HILLIS-CARNES
ENGINEERING ASSOCIATES

Phase II Environmental Site Assessment
St. Elizabeth's 801 Shelter Relocation Project
Sycamore Street, SE - Washington, DC 20032
HCEA Project No. 18344B

Submitted To:

Mr. Richard Staudinger
Jacobs
901 New York Avenue NW
Washington, DC 20001

Prepared By:

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November 27, 2018

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November 27, 2018

Mr. Richard Staudinger
Jacobs
901 New York Avenue NW
Washington, DC 20001

RE: Phase II Environmental Site Assessment
St. Elizabeth's 801 Shelter Relocation Project
Sycamore Street, SE - Washington, DC 20032
HCCS Project No. 18344B

Dear Mr. Staudinger:

On behalf of Jacobs (Client), Hillis-Carnes Capitol Services (HCCS) has conducted a Phase II Environmental Site Assessment at the above-referenced property, hereafter referred to as the Site. HCCS's methodologies, findings, and resulting conclusions regarding this investigation are included in the attached report.

We appreciate the opportunity to be of service to you for this project. If you have any questions regarding information in this report or if we can be of further assistance, please contact us at (410) 880-4788.

Sincerely,
HILLIS-CARNES ENGINEERING ASSOCIATES, INC.

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1.0 GENERAL INFORMATION

1.1 Site Location and Future Plans

The Site is located on the eastern side of Martin Luther King Jr Avenue SE, approximately 450 feet northeast of the intersection of Martin Luther King Jr Avenue SE and Elm Street in Southeast, Washington DC. The Site is comprised of portions of four contiguous lots. The Site is located on the southern portion of Square 5868, Suffix S and Lot 1. Lot 1 has a street address of 2720 Martin Luther King Jr Avenue SE; however, the structure on this property is not within the Site's border. A portion of the Site is located on the northwestern corner of Square 5868, Suffix S and Lot 0831. No street address was reported as being associated with this lot. The central portion of the Site is located on the northeastern side of Square 5868, Suffix S and Lot 0830. No street address was reported as being associated with this lot. The eastern portion of the Site is located on the eastern portion of Square 5868, Suffix S and Lot 0803. No street address was reported as being associated with this lot.

Future plans for the Site include the clearing and grading of a portion of the Site and the construction of a structure to be utilized as a housing assistance center. The future structure will utilize municipal water and sanitary sewer utilities.

1.2 Background Information

HCCS completed a Phase I ESA report of the Site, dated October 15, 2018. The following information was reported in the Phase I ESA.

Based on HCCS's review of the historical records sources (for the Phase I ESA), the central area of the Site was used as a landfill that reportedly consisted of storm sewer cleanings, street sweepings, road construction debris, and incinerator fly ash. Portions of the landfill area were closed in 1983, 1987, 1988 and the remaining area closed in 1989. A 2012 assessment reported (reviewed during the Phase I ESA) that the closure consisted of an 18 to 30 inch cap. Sampling in the vicinity of the fill area was conducted in 1984 and 1985, which resulted in the detection of Chlorinated dioxins and furans in the ash fill and PCB-1260 in the pond sediments (the pond is not part of the Site as defined for HCCS's 2018 Phase I ESA). According to the 2012 assessment, additional sampling was conducted in 2008 in a form of a composite sample that was collected from the fill ash. The results from this sampling were reportedly below the RCRA hazardous waste limits for metals and semi-volatile organic compounds that were analyzed.

The future on-site building is proposed to be constructed within the area of the previous landfill. Due to the reported contamination from the 1984 and 1985 sampling and the limited sampling from the 2008 activities (one composite sample), at the conclusion of the Phase I ESA, HCCS considered the landfill area to represent an REC to the Site.

2.0 SCOPE OF WORK

- **Project Preparation**

A HCCS Environmental Project Manager was assigned to this project to manage and coordinate all tasks described in this report.

HCCS developed a site specific Health and Safety Plan (HASP) for the field activities conducted for this Phase II ESA.

The project is within the jurisdictional limits of the District of Columbia Department of Consumer Regulatory Affairs (DCRA). Therefore, as required, a DCRA drilling permit was obtained for the drilling of the soil borings.

As required by law, HCCS contacted and coordinated with MISS UTILITY at least 48 hours prior to drilling operations. It should be noted that privately owned utilities or utility lines located on the Site not in the public right-of-way may not have been covered by MISS UTILITY. Therefore, a private utility locator was contracted with to locate and mark the locations of on-site private underground utilities.

- **Geophysical Survey**

The Geophysical Survey consisted of an electromagnetic (EM) survey and a ground penetrating radar (GPR) survey was conducted by field project managers. The EM survey was conducted using an EM-31 induction meter and the GPR survey was conducted using a Sensors & Software GPR system with a 250 MHZ shielded antenna.

The EM and GPR surveys were conducted to study the existing underground conditions at the Site. EM data was collected along linear 5-foot traverses having stations at 10 readings per second. GPR measurements were also collected with survey lines located approximately five feet on-center. It should be noted that only accessible areas were surveyed. Wooded or overgrown areas were not surveyed. The GPR and EM were connected to a sub-meter GPS instrument and the anomalies (if any) were identified on a google map with one meter accuracy.

Ground-Penetrating Radar (GPR) Survey

HCCS utilized a NOGGIN™ SmartCart with a 250MHZ antenna, manufactured by Sensors and Software. The NOGGIN™ emits an electromagnetic pulse into the ground and records the echoes and then builds an image from the echoes.

Electromagnetic (EM) Survey

The EM survey was conducted using an EM-31 induction meter. The EM measures the apparent conductivity of the subsurface using the principles of electromagnetic induction. The EM consists of two horizontal coplanar loops, one acting as a transmitter and the other as a receiver. The transmitter induces eddy currents in the earth, which in turn produce a secondary field. The receiver intercepts the secondary field in which the EM measures the terrain conductivity by comparing the strength of the secondary field to that of the primary. The EM can

be used to locate USTs, UST pits, 55-gallon drums, and nonmetal debris, as well as conductive contaminant plumes.

