc	207	177.7		mg/Kg		85.8	70.0 - 130.4

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 480-253381/1-A
Matrix: Waste
Analysis Batch: 253573

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 253381

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020	0.0079	mg/Kg		07/15/15 13:35	07/15/15 14:51	1

Lab Sample ID: LCDSRM 480-253381/3-A
Matrix: Waste
Analysis Batch: 253573

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 253381

Analyte	Spike Added	LCDSRM Result	LCDSRM Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	3.98	4.06		mg/Kg		102.1	51.0 - 149.0	0	20

Lab Sample ID: LCSSRM 480-253381/2-A
Matrix: Waste
Analysis Batch: 253573

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 253381

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	3.98	4.07		mg/Kg		102.4	51.0 - 149.0

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 480-253507/1-A
Matrix: Waste
Analysis Batch: 253692

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 253507

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		1.0	0.48	mg/Kg		07/15/15 18:00	07/16/15 10:26	1

Method: 9012B - Cyanide, Total andor Amenable (Continued)

Lab Sample ID: LCS 480-253507/2-A ^5
Matrix: Waste
Analysis Batch: 253692

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 253507

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	101	97.68		mg/Kg		97	29 - 122

QC Association Summary

Client: New York State D.E.C.
Project/Site: NYSDEC- Spill# 1503836

TestAmerica Job ID: 480-83779-1

GC/MS VOA

Prep Batch: 253504

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-83779-1	BOT GARDEN TAR	Total/NA	Waste	5035A	
LCS 480-253504/1-A	Lab Control Sample	Total/NA	Waste	5035A	
MB 480-253504/2-A	Method Blank	Total/NA	Waste	5035A	

Analysis Batch: 253606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-83779-1	BOT GARDEN TAR	Total/NA	Waste	8260C	253504
LCS 480-253504/1-A	Lab Control Sample	Total/NA	Waste	8260C	253504
MB 480-253504/2-A	Method Blank	Total/NA	Waste	8260C	253504

GC/MS Semi VOA

Prep Batch: 253202

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-83779-1	BOT GARDEN TAR	Total/NA	Waste	3580A	
LCS 480-253202/2-A	Lab Control Sample	Total/NA	Waste	3580A	
LCSD 480-253202/3-A	Lab Control Sample Dup	Total/NA	Waste	3580A	
MB 480-253202/1-A	Method Blank	Total/NA	Waste	3580A	

Analysis Batch: 253291

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-83779-1	BOT GARDEN TAR	Total/NA	Waste	8270D	253202
LCS 480-253202/2-A	Lab Control Sample	Total/NA	Waste	8270D	253202
LCSD 480-253202/3-A	Lab Control Sample Dup	Total/NA	Waste	8270D	253202
MB 480-253202/1-A	Method Blank	Total/NA	Waste	8270D	253202

GC Semi VOA

Prep Batch: 253203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-83779-1	BOT GARDEN TAR	Total/NA	Waste	3580A	
LCS 480-253203/2-A	Lab Control Sample	Total/NA	Waste	3580A	
LCSD 480-253203/3-A	Lab Control Sample Dup	Total/NA	Waste	3580A	
MB 480-253203/1-A	Method Blank	Total/NA	Waste	3580A	

Prep Batch: 253219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-83779-1	BOT GARDEN TAR	Total/NA	Waste	3580A	
LCS 480-253219/2-A	Lab Control Sample	Total/NA	Waste	3580A	
LCSD 480-253219/3-A	Lab Control Sample Dup	Total/NA	Waste	3580A	
MB 480-253219/1-A	Method Blank	Total/NA	Waste	3580A	

Analysis Batch: 253492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-83779-1	BOT GARDEN TAR	Total/NA	Waste	8082A	253219
LCS 480-253219/2-A	Lab Control Sample	Total/NA	Waste	8082A	253219
LCSD 480-253219/3-A	Lab Control Sample Dup	Total/NA	Waste	8082A	253219
MB 480-253219/1-A	Method Blank	Total/NA	Waste	8082A	253219

GC Semi VOA (Continued)

Analysis Batch: 253555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-83779-1	BOT GARDEN TAR	Total/NA	Waste	8081B	253203
LCS 480-253203/2-A	Lab Control Sample	Total/NA	Waste	8081B	253203
LCSD 480-253203/3-A	Lab Control Sample Dup	Total/NA	Waste	8081B	253203
MB 480-253203/1-A	Method Blank	Total/NA	Waste	8081B	253203

Metals

Prep Batch: 253360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-83779-1	BOT GARDEN TAR	Total/NA	Waste	3050B	
LCDSRM 480-253360/3-A	Lab Control Sample Dup	Total/NA	Waste	3050B	
LCSSRM 480-253360/2-A	Lab Control Sample	Total/NA	Waste	3050B	
MB 480-253360/1-A	Method Blank	Total/NA	Waste	3050B	