Personnel

HCCS provided qualified and experienced individuals versed in conducting EM and GPR surveys to conduct the field survey. In addition, HCCS has a group of individuals which includes geologists, engineering geologists, and geotechnical engineers to develop and supervise the GPR investigation and interpretation of the data collected.

With the GPR survey, as applicable, HCCS has:

- Collected data utilizing a NOGGIN™ SmartCart with a 250MHZ antenna.
- Marked the locations of objects noted in the field with marking paint, if applicable.
- Processed the data collected manufactured-supplied software.
- Compiled text (in this report) outlining our findings and describing the target locations.

Survey Limitations

It should be noted that buried debris, soil type, and other site conditions may have limited the ability to detect the presence of the suspected underground structures. HCCS has made a reasonable effort to determine the subsurface conditions. However, HCCS cannot guarantee the detection of subsurface structures and cannot be held liable for any subsequent damages/fees.

- **Environmental Drilling and Sampling**

Soil Borings and Associated Soil Screening

Subsurface conditions were evaluated through direct-push sampling techniques performed in accordance with industry standards. Subsurface soils were collected at 5-foot continuous intervals by hydraulically driving a Geoprobe® dual tube soil sampling system. With this system, two sets of probe rods were used to retrieve continuous soil core samples from the subsurface. One set of rods (with a 2.25-inch outer diameter) was driven into the ground as an outer casing. These rods received the driving force from the hammer and provided a sealed casing through which soil samples may be recovered. The second smaller set of rods was placed inside the outer casing with a sample liner attached to the leading end of the rod string. These smaller rods held the liner in place as the outer casing was driven to fill the liner with soil. The inner rods were then retracted to retrieve the liner containing the resulting soil column. The soil was inspected and field screened, as described later in this report. In addition, as described later in this report, certain soil samples obtained during the field activities were collected for laboratory analyses.

HCCS advanced seven probe locations on the Site. The probes were drilled to a maximum depth of twenty (20) feet or to auger refusal, whichever was encountered first.

The exact locations and depths of the probes were determined in the field, based on the discretion of the Environmental Project Manager, and were dependent upon subsurface conditions, safety considerations and capabilities of the Geoprobe®.

The soils encountered during the drilling were inspected in the field (e.g., for odors, staining and free liquids) and were screened in the field for volatile organic compounds (VOCs) with the utilization of a photoionization detector (PID).

Six (6) soil samples (one from six of the seven borings) were collected for laboratory analysis. The soil samples were delivered to the laboratory and analyzed for Total Petroleum Hydrocarbons – Diesel Range Organics (TPH-DRO) via EPA Method 8015, Total Petroleum Hydrocarbons – Gasoline Range Organics (TPH-GRO) via EPA Method 8015, Volatile Organic Compounds (VOCs) via EPA Method 8260, Semi-Volatile Organic Compounds (SVOCs) via EPA Method 8270D, Priority Pollutant Metals by EPA Method 6020, hexavalent chromium via EPA Method7199, Total Cyanide via EPA Method 9014, Polychlorinated Biphenyl's (PCBs) via EPA Method 8082A, Dioxins & Furans via EPA Method 1613B, and full Toxicity Characteristic Leaching Procedures (TCLPs) including VOCs, SVOCs, Chlorinated Pesticides, Chlorinated Herbicides, and Metals. The selection of the samples for laboratory analyses was at the discretion of the on-site Environmental Project Manager and on the findings of the field activities (e.g., evidence of environmental impact).

Upon completion of the sampling activity, each boring location that was not converted to a subsurface soil gas probe, as described later in this report, was filled with grout.

Temporary Groundwater Monitoring Points

Groundwater was not encountered within the depths explored during HCCS's investigation; therefore, temporary groundwater monitoring points were not installed during this Phase II ESA.

Subsurface Soil Gas

Two (2) additional borings were drilled to ten (10) feet (continuous drilling, not interval drilling) in the area of the future building in order to install soil gas probes. Specifically, after the drive rod was removed, slotted PVC pipe was installed from approximately 10.0 feet bgs to approximately 9.0 feet bgs. Solid PVC pipe was installed between 9.0 feet bgs to approximately one foot above ground surface. Sand pack was installed from the bottom of the boring to approximately 8.5 feet bgs; bentonite was installed between 8.5 feet bgs and 2.0 feet bgs; and grout was installed between 2.0 feet bgs to the ground surface, creating an annular seal.

Subsequent to the placement of the slotted PVC pipe, sand pack and grout, tubing was inserted into the probe. The end of the tubing was connected to a pump (SK Sample Pump) which was utilized to purge approximately three volumes of atmospheric air from the probe. Subsequent to the purging activity, the end of the tubing was connected to Summa Canisters (one placed on the ground surface at each of the two probe locations). Each canister was equipped with a flow controller (i.e., a regulator) that allowed for "time integrated" sampling. The sampling valves of each of the Summa Canisters were opened and the "start time" of the testing period was recorded. The sampling valves on each of the Canisters remained open for an approximate 8-hour time period. At the completion of the approximate 8-hour time period, the valves on the canisters were closed. The "stop time" of the testing period was recorded. The Summa Canisters were delivered to the laboratory and the soil gas samples were analyzed for VOCs via TO-15 methodology.

Investigatory Derived Wastes

Investigation Derived Wastes (IDW) generated during this project included wastewater generated during decontamination procedures (i.e., of the drilling equipment) and soil cuttings from the Geoprobe drilling activity. In accordance with the drilling permit, HCCS drummed the cuttings from the borings. In accordance with the permit requirements, HCCS provided, filled, and left a drum on-site. Wastewater generated during decontamination procedures (i.e., the oil/water interface probe) and purge water were discharged to the ground surface.

Quality Assurance/Quality Control

The outer rods and the "shoe" of the leading rod was cleaned prior to use and between boring depths/locations to prevent cross-contamination and disposable liners were used at each location/sampling interval. In addition, at each sampling location a pair of clean, disposable gloves was utilized to collect and containerize the sample for laboratory analysis.

During the gauging activity, the oil/water interface probe was decontaminated between locations to prevent cross-contamination.