Prep Batch: 253381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-83779-1	BOT GARDEN TAR	Total/NA	Waste	7471B	
LCDSRM 480-253381/3-A	Lab Control Sample Dup	Total/NA	Waste	7471B	
LCSSRM 480-253381/2-A	Lab Control Sample	Total/NA	Waste	7471B	
MB 480-253381/1-A	Method Blank	Total/NA	Waste	7471B	

Analysis Batch: 253573

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-83779-1	BOT GARDEN TAR	Total/NA	Waste	7471B	253381
LCDSRM 480-253381/3-A	Lab Control Sample Dup	Total/NA	Waste	7471B	253381
LCSSRM 480-253381/2-A	Lab Control Sample	Total/NA	Waste	7471B	253381
MB 480-253381/1-A	Method Blank	Total/NA	Waste	7471B	253381

Analysis Batch: 253764

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-83779-1	BOT GARDEN TAR	Total/NA	Waste	6010C	253360
480-83779-1	BOT GARDEN TAR	Total/NA	Waste	6010C	253360
LCDSRM 480-253360/3-A	Lab Control Sample Dup	Total/NA	Waste	6010C	253360
LCSSRM 480-253360/2-A	Lab Control Sample	Total/NA	Waste	6010C	253360
MB 480-253360/1-A	Method Blank	Total/NA	Waste	6010C	253360

General Chemistry

Prep Batch: 253507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-83779-1	BOT GARDEN TAR	Total/NA	Waste	9012B	
LCS 480-253507/2-A ^5	Lab Control Sample	Total/NA	Waste	9012B	
MB 480-253507/1-A	Method Blank	Total/NA	Waste	9012B	

Analysis Batch: 253692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-83779-1	BOT GARDEN TAR	Total/NA	Waste	9012B	253507
LCS 480-253507/2-A ^5	Lab Control Sample	Total/NA	Waste	9012B	253507
MB 480-253507/1-A	Method Blank	Total/NA	Waste	9012B	253507

Lab Chronicle

Client: New York State D.E.C.
Project/Site: NYSDEC- Spill# 1503836

TestAmerica Job ID: 480-83779-1

Client Sample ID: BOT GARDEN TAR

Lab Sample ID: 480-83779-1

Date Collected: 07/13/15 14:15

Matrix: Waste

Date Received: 07/13/15 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A			253504	07/15/15 18:34	SWO	TAL BUF
Total/NA	Analysis	8260C		10	253606	07/16/15 13:40	LJF	TAL BUF
Total/NA	Prep	3580A			253202	07/14/15 15:27	GVF	TAL BUF
Total/NA	Analysis	8270D		100	253291	07/15/15 10:56	LMW	TAL BUF
Total/NA	Prep	3580A			253203	07/14/15 15:29	GVF	TAL BUF
Total/NA	Analysis	8081B		20	253555	07/16/15 07:54	JRL	TAL BUF
Total/NA	Prep	3580A			253219	07/14/15 16:31	GVF	TAL BUF
Total/NA	Analysis	8082A		2	253492	07/15/15 22:13	KS	TAL BUF
Total/NA	Prep	3050B			253360	07/15/15 11:00	KJ1	TAL BUF
Total/NA	Analysis	6010C		1	253764	07/16/15 14:31	AMH	TAL BUF
Total/NA	Prep	3050B			253360	07/15/15 11:00	KJ1	TAL BUF
Total/NA	Analysis	6010C		10	253764	07/16/15 15:11	AMH	TAL BUF
Total/NA	Prep	7471B			253381	07/15/15 13:35	TAS	TAL BUF
Total/NA	Analysis	7471B		1	253573	07/15/15 15:12	LRK	TAL BUF
Total/NA	Prep	9012B			253507	07/15/15 18:00	CLT	TAL BUF
Total/NA	Analysis	9012B		1	253692	07/16/15 10:39	KMF	TAL BUF

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Certification Summary

Client: New York State D.E.C.
Project/Site: NYSDEC- Spill# 1503836

TestAmerica Job ID: 480-83779-1

Laboratory: TestAmerica Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
New York	NELAP	2	10026	03-31-16

Analysis Method	Prep Method	Matrix	Analyte

Method Summary

Client: New York State D.E.C.
Project/Site: NYSDEC- Spill# 1503836

TestAmerica Job ID: 480-83779-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL BUF
8081B	Organochlorine Pesticides (GC)	SW846	TAL BUF
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL BUF
6010C	Metals (ICP)	SW846	TAL BUF
7471B	Mercury (CVAA)	SW846	TAL BUF
9012B	Cyanide, Total andor Amenable	SW846	TAL BUF