Samples collected for laboratory analyses were placed in clean laboratory-provided containers with Teflon-lined lids, labeled, placed on ice in a cooler, and delivered promptly to the laboratory. All appropriate chain-of-custody procedures were utilized to track the samples from collection to final disposition at the laboratory. The samples were analyzed using EPA methodology and within EPA's holding times.

3.0 ELECTROMAGNETIC AND GROUND PENETRATING RADAR SURVEY

The Geophysical Survey was performed at the Site on June 27, 2018 by Mr. Brett Lauer and Mr. Cullen Colman, HCCS Project Managers. The survey included the large grass area just south of the long parking lot for the City Wide Call Center and the area north of building 83 within the St. Elizabeth's campus.

- **Electromagnetic (EM) Survey**

HCCS conducted an Electromagnetic (EM) survey around the grass area and the area north of building 83. These areas are defined on the EM Location Map within Appendix B. Data was collected at 5 readings per second utilizing an Allegro CX data logger, along approximate 10-foot transverses; although due to the presence of trees and undergrowth, the northeastern portion of the Site could not be surveyed. The data logger simultaneously recorded both the quad-phase component and the in-phase component (as noted on the "Apparent Conductivity and Magnetic Susceptibility Data" within Appendix B).

The in-phase component of the induced magnetic field is significantly more sensitive to large metallic objects than the quad-phase component, which is used for ground conductivity measurements. Within the data collection, metal targets are generally recognized by anomaly signatures in the data.

As noted on the "Apparent Conductivity and Magnetic Susceptibility Data", three anomalies of unknown cause were detected during the EM survey. In addition, five additional areas were noted in the survey; however, based on the information obtained and visual observations, these additional areas were determined to be apparent utilities, wires, or reinforced concrete. The locations of the three anomalies are noted on the EM Location Maps included in Appendix B.

The first anomaly was detected along the western edge of the survey area. A second was noted on the southern portion of the survey, and a third area was located on the northern central portion of the survey area. These areas appeared to be located within areas of historic demolition and foundation locations. No other significant anomalies were noted during this investigation.

- **Ground Penetration Radar (GPR) Survey**

As previously mentioned, the GPR survey of the specified area was conducted utilizing the 2D survey method with the NOGGIN™ system. The survey lines collected in the field were laid-out relative to the best fit case based on Site geometry. As such, the primary lines were oriented east to west. GPR scans of the areas selected for surveying were completed with singular survey lines numbered 0 through 17. These survey lines were collected in order to adequately cover the portions of the survey scanned by the Electromagnetic (EM) survey. Refer to the attached GPR Line Survey Location Plans included in Appendix B.

- **Conclusion**

Based upon the EM/GPR data, evidence of USTs was not apparent in the areas selected for the survey. The anomalies observed during the EM and GPR surveys are illustrated on the attached scans (Appendix B); however, due to the size and depth of the anomalies, they do not appear to be buried USTs. The evidence observed of the anomalies more closely resembles potential utilities or debris; however, the potential for a UST in the areas to the north of building

83 could not be eliminated. In addition, it appears that the survey area generally consists of near surface fill materials with evidence of existing utility lines.

4.0 SOIL SAMPLING PROGRAM

The advancement of borings was performed at the Site on October 24 and 25, 2018, by Mr. Robert Pushman, HCCS's Environmental Project Manager.

Probes were advanced at seven (7) on-site locations on the Site. The probe locations are identified as P-1 through P-7. The sample locations are illustrated on the Sample Location Plan (Figure 1) included in this report.

Saturated soils or groundwater were not encountered within the depths explored in each of the probes. In addition, PID readings, discolored soil, and odors were not observed. With the exception of P-1, one soil sample from each of the borings was collected for laboratory analyses. The samples collected were placed in clean, laboratory-provided containers, labeled, placed in a cooler, packaged for transport, and delivered to the laboratory. The following Table 1 includes additional information pertaining to the probes.

Table 1 - Conditions Encountered During Drilling of Environmental Soil Probes
3255 Prospect Street, NW, Washington, D.C.

Probe Designation	Depth Interval (feet below ground surface)	Soils	Depth Interval of Sample Collected for Laboratory Analyses (feet bgs) *
P-1	0-5	Clayey sand and gravel (Fill)	None collected (due to poor recovery of soil in liners and auger refusal)
	5-6 (probe refusal)	Black silty sand and gravel (Fill)	
P-2	0-5	Clayey sand and gravel (Fill)	15-20
	5-10	Black silty sand and gravel (Fill)	
	10-20	Clay (FILL)	
P-3	0-5	Clayey sand and gravel (Fill)	5-10
	5-10	Black silty sand and gravel (Fill)	
	10-20	Clay (Fill)	
P-4	0-7	Clayey sand and gravel (Fill)	Due to minimum soil recovery, a composite soil sample was collected from depths 5 feet through 20 feet
	7-18	Black silty sand and gravel (Fill)	
	18-20	Silty sand and gravel (Fill)	
P-5	0-6	Clayey sand and gravel (Fill)	10-15
	6-7	Black silty sand and gravel (Fill)	
	7-10	Clay (Fill)	
	10-15	Silty sand and gravel (Fill)	
	15-20	Clay (Fill)	

P-6	0-20	Clay	15-20
P-7	0-5	Clay (Fill)	5-10
	5-12	Silty sand (Possible Fill)	
	12-20	Clay	

The samples selected for laboratory analyses were transported to and analyzed by Maryland Spectral Services, Inc., located in Baltimore, Maryland. A copy of the completed Chain-of-Custody Form and the Laboratory Report is included in Appendix A.

As previously reported, six soil samples were selected for laboratory analysis. All six soil samples were laboratory analyzed for Total Petroleum Hydrocarbons – Diesel Range Organics (TPH-DRO) via EPA Method 8015, Total Petroleum Hydrocarbons – Gasoline Range Organics (TPH-GRO) via EPA Method 8015, Volatile Organic Compounds (VOCs) via EPA Method 8260, Semi-Volatile Organic Compounds (SVOCs) via EPA Method 8270D, Priority Pollutant Heavy Metals by EPA Method 6020, hexavalent chromium via EPA Method7199, Total Cyanide via EPA Method 9014, Polychlorinated Biphenyl's (PCBs) via EPA Method 8082A, Dioxins & Furans via EPA Method 1613B, and full Toxicity Characteristic Leaching Procedure (TCLP) including VOCs, SVOCs, Chlorinated Pesticides, Chlorinated Herbicides, and Priority Pollutant Metals.