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: New York State D.E.C.
Project/Site: NYSDEC- Spill# 1503836

TestAmerica Job ID: 480-83779-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-83779-1	BOT GARDEN TAR	Waste	07/13/15 14:15	07/13/15 14:50

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client: NYSDEC R4 DER	Project Manager: SAL CALANDRA	Date: 07/13/15	Chain of Custody Number: 286999
Address: 270 Michigan Ave.	Telephone Number (Area Code)/Fax Number: 716 851-7220 / 851-7226	Lab Number:	Page 1 of 1
City: Buffalo	State: NY	Zip Code: 14211	Site Contact: B. Sadowski
Lab Contact: B. Fischer	Project Name and Location (State): Spill # 1503836 / PIN # 1840	Carrier/Waybill Number:	
Contract/Purchase Order/Quote No.: Cook			

Analysis (Attach list if more space is needed): VOC, SVOC, PEST, PCB, Methane

Special Instructions/ Conditions of Receipt

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Trip Blank	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH
BOT GARDEN TRIP 1	07/13/15	1415hrs					✓	2					

480-83779 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

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

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other 30 day TAT

QC Requirements (Specify)

1. Relinquished By	Date: 7/13/15	Time: 1450hrs	1. Received By	Date: 7/13/15	Time: 1450
2. Relinquished By	Date	Time	2. Received By	Date	Time
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments: 16.5 #1

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Login Sample Receipt Checklist

Client: New York State D.E.C. Job Number: 480-83779-1

Login Number: 83779 **List Source: TestAmerica Buffalo**
List Number: 1
Creator: Janish, Carl M

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	same day sampling
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	DEC
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

Appendix E:
Benjamin McPherson Field Notes

10/19/15 INT Botanical Gardens
#932068

On-site 8:26 AM
Weather: 30s - 40s, frost overnight.
Sunny, no breeze.

- Driller Randy (Empire / STB) on-site 8:28 AM w/ pickup and track mounted Geoprobe.
- Dave Stoner (Empire/STB) on-site ~ 8:30 AM. w/ pickup truck

~~SB-1~~ B-1 (8:54 AM)
- ~10 Ft ~~NE~~ west of tar seep.
0'-4' Ft: clean looking soil, mix of topsoil w/ silty brown/gray sub surface soil.
4'-8': clean, apparently native soil, brown/gray clay
8'-12': Damp, Varied soil material, hard till at bottom (reddish). Thin seam of gray sand/silt w/ shells
Boring terminated @ 12' due to soil hardness and lack of contam →

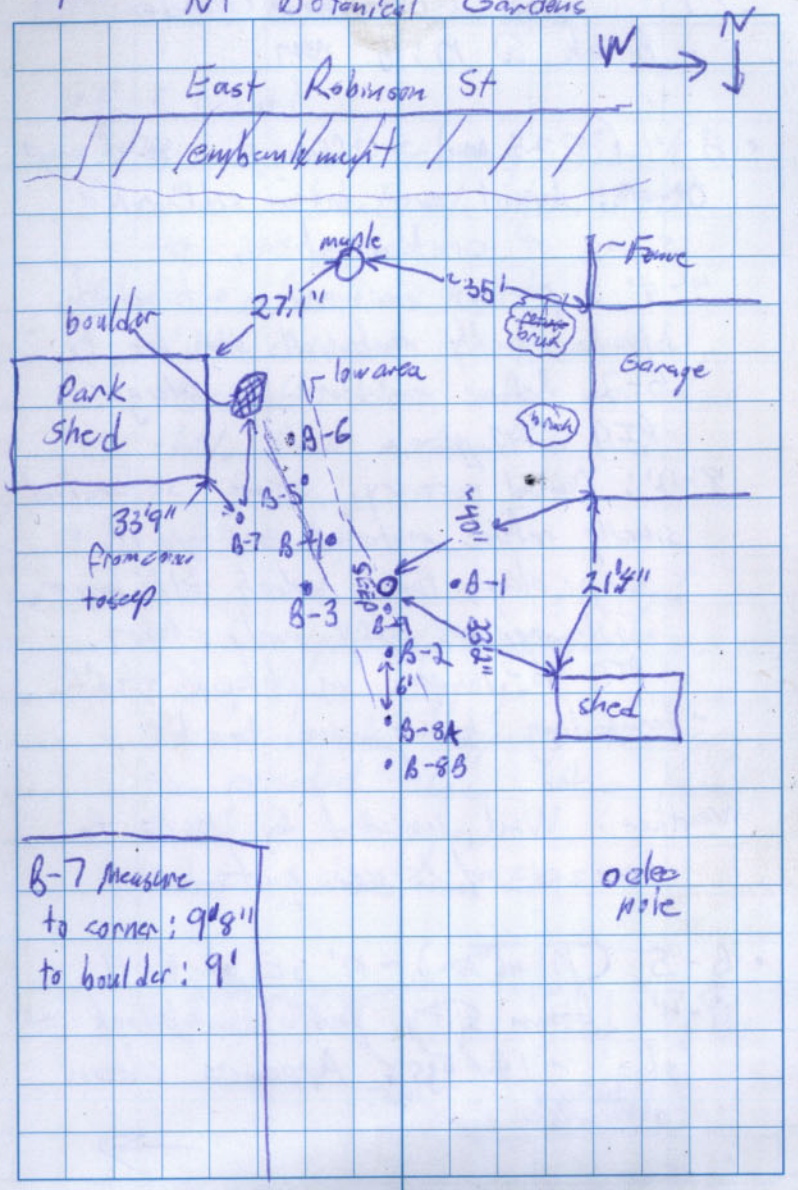
Rite in the Rain

10/19 NT Botanical Garden

- B-2 (9:25 AM)
  - ~10' North of seep
  - 0'-4'; partial recovery, refuse plugged in spoon bit. Smells of sewage. (4-5 PID ppm).
  - 4'-8'; hard object at ~4.5', saturated, black soil mixed w/ wood + debris. 150 ppm PID w/ distinct sewage/decay odor (think WWTP). Peak PID 1770 ppm.
  - 8'-9.3'; refusal @ 9.3'. Barely any recovery. Possible tar globules in boring plug.

- B-3 (9:53 AM) ~10ft east
  - 0'-4'; top soil w/ clay to silt. Appears clean throughout
  - 4'-8'; brown/gray clay to silt. Clean material throughout.
  - 8'-12'; Moist. Mostly gray clay. Clean throughout
  - terminate boring @ 12' due to refusal + clean conditions.

10/19 NT Botanical Gardens



Rite in the Rain

10/19 NT Botanical Gardens

- Break @ 10:15 AM

• B-4 (10:25 AM) ~ 10ft angled SE of soap
0'-4': topsoil over brown silt. No signs of contamination.
4'-8': partial recovery, saturated, black smelly material similar to B-2. Refuse evident in plug. PID 240 ppm.
8'-12': Partial recovery. Some saturated smelly refuse material on top of gray clay, then reddish till layer. Till appears dry and clean. PID 40-110 ppm in black stuff.
- terminating boring due to till

Weather: Wind increased by 10:30 to breezes w/ some gusts.

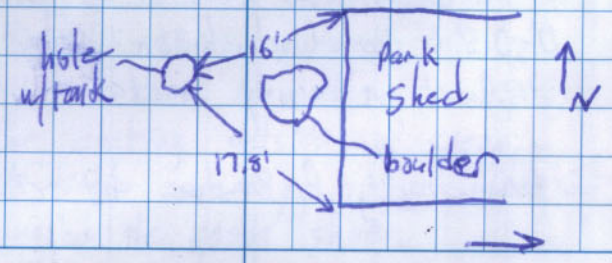
• B-5 (10:46 AM) ~ 10' SE of B-4
0'-4': Brown silt, possible chunck of 'slag' ~ 1ft bgs. Appears clean otherwise

→

10/19 NT Botanical Gardens

• B-5 (cont)
4'-8': minimal recovery. Black refuse material w/ odor. PID 40-220 ppm.
8'-12': refusal @ 11.2'.
< 1ft of black refuse material, then into clean clay + reddish till. Rock material @ end.

• B-6 (11:10 AM)
- first spoon went <1' in, and hit what appears to something hollow. Hand digging.
- Discovered what appears to be the rounded edge of a metal tank. ~1ft bgs.
- Marked w/ stake from EM



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10/19 NT Botanical Gardens

- Lunch 11:40 AM - 12:20 PM

• B-7 (12:30 PM) 9'8" from shed corner - on mounded soil next to shed where another anomaly was on EM survey.
0'-4': topsoil w/ brown/gray silt-clay underneath. Appears clean throughout.
4'-8': clean brown/gray clay throughout.
8'-12': Moist. Gray clay, clean.
- Terminate boring @ 12'

• B-8A (12:50 PM) 6' N of B-2
0'-4': hit chunk of wood that clogged the spoon. Some evidence of the black refuse material at bottom of core. High PID 32 ppm (bottom)
• B-8B (12:59 PM) ~3A N of B-8A
0'-2.5': Gravel stuck in probe and refusal on woody material.