The laboratory results are summarized in the Soil Laboratory Results Table (LRT) included in Appendix C of this report. As indicated in the table, TPH-GRO, PCBs, and TCLP SVOCs, TCLP VOCs, TCLP Pesticides, and TCLP Herbicides were not detected in any of the six soil samples at concentrations above the laboratory's practical quantitation limit.

For comparative purposes only, HCCS compared concentrations of constituents detected with the EPA Regional Screening Levels (RSLs) for residential properties. Also included in the LRT, are the RSLs for industrial properties. In addition, where a RSL is not presented, HCCS utilized District of Columbia Municipal Regulations (DCMR) Title 20 Section 6208 (i.e., Tier 0 Standards). It should be noted that HCCS is including the industrial RSL/Tier 0 Standards for reference only and these standards are not discussed in the text of this report.

As summarized in the LRT and below, the laboratory analysis revealed the presence ofTPH-DRO, certain Priority Pollutant Metals, certain TCLP Metals, a SVOC, Total Cyanide, and Dioxins and Furans in one or more of the samples analyzed.

Priority Pollutant Metals

As indicated in the LRT, certain metals were detected within each of the six samples. With the exception or arsenic and hexavalent chromium, each of the concentrations detected were below the Standards presented.

Arsenic

With regard to arsenic, with the exception of P-2, the concentrations of arsenic revealed in probes (i.e., P-3 through P-7) exceeded the Residential RSL of 100 parts per million (ppm).

With further regard to arsenic, HCCS compared the concentrations of arsenic detected with Maryland's Anticipated Typical Concentrations (ATCs, or "naturally-occurring" concentrations of metals in soils) that are presented in the MDE's Cleanup Standards for Soil and Groundwater (June 2008), hereafter referred to as the MDE Cleanup Standard Guidance Document. The ATCs were developed from ten years of investigations at properties around the state of Maryland and indicate typical levels of metals that naturally occur in soils. The MDE Cleanup Standard Guidance Document presents ATCs for three regions across Maryland (i.e., Western Maryland, Central Maryland and Eastern Maryland). When compared with the location of the three regions, the Site's location in the eastern portion of Washington D.C. appears to correlate with the Eastern Maryland Region. Therefore, based on the location of the Site (i.e. Southeast, Washington D.C.), HCCS utilized the ATCs reported in the Eastern Maryland region for comparative purposes.

In addition to the ATCs listed above, HCCS included the reference levels of the United States Geologic Survey (USGS) background metal concentrations in native soil for the Conterminous United States. According to the MDE Cleanup Standard Guidance Document, "comparison of the reference levels to the background metal concentrations… indicates a good correlation exists between the data sets" (i.e., the MDE's data sets to calculate the ATC's and the USGS data sets to calculate background levels).

The ATC for arsenic in the Eastern Maryland region is 3.6 parts per million (ppm). The ATC for arsenic in the Eastern Region is calculated based on the results of 76 soil samples with arsenic concentrations ranging between 0.12 ppm and 6.9 ppm.

- The arsenic concentrations in P-5, P-6, and P-7 (i.e., 2.54, 3.13, and 2.19 ppm, respectively) did not exceed the ATC for arsenic in Eastern Maryland (3.6 ppm).

- The arsenic concentrations in P-3 and P-4 (3.73 ppm, 4.2 ppm) did not exceed the background level (4.8 ppm) for arsenic in soils in the Eastern Portion of the United States, according to the USGS. In addition, the concentrations did not exceed the maximum concentration of arsenic (i.e., 6.9 ppm) utilized by the MDE to calculate the ATC for arsenic in Eastern Maryland.

Hexavalent Chromium

With regard to hexavalent chromium, hexavalent chromium was detected in P-2 at a concentration of 4.34 ppm. This concentration is greater than the Residential RSL (i.e., 0.3 ppm).

TCLP Metals

As indicated in the LRT, TCLP for Barium and Lead were detected in P-3. TCLP Metals were not detected at concentrations above the laboratory's practical quantitation limit in any of the other probes. The concentrations detected in P-3 (i.e., 0.731 ppm for barium and 1.46 ppm for lead) are less than the Residential RSLs (i.e., 100,000 ppm and 5.0 ppm, respectively).

TPH-DRO

As indicated in the LRT, TPH-DRO was detected in P-3 and P-4. TPH-DRO was not detected at concentrations above the laboratory's practical quantitation limit in any of the other probes. The concentrations detected in P-3 (i.e., 101 ppm) and P-4 (i.e., 1,390 ppm) are higher than the Residential RSL (i.e., 100 ppm).

SVOCs

As indicated in the LRT, the SVOC – Bis (2-ethylhexyl) phthalate was detected in P-3. Additional SVOCs were not detected at concentrations above the laboratory's practical quantitation limit in any of the other probes. The concentration of Bis (2-ethylhexyl) phthalate detected in P-3 (i.e., 0.321 ppm) is less than the Residential RSL (i.e., 39.0 ppm).

Total Cyanide

As indicated in the LRT, cyanide was detected in P-6. Cyanide was not detected at concentrations above the laboratory's practical quantitation limit in any of the other probes. The concentration of cyanide detected in P-6 (i.e., 0.42 ppm) is less than the Residential RSL (i.e., 23.0 ppm).

Dioxins and Furans

As indicated in the LRT, at least one dioxin and/or furan were detected within each of the six samples. With the exception or P-3 and P-4, each of the dioxins concentrations detected are below the Standards presented (that is, where a standard is presented). Each of the furans concentrations detected are below the Standards presented.

With regard to P-3 and P-4, the dioxin 2378-TCDD was detected in P-3 at a concentration of 14.0 ppm which exceeds the Residential RSL of 4.8 ppm; the dioxin Total HxCDD was detected in P-3 and P-4 at concentrations of 510 ppm and 260 ppm, respectively, which exceeds the Residential RSL of 100 ppm.