Abandoning B-8 due to refusals. →

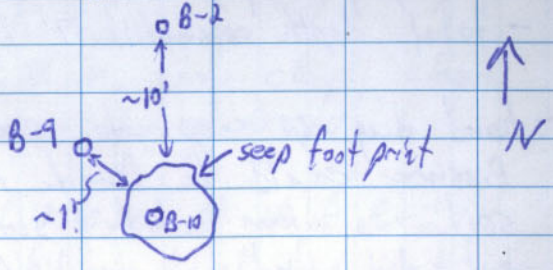
10/19 NT Botanical Gardens

• B-9 (1:12 PM) NW side of seep
0'-4': Partial recovery. brown, clean clayey-silt.
4'-8': partial recovery. ~1.5' of black refuse material in bottom. Some odor, PID 4-12 ppm. Wet
8'-12': black material on top of gray clay, moist.
- total depth estimated 7' bgs.

- hand dug up seep to see if fissure could be found. Most soil was clean under surface, but did find an area where staining continued down. Set up probe over the stain vein.

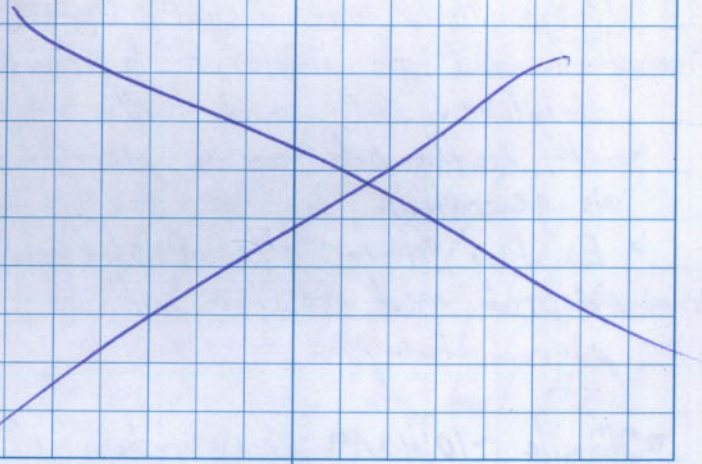
• B-10 (1:45 PM) In seep
0'-4': tar-black material in top half of core. No odor or PID. Tar coating outside of spoon.
4'-8': little recovery, woody material plugged the spoon shoe.

- B-10 (cont)
  8'-12'; some tar/air/water bubbled up out of push rods while extracting ~~core~~ spoon. Some small tar globules on rod. Wet. Some black/tar in top of core, hit clean clay + red till. ~~shell~~ Drugs observed.



- end probing 2:30 PM. Filled in hand dug hole w/ soil, tar from surface set aside in bucket for later disposal. No analytical samples taken due to limited recovery of contaminated soil.
- "black refuse material" typically had mix of wood, glass, wallpaper, and general debris.

- Weather: warmed up to ~57°F by end of day, windy w/ clouds and intermittent sun.
- Empire is going to hold onto drill cuttings and seep material until tank investigation
  ↳ expect greater amount of material.
- Replaced construction fence around seep ~~area~~ area.
- Off-site 3:05 PM. Expect Empire to be off shortly after



Appendix F:
Analytical Tables from 1999 PSA

TABLE 3-7
HOLIDAY PARK/BOTANICAL GARDENS
PRELIMINARY SITE ASSESSMENTS
SUMMARY OF ANALYTICAL RESULTS - BOTANICAL GARDENS - SOIL SAMPLES

Sample Location	BG-DEC-SS1*	BG-DEC-SS2*	BG-MW-1	BG-MW-2	BG-MW-3	BG-MW-4	EB-7-2	NYSDEC	Eastern USA
Sampling Depth	0-1	0-1	2-4	10-12	2-4	2-4	Drill Water Blank [2]	TAGM	Background
Collection Date	04/07/1998	04/07/1998	07/01/98	07/01/98	07/02/98	07/02/98	07/02/98	4046 [1]	Concentrations
Volatile Organic Compounds (mg/kg)									
Methylene Chloride	NA	NA			0.011 J			1	-
Acetone	NA	NA	0.110 J					0.2	-
Chloroform	NA	NA					0.009 J	0.3	-
2-Butanone	NA	NA	0.025 J					0.3	-
Bromodichloromethane	NA	NA					0.004 J	NS	-
Tetrachloroethene	NA	NA			0.001 J			1.4	-
Toluene	NA	NA					0.002 J	1.5	-
Chlorobenzene	NA	NA	0.002 J					1.7	-
Xylene (total)	NA	NA	0.002 J		0.003 J			1.2	-
Semivolatile Organic Compounds (mg/kg)									
Phenol							0.001 J	0.03	-
Naphthalene		0.64 J						13	-
Di-n-butylphthalate	1.2 JB	0.47 JB						8.1	-
Fluoranthene	0.43 J			0.044 J				50	-
Pyrene	0.36 J			0.04 J				50	-
bis(2-Ethylhexyl)phthalate	0.92 J	0.36 J		4.8 E	0.2 J	0.086 J	0.006 J	50	-
Pesticides/PCBs (mg/kg)									
None Detected	NA	NA							-

Notes:

[1] Soil Cleanup objective from NYSDEC January 24, 1994 TAGM 4046.

[2] Drill water blank concentrations in ug/L.

"-" - No cleanup objective or background concentration range in TAGM 4046.

* - Sample collected and analyzed by NYSDEC.

J - Reported value is estimated due to variance from quality control limits.

B - Analyte detected in associated blank.

NA - Parameter not included in analysis.

SB - Site Background Concentration.

Shading indicates that concentration exceeds soil cleanup objective, and the background range is used when there is no soil cleanup objective.

Blank space denotes analyte was not detected. Only compounds detected in at least one sample included in table.

TABLE 3-7
HOLIDAY PARK/BOTANICAL GARDENS
PRELIMINARY SITE ASSESSMENTS
SUMMARY OF ANALYTICAL RESULTS - BOTANICAL GARDENS - SOIL SAMPLES

Sample Location	BG-DEC-SS1*	BG-DEC-SS2*	BG-MW-1	BG-MW-2	BG-MW-3	BG-MW-4	EB-7-2	NYSDEC	Eastern USA
Sampling Depth	0-1	0-1	2-4	10-12	2-4	2-4	Drill Water Blank [2]	TAGM	Background
Collection Date	04/07/1998	04/07/1998	07/01/98	07/01/98	07/02/98	07/02/98	07/02/98	4046 [1]	Concentrations
Metals (mg/kg)									
Aluminum	NA	NA	7710	4620	15200	3790	1550 J	SB	33000
Antimony	NA	NA			0.7 B	0.56 B	3.3 B	SB	-
Arsenic	NA	NA	2.7	2.7	5.5	2.8		7.5 or SB	3 - 12
Barium	NA	NA	61.2	56.2	137	30.2 B	49.7 B	300 or SB	15 - 600
Beryllium	NA	NA	0.42 B	0.26 B	0.92 B	0.26 B		.016 or SB	0 - 1.75
Cadmium	NA	NA	0.58 B	0.67 B	1.0 B	0.68 B	3.1 B	1 or SB	0.1 - 1
Calcium	NA	NA	8350	48500	5930	2320	30600	SB	130-35000
Chromium	NA	NA	13.7	9.3	26.7	6.8	2.9 B	10 or SB	1.5 - 40
Cobalt	NA	NA	6.4 B	4.1 B	21.6	7.1 B	1.6 B	30 or SB	2.5 - 60
Copper	NA	NA	18.9	17.3	25.2	11.9	22.1 B	25 or SB	1 - 50
Iron	NA	NA	17200	11000	33900	8310	7980 J	2000 or SB	2000 - 550000
Lead	NA	NA	33.2 J		29.9 J	8.2	20.8	SB	4 - 500
Magnesium	NA	NA	6190	14300	6230	1840	9020	SB	100 - 5000
Manganese	NA	NA	331 J	435 J	570 J	574 J	549	SB	50 - 5000
Nickel	NA	NA	20	10.4	36.5	17.3	3.1 B	13 or SB	0.5-25
Selenium	NA	NA			1.4			SB	-
Silver	NA	NA	2.1 J	1.7 J	0.51 J	0.78 J	4.4 J	SB	-
Sodium	NA	NA	180 B	212 B	210 B	90.2 B	6300	SB	6000 - 8000
Vanadium	NA	NA	16	10.2	30.2	9.3	4.8 B	150 or SB	1 - 300
Zinc	NA	NA	83.5 J	59.6 J	128 J	36.6 J	145 J	20 or SB	9 - 50
Cyanide	NA	NA	1.7 B	1.3 B	2.0 B	1.2 B	6.9 B	NS	-

Notes:

[1] Soil Cleanup objective from NYSDEC January 24, 1994 TAGM 4046.

[2] Drill water blank concentrations in ug/L.

"-" - No cleanup objective or background concentration range in TAGM 4046.

* - Sample collected and analyzed by NYSDEC.

J - Reported value is estimated due to variance from quality control limits.

B - Analyte detected in associated blank.

NA - Parameter not included in analysis.

SB - Site Background Concentration.

Shading indicates that concentration exceeds soil cleanup objective, and the background range is used when there is no soil cleanup objective.

Blank space denotes analyte was not detected. Only compounds detected in at least one sample included in table.