5.0 SUB-SURFACE SOIL GAS SAMPLING PROGRAM

The sub-surface soil gas sampling took place on October 25, 2018. As previously reported, sub-surface soil gas samples were collected from two on-site locations. The sub-surface soil gas samples are identified as G-1 and G-2. Both soil gas probes were located within the proposed building location. The sampling methodology has been described in Section 2.0 of this report.

The soil gas samples collected for laboratory analysis were transported to and analyzed by Maryland Spectral Services located in Baltimore, Maryland. A copy of the completed Chain-of-Custody Form and the Laboratory Report is attached to this letter report.

The two soil gas samples collected for this project were analyzed for Volatile Organic Compounds (VOCs) via TO-15 methodology. The laboratory results for the soil gas samples are provided in the below.

Table 2 – Sub-Surface Soil Gas Sample Results – VOCs
Results and Standards are presented in micrograms per cubic meter (ug/m^3)

	SG-1	SG-2	EPAs RSL		RSL "Adjusted" for Attenuation	
			CTR	NHI	CTR	NHI
VOCs						
Benzene	2.3 J	2.3 J	0.36	3.1	12	103.3
Carbon disulfide	20.3	6.85	NS	73	NS	2.4×10^3
Chloromethane	0.83 J	0.91 J	NS	9.4	NS	313.3
Cyclohexane	115	9.09	NS	630	NS	2.1×10^4
n-Heptane	115	3.61	NS	42	NS	1.4×10^3
2-Hexanone	90.1	115	NS	3.1	NS	103.3
Methyl ethyl ketone (2-Butanone)	1460 E	1630 E	NS	520	NS	1.7×10^4
Toluene	3.92	3.17	NS	520	NS	1.7×10^4
Trichloroethene	1.29 J	ND	NS	NS	NS	NS
2,2,4-Trimethylpentane	247	389	NS	100	NS	3.3×10^3
Vinyl chloride	1.12 J	0.51 J	0.17	10	5.67	333.3
Remaining VOCs	ND	ND	Varies		Varies	

EPAs RSL = EPAs Regional Screening Level Resident Ambient Air Table (2017).

RSL Adjusted for Attenuation is the RSL divided by 0.03. According to the June 2015 "Technical Guide for Assessing and Mitigation the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air" published by the EPA's Office of Solid Waste and Emergency Response, 0.03 is the "Attenuation Factor" (AF) recommended by the EPA to calculate estimated concentrations of VOCs in ambient air based on the VOC concentration obtained from a sub-surface soil gas sample.

CTR = Carcinogenic Target Risk

NHI = Noncancer Hazard Index

ND = Not detected at a concentration greater than or equal to the laboratory practical quantitation limit.

NS = No Screening Level exists for the constituent in the Standard utilized.

J = Detected but below reporting limit; therefore result is an estimated concentration.

E = The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.

The EPA's Regional Screening Level (RSL) Resident Ambient Air Table was utilized for comparison purposes only. As seen in Table 2, the EPA's RSL for Carcinogenic Target Risk (CTR) and the Noncancer Hazard Index (NHI) are provided. Additionally, The RSLs adjusted for Attenuation Factor (AF) of 0.03 are presented for both CTR and NHI, where applicable.

It is reasonable to apply an attenuation factor when interpreting sub-surface gas data due to the expectation that VOC concentrations in the sub-surface environment would decrease (i.e., attenuate) if the VOC migrates from the sub-surface environment into the ambient air.

As seen above, a total of 11 VOCs were detected in one or both of the sub-surface soil gas samples analyzed. They are discussed as follows:

- RSLs are not presented for one of the VOCs detected (i.e., trichloroethene); however, the concentration detected could only be estimated by the laboratory and is therefore considered extremely minimal.

- For four of the VOCs detected (i.e., carbon disulfide, chloromethane, cyclohexane, and toluene), the concentrations detected in the sub-surface soil gas samples do not exceed the RSLs (and also do not exceed the RSLs adjusted for attenuation) for each of the respective VOCs.

- For five of the VOCs detected (i.e., benzene, n-heptane, Methyl ethyl ketone, 2,2,4-trimethylpentane, and vinyl chloride), the concentrations of these VOCs in one or both of the sub-surface soil gas samples exceed the RSLs; however, the concentrations do not exceed the RSLs adjusted for attenuation.

- With regard to the remaining VOC detected in both sub-surface soil gas samples (i.e., 2-hexanone), the concentrations exceed the RSL. However, only one of the sub-surface soil gas samples (i.e., G-2) exceed the RSL adjusted for attenuation, specifically the adjusted RSL for Noncancer Hazard Index. It can be noted that this concentration of 2-hexanone (i.e., 115 ug/m^3) on slightly exceeded the adjusted RSL for Noncancer Hazard Index (i.e., 103.3 ug/m^3).

6.0 SUMMARY

HCCS has completed the Phase II ESA at the property located at Sycamore Street, SE - Washington, D.C. 20032. Specifically, a Geophysical Survey (i.e., a GPR and an EM Survey) was initially conducted. Based on the results of the Geophysical Survey, a UST did not appear to be located within the areas tested. Subsequent to the Geophysical Survey, seven (7) probes were advanced throughout the Site. At each of the locations, the soils were inspected for evidence of environmental impact (e.g., staining, odors, elevated PID readings, etc.). Six (6) soil samples were submitted to a laboratory for environmental analyses. In addition, two (2) additional locations were selected in the area of the proposed building footprint and sub-surface soil gas was collected via the use of Summa Canisters.

Saturated soils and/or groundwater were not encountered at the depths of the probes. Therefore, groundwater samples could not be collected as part of this assessment.

Evidence of impacted soils was not apparent during the probing activity (i.e., no odors or staining were observed), However, a relatively small layer of black silty sand was observed in most of the probes. In addition, PID readings were not detected in the soil intervals screened during the probing activity. Further, laboratory analyses of the soil samples did not reveal the presence of TPH-GRO, PCBs, and TCLP SVOCs, VOCs, TCLP VOCs, TCLP pesticides, and TCLP herbicides at concentrations exceeding the laboratory's practical quantitation limit. However, certain Priority Pollutant Metals including Hexavalent Chromium, certain TCLP Metals, certain SVOCs, Total Cyanide, and Dioxins and Furans were detected in one or more of the soil samples analyzed. With the exception of Hexavalent Chromium, TPH-DRO, and certain Dioxins, the concentrations detected were below the screening level standards utilized (as reported in Section 4.0). The concentrations of Hexavalent Chromium in P-2, TPH-DRO in P-3 and P-4, and certain Dioxins in P-3 and P-4 were above the screening level standards utilized (as reported in Section 4.0).