TABLE 3-8

HOLIDAY PARK/BOTANICAL GARDENS

PRELIMINARY SITE ASSESSMENTS

SUMMARY OF ANALYTICAL RESULTS - BOTANICAL GARDENS - GROUNDWATER SAMPLES

Sample Location	BG-B2W	BG-MW-1	BG-MW-2	BG-MW-3	BG-MW-4	BG-USGS-1	BG-USGS-2	Class GA WQS [1]
Collection Date	04/07/1998	07/28/98	07/28/98	07/28/98	07/28/98	07/28/98	07/28/98	
Volatile Organic Compounds (ug/L)								
Benzene		5 J						1
Carbon Disulfide	2 J							-
Chlorobenzene		2 J						5
Semivolatile Organic Compounds (ug/L)								
4-Chloroaniline					2 J			5
bis(2-Ethylhexyl)phthalate	27							5
Pesticides/PCBs (ug/L)								
4,4-DDT				0.23 J				0.2
Metals (ug/L)								
Aluminum	40100 J	1680	3810	1370	6800	5720	2340	-
Antimony	2.2 B	4.3 B	4.7 B	3.6 B	3.1 B		3.1 B	3
Arsenic	18.1			5.3 B	5.9 B	9.2 B	8.8 B	25
Barium	481 J	480	398	72.9 B	220	468	179 B	1000
Beryllium	1.8 B				0.5 B	1.4 B		3 [2]
Cadmium	2.9 B	1.2 B	0.66 B	0.66 B	1.5 B	2.4 B	2.1 B	5
Calcium	136000	160000	159000	203000	174000		120000	-
Chromium	83.8 J	4.5 B	6.6 B	2.4 B	9.8 B	59.6 B	13.2	50
Cobalt	31.4 J	0.5 B	2.8 B	2 B	7.5 B	3.8 B	1.4 B	-
Copper	111.0	5.2 B	6.5 B	2 B	32.8		12.5 B	200
Iron	104000	40500	20600	11600	24600	82000	49400	300
Lead	251 J		4.7 J	7.8 J	22.1	143		25
Magnesium	33400	44700	43900	59700	52300	208000	30700	35000
Manganese	1310 J	871	576	418	582	6870	1330	300
Mercury	0.59 J							0.7
Nickel	76.8 J	3.2 B	5.6 B	4.7 B	17.7 B	24.6 B	12.7 B	100
Potassium	18000	14000	13900	965 B	2690 B	5570	2050 B	-
Silver	7.6 J	2.9 J	1.9 J	1.2 J	1.5 J	5.3 J	1.6 J	50
Sodium	17400	24300	27400	34800	5700	57700	13400	20000
Thallium	4.3 B							0.5 [2]
Vanadium	78.9 J	7.9 B	8.3 B	5.6 B	15.9 B	106	6.6 B	-
Zinc	598 J	46.9 J	26.9 J	40.9 J	129	200	52.9 J	2000 [2]
Cyanide	3.7 B	0.9 B	0.5 B					200

Notes:

[1] Class GA WQS - NYSDEC Water Quality Standard for Class GA Waters, from NYSDEC June 1998 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.

[2] NYSDEC Water Quality Guideline for Class GA Waters, from NYSDEC June 1998 Ambient Water Quality Standardds and Guidance Values and Groundwater Effluent Limitations.

Shading indicates that concentration exceeds Guidance Value.

Blank space denotes analyte was not detected. Only compounds detected in at least one sample included in table.

"-" - No Guidance Value or Standard available.

B - Indicates analyte result is between IDL and CRDL.

J - Reported value is estimated due to variance from quality control limits.

TABLE 3-9
HOLIDAY PARK/BOTANICAL GARDENS
PRELIMINARY SITE ASSESSMENTS
SUMMARY OF ANALYTICAL RESULTS
BOTANICAL GARDENS - SURFACE WATER/LEACHATE SAMPLES

Sample Location:	BG-SW1	BG-NYSDEC-SW-1 *	CLASS GA WQS[1]
Site:	Botanical Gardens	Botanical Gardens	
Sample Date:	04/07/1998	04/07/1998	
Volatile Organic Compounds (µg/L)			
Chlorobenzene	4 J		5
1,2-Dichloroethene (total)	8 J		5
Vinyl Chloride	7 J		2
Semivolatile Organic Compounds (µg/L)			
4-Methylphenol	1 J	97	1
Phenol		15	1
Dibenzofuran			-
bis(2-Ethylhexyl)phthalate	92 EB		5
Pesticides/PCBs (µg/L)			
None detected			
Inorganics (µg/L)			
Aluminum		720	-
Antimony	2.3 B		3
Barium	272 J	490	1000
Calcium	120000	160000	-
Cobalt	0.86 B		-
Copper		30	200
Iron	37600	76000	300
Lead		12	25
Magnesium	18000	27000	35000
Manganese	339 J	680	300
Potassium		5600	-
Silver	3.9 J		50
Sodium	16300	35000	20000
Zinc	6 B	70	2000[2]
Cyanide	2.8 B	NA	200