Based on the findings of the Phase II ESA with regard to the soil encountered, sampled, and laboratory analyzed, elevated concentrations of certain constituents were generally detected in probes P-2 through P-4; however, evidence of significant widespread contamination in the soil at the Site was not revealed in the remaining areas investigated (i.e., P-5 through P-7).

With regard to the sub-surface soil gas samples collected at the Site, certain VOCs were detected (as detailed in Section 5.0) and based on the urban nature of the Site and vicinity, the presence of VOCs in the sub-surface gas environment is not unexpected. It is HCCS's opinion that the Client should consider the installation of engineering controls in association with the construction of the future on-site building to mitigate the migration of VOCs in the subsurface into the ambient air of the future building. Such engineering controls could include the installation of a vapor barrier in the subsurface and the installation of a sub-surface depressurization/venting system.

7.0 LIMITATIONS

Our professional services have been performed, our findings obtained, and our conclusions prepared in accordance with customary principles and practices in the field of environmental science. This report does not warrant against future operations or conditions, nor does it warrant against conditions present of a type or at locations not investigated.

This report was prepared for the sole use of our Client. The scope of services performed for this assessment may not be appropriate to satisfy the needs of other users, and use or re-use of this document or the findings or conclusions is at the risk of said user.

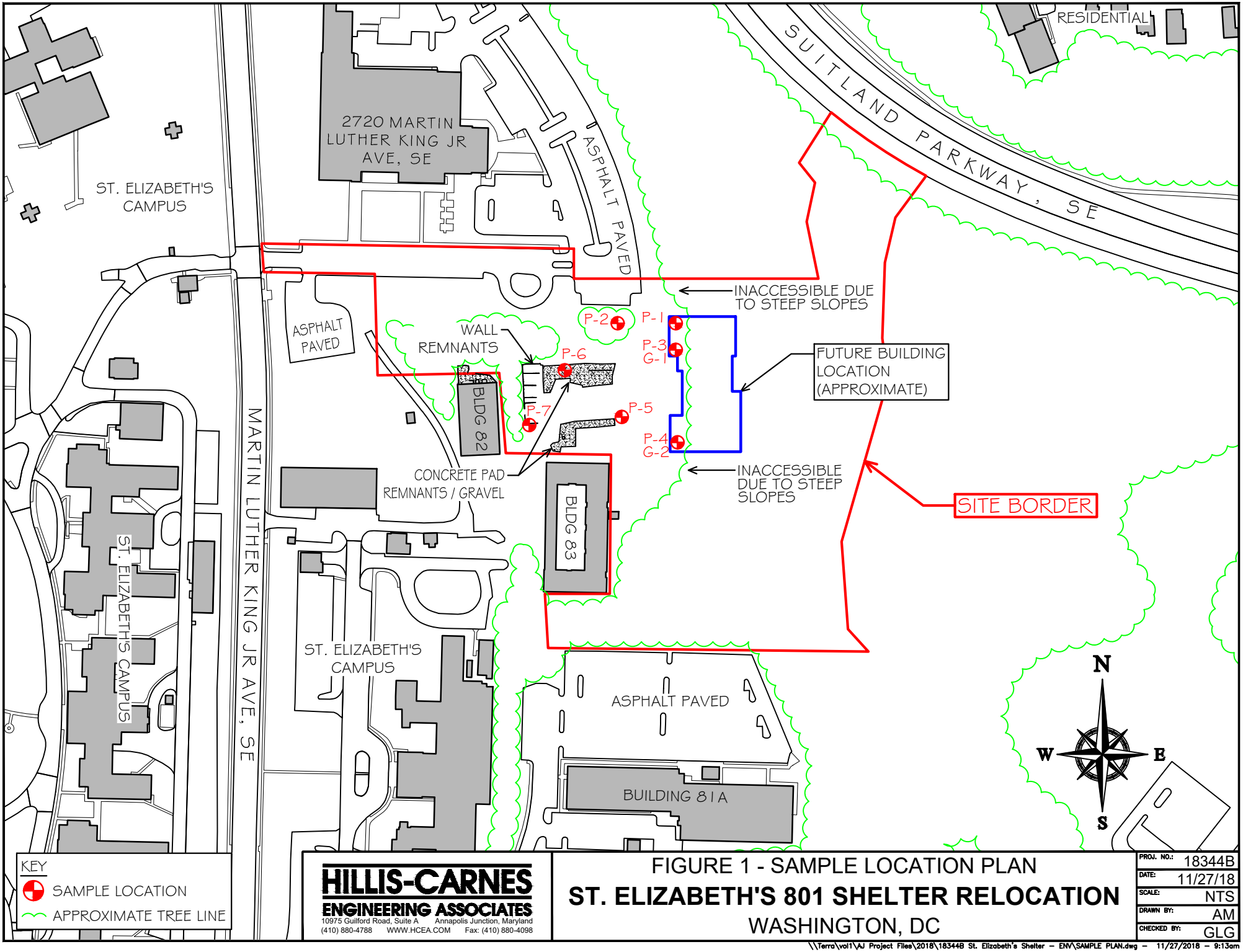
An evaluation of the legal obligations of our Client and/or other parties (e.g., an owner of a Site) to report the findings of subsurface investigations to environmental regulators are beyond the scope of this project. Therefore, in this report, HCCS has not rendered an opinion or provided professional advice regarding reporting obligations, if any, as they may pertain to the findings of this environmental investigation.

The conclusions drawn from this assessment are considered reliable; however, there may exist localized variations in the subsurface conditions that have not been completely defined at this time. In addition, a determination of the source(s) of the environmental impact detected at the Site is beyond the scope of services conducted for this project.

The samples delivered to the analytical laboratory for this project will be retained by the laboratory for thirty (30) days from the date that the samples were received by the laboratory. After 30 days, the laboratory will dispose of the samples. Therefore, if analyses in addition to those presented in this proposal are desired, a request for the additional analyses must be made prior to the expiration of the laboratory's 30-day sample retention policy. Further, although the laboratory retains samples for 30 days, it should be noted that regulatory "holding times" for certain laboratory analyses are less than 30 days.

The standards utilized (e.g., EPAs RSL, D.C.s Tier 0 Standard, etc.) are examples of resources that can be utilized to provide some context with regard to laboratory results for samples analyzed for environmental contaminants. HCCS's discussion of the standards presented in this document is not meant to imply that other standards/comparative numbers may not be applicable.

Figures



HILLIS-CARNES ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A Annapolis Junction, Maryland
(410) 880-4788 WWW.HCEA.COM Fax: (410) 880-4098

FIGURE 1 - SAMPLE LOCATION PLAN

ST. ELIZABETH'S 801 SHELTER RELOCATION

WASHINGTON, DC

PROJ. NO.:	18344B
DATE:	11/27/18
SCALE:	NTS
DRAWN BY:	AM
CHECKED BY:	GLG

\\Terra\vol1\AJ Project Files\2018\18344B St. Elizabeth's Shelter – ENV\SAMPLE PLAN.dwg – 11/27/2018 – 9:13am

Appendix A

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

13 November 2018

Robert Pushman
HILLIS-CARNES ENGINEERING ASSOCIATES
10975 Guilford Rd
Annapolis Junction, MD 20701
RE: St. Elizabeths 801 Shelter

Enclosed are the results of analyses for samples received by the laboratory on 10/26/18 14:00.

Maryland Spectral Services, Inc. is a TNI 2009 Standard accredited laboratory and as such, all analyses performed at Maryland Spectral Services included in this report are 2009 TNI certified except as indicated at the end of this report. Please visit our website at www.mdspectral.com for a complete listing of our TNI 2009 Standard accreditations.

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

Sincerely,

Cory Koons
Laboratory Manager

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
P-2		8102623-01	Soil	10/25/18 10:10	10/26/18 14:00
P-3		8102623-02	Soil	10/25/18 11:45	10/26/18 14:00
P-4		8102623-03	Soil	10/25/18 13:40	10/26/18 14:00
P-5		8102623-04	Soil	10/26/18 08:30	10/26/18 14:00
P-6		8102623-05	Soil	10/26/18 09:45	10/26/18 14:00
P-7		8102623-06	Soil	10/26/18 10:50	10/26/18 14:00

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Cory Koons, Laboratory Manager

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-2

8102623-01 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)									
Acetone	ND		ug/kg dry	12.2	12.2	1	10/30/18	10/30/18 16:54	GM
tert-Amyl alcohol (TAA)	ND		ug/kg dry	61.0	61.0	1	10/30/18	10/30/18 16:54	GM
tert-Amyl methyl ether (TAME)	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Benzene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Bromobenzene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Bromochloromethane	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Bromodichloromethane	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Bromoform	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Bromomethane	ND		ug/kg dry	6.1	6.1	1	10/30/18	10/30/18 16:54	GM
tert-Butanol (TBA)	ND		ug/kg dry	61.0	61.0	1	10/30/18	10/30/18 16:54	GM
2-Butanone (MEK)	ND		ug/kg dry	12.2	12.2	1	10/30/18	10/30/18 16:54	GM
n-Butylbenzene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
sec-Butylbenzene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
tert-Butylbenzene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Carbon disulfide	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Carbon tetrachloride	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Chlorobenzene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Chloroethane	ND		ug/kg dry	6.1	6.1	1	10/30/18	10/30/18 16:54	GM
Chloroform	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Chloromethane	ND		ug/kg dry	6.1	6.1	1	10/30/18	10/30/18 16:54	GM
2-Chlorotoluene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
4-Chlorotoluene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
1,2-Dibromo-3-chloropropane	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Dibromochloromethane	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
1,2-Dibromoethane (EDB)	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Dibromomethane	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
1,2-Dichlorobenzene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
1,3-Dichlorobenzene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
1,4-Dichlorobenzene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Dichlorodifluoromethane	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
1,1-Dichloroethane	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
1,2-Dichloroethane	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
1,1-Dichloroethene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM

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Cory Koons, Laboratory Manager

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-2

8102623-01 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
cis-1,2-Dichloroethene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
trans-1,2-Dichloroethene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Dichlorofluoromethane	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
1,2-Dichloropropane	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
1,3-Dichloropropane	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
2,2-Dichloropropane	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
1,1-Dichloropropene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
cis-1,3-Dichloropropene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
trans-1,3-Dichloropropene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Diisopropyl ether (DIPE)	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Ethyl tert-butyl ether (ETBE)	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Ethylbenzene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Hexachlorobutadiene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
2-Hexanone	ND		ug/kg dry	12.2	12.2	1	10/30/18	10/30/18 16:54	GM
Isopropylbenzene (Cumene)	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
4-Isopropyltoluene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
4-Methyl-2-pentanone	ND		ug/kg dry	12.2	12.2	1	10/30/18	10/30/18 16:54	GM
Methylene chloride	ND		ug/kg dry	24.4	24.4	1	10/30/18	10/30/18 16:54	GM
Naphthalene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
n-Propylbenzene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Styrene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
1,1,1,2-Tetrachloroethane	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
1,1,2,2-Tetrachloroethane	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Tetrachloroethene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Toluene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
1,2,3-Trichlorobenzene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
1,2,4-Trichlorobenzene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
1,1,1-Trichloroethane	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
1,1,2-Trichloroethane	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Trichloroethene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Trichlorofluoromethane (Freon 11)	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
1,2,3-Trichloropropane	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM

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Cory Koons, Laboratory Manager