Notes:
[1] Class GA NYSDEC WQS - NYSDEC Water Quality Standard for Class GA Waters, from NYSDEC June 1998 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.
[2] NYSDEC Water Quality Guideline for Class GA Waters.\, from NYSDEC June 1998 Ambient Water Quality Standards and Guidance Values and Groudwater Effluent Limitations.
* - Sample collected and analyzed by NYSDEC.
"-" - No Guidance Value or standard available.
Blank space denotes analyte was not detected. Only compounds detected in at least one sample included in table.
Shading indicates that concentration exceeds standard or Guidance Value.
B - Indicates analyte result is between IDL and CRDL.
J - Reported value is estimated due to variance from quality control limits.
E - Reported value is estimated because of presence of interference.
NA - Parameter not included in analysis.

TABLE A-4

NEW YORK STATE DEPT. OF HEALTH SOIL ANALYTICAL DATA - 1992
BOTANICAL GARDENS SITE

Parameter	NYSDEC TAGM Values [1]	S-1	S-2	S-3	S-4
Pesticides/PCBs, mg/Kg					
4,4'-DDE	2.1	0.001		0.001	0.005
4,4'-DDD	2.9	0.001		0.001	0.004
4,4'-DDT	2.1	0.001		0.001	0.004
Aroclor 1016/1242	-	0.01		0.001	
Aroclor 1260	-				0.02
Aroclor 1254	-			0.001	
Inorganic Compounds, mg/Kg					
Arsenic	7.5 or SB	6.8	11	2.5	3.7
Mercury	0.1 or SB	0.1	0.15	0.04	
Beryllium	1 or SB				0.7
Barium	300 or SB	440	287	244	166
Cadmium	1 or SB		3.3		
Cobalt	30 or SB	6.2	3.8	4.8	6.7
Chromium	10 or SB	24.6	24.5	18	24.9
Copper	25 or SB	52.9	48.8	22.1	31.3
Iron	2000 or SB	132000	115000	38800	21100
Manganese	SB	249	255	191	411
Nickel	13 or SB	18.7	21.7	17.1	23.4
Strontium	-	136	84.7	52.2	56.3
Titanium	-	121	174	127	246
Vanadium	150 or SB	21.8	27.7	20.5	32.7
Zinc	20 or SB	387	267	93	117
Lead	30 or SB	63.3	64.2	38.1	65.3
Aluminum	SB	11700	13400	11100	17800
Calcium	SB	53200	21800	21200	31000
Potassium	SB	2620	3390	2550	4300
Magnesium	SB	6940	7320	6350	9700
Sodium	SB	281	290		219

Note: [1] Soil Cleanup objective from NYSDEC January 24, 1994 TAGM 4046.
Shading represents concentrations that exceeded the NYSDEC TAGM 046 Values.
Blank cells indicate analyte was not detected.
"-" - NYSDEC TAGM 4046 Value is not available.
SB - Site Background.
J - Indicates an estimated value.
B - Analyte was found in the associated blank.

TABLE A-4 (cont'd)
NEW YORK STATE DEPT. OF ENVIRONMENTAL CONSERVATION
BOTANICAL GARDENS SITE

New York State Dept. of Health Soil Analytical Data

Parameter	NYSDEC TAGM Values[1]	S-1	S-2	S-3	S-4
Volatile Organic Compounds, ug/Kg					
Acetone	200	490		230	100
Methylene Chloride	100			20	11
Chloroform	300				46
Semivolatile Organic Compounds, ug/Kg					
4-Methyl Phenol	900				2 J
2,4,5-Trichlorophenol	100				8 J
Acenaphthylene	41,000				6 J
Acenaphthene	50,000			10 J	6 J
Dibenzofuran	6200			15 J	7 J
Fluorene	50,000			27 J	14 J
Pentachlorophenol	1000				39 J
Anthracene	50,000				27 J
Phenanthrene	50,000	160 J		160 J	160 J
Fluoranthene	50,000	350 J		170 J	180 J
Pyrene	50,000	200 J		95 J	100 J
Chrysene	400				14 J
Benzo(b)fluoranthene	1100				9 J
Benzo(k)fluoranthene	1100				6 J
Benzo(a)pyrene	61				8 J
Butyl benzyl phthalate	50,000				6 J
Di-n-butyl phthalate	8100				29 J
bis(2-ethylhexyl)phthalate	50,000	190 JB		320 JB	50 JB

Note: [1] Soil Cleanup objective from NYSDEC January 24, 1994 TAGM 4046.
Shading represents concentrations that exceeded the NYSDEC TAGM 046 Values.
Blank cells indicate analyte was not detected.
"-" - NYSDEC TAGM 4046 Value is not available.
SB - Site Background.
J - Indicates an estimated value.
B - Analyte was found in the associated blank.