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-2

8102623-01 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
1,2,4-Trimethylbenzene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
1,3,5-Trimethylbenzene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Vinyl chloride	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
o-Xylene	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
m- & p-Xylenes	ND		ug/kg dry	6.1	2.4	1	10/30/18	10/30/18 16:54	GM
Surrogate: 1,2-Dichloroethane-d4			*70-130*	*87 %*		*10/30/18*		*10/30/18 16:54*	
Surrogate: Toluene-d8			*75-120*	*89 %*		*10/30/18*		*10/30/18 16:54*	
Surrogate: 4-Bromofluorobenzene			*65-120*	*101 %*		*10/30/18*		*10/30/18 16:54*	
SEMIVOLATILE ORGANICS BY EPA METHOD 3540/8270D (GC/MS)									
Acenaphthene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Acenaphthylene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Anthracene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Benzo[a]anthracene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Benzo[b]fluoranthene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Benzo[k]fluoranthene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Benzo[ghi]perylene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Benzo[a]pyrene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
4-Bromophenyl phenyl ether	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Butyl benzyl phthalate	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Carbazole	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
4-Chloro-3-methylphenol	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
4-Chloroaniline	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Bis(2-chloroethoxy)methane	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Bis(2-chloroethyl) ether	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
2,2'-Oxybis(1-Chloropropane)	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
2-Chloronaphthalene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
2-Chlorophenol	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
4-Chlorophenyl phenyl ether	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Chrysene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Di-n-butyl phthalate	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Di-n-octyl phthalate	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Dibenzo[a,h]anthracene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Dibenzofuran	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB

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Cory Koons, Laboratory Manager

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-2

8102623-01 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
SEMIVOLATILE ORGANICS BY EPA METHOD 3540/8270D (GC/MS) (continued)									
1,2-Dichlorobenzene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
1,3-Dichlorobenzene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
1,4-Dichlorobenzene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
3,3-Dichlorobenzidine	ND		ug/kg dry	610	610	1	11/02/18	11/05/18 11:51	WB
2,4-Dichlorophenol	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Diethyl phthalate	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Dimethyl phthalate	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
2,4-Dimethylphenol	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
2-Methyl-4,6-dinitrophenol	ND		ug/kg dry	1520	1520	1	11/02/18	11/05/18 11:51	WB
2,4-Dinitrophenol	ND		ug/kg dry	1520	1520	1	11/02/18	11/05/18 11:51	WB
2,4-Dinitrotoluene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
2,6-Dinitrotoluene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Bis(2-ethylhexyl) phthalate	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Fluoranthene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Fluorene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Hexachlorobenzene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Hexachlorobutadiene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Hexachlorocyclopentadiene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Hexachloroethane	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Indeno[1,2,3-cd]pyrene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Isophorone	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
2-Methylnaphthalene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
3&4-Methylphenol	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
2-Methylphenol	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
N-Nitroso-di-n-propylamine	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
N-Nitrosodiphenylamine	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Naphthalene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
2-Nitroaniline	ND		ug/kg dry	1520	1520	1	11/02/18	11/05/18 11:51	WB
3-Nitroaniline	ND		ug/kg dry	1520	1520	1	11/02/18	11/05/18 11:51	WB
4-Nitroaniline	ND		ug/kg dry	1520	1520	1	11/02/18	11/05/18 11:51	WB
Nitrobenzene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
2-Nitrophenol	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
4-Nitrophenol	ND		ug/kg dry	1520	1520	1	11/02/18	11/05/18 11:51	WB

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-2

8102623-01 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
SEMIVOLATILE ORGANICS BY EPA METHOD 3540/8270D (GC/MS) (continued)									
Pentachlorophenol	ND		ug/kg dry	1520	1520	1	11/02/18	11/05/18 11:51	WB
Phenanthrene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Phenol	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Pyrene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
1,2,4-Trichlorobenzene	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
2,4,5-Trichlorophenol	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
2,4,6-Trichlorophenol	ND		ug/kg dry	305	122	1	11/02/18	11/05/18 11:51	WB
Surrogate: 2-Fluorophenol			*50.4-106.9*	*71 %*	*11/02/18*		*11/05/18 11:51*		
Surrogate: Phenol-d5			*57.1-102.9*	*75 %*	*11/02/18*		*11/05/18 11:51*		
Surrogate: Nitrobenzene-d5			*65.4-105.8*	*72 %*	*11/02/18*		*11/05/18 11:51*		
Surrogate: 2,4,6-Tribromophenol			*40.2-120.7*	*82 %*	*11/02/18*		*11/05/18 11:51*		
Surrogate: 2-Fluorobiphenyl			*59.7-107.6*	*73 %*	*11/02/18*		*11/05/18 11:51*		
Surrogate: Terphenyl-d14			*70-131*	*92 %*	*11/02/18*		*11/05/18 11:51*		
GASOLINE RANGE ORGANICS BY EPA 5030/8015C									
Gasoline-Range Organics	ND		mg/kg dry	0.12	0.12	1	10/31/18	10/31/18 14:15	GM
DIESEL RANGE ORGANICS BY EPA 3540/8015C									
Diesel-Range Organics	ND		mg/kg dry	9.8	9.8	1	11/01/18	11/02/18 22:39	SJA
Surrogate: o-Terphenyl			*70-130*	*76 %*	*11/01/18*		*11/02/18 22:39*		
PERCENT SOLIDS BY ASTM D2216-05									
Percent Solids	**82**		%			1	11/05/18	11/06/18 10:02	KD
POLYCHLORINATED BIPHENYLS BY EPA 3540/8082 (GC/ECD)									
Aroclor-1016	ND		ug/kg dry	101	101	1	11/02/18	11/06/18 04:15	SJA
Aroclor-1221	ND		ug/kg dry	207	207	1	11/02/18	11/06/18 04:15	SJA
Aroclor-1232	ND		ug/kg dry	101	101	1	11/02/18	11/06/18 04:15	SJA
Aroclor-1242	ND		ug/kg dry	101	101	1	11/02/18	11/06/18 04:15	SJA
Aroclor-1248	ND		ug/kg dry	101	101	1	11/02/18	11/06/18 04:15	SJA
Aroclor-1254	ND		ug/kg dry	101	101	1	11/02/18	11/06/18 04:15	SJA
Aroclor-1260	ND		ug/kg dry	101	101	1	11/02/18	11/06/18 04:15	SJA
Aroclor-1262	ND		ug/kg dry	101	101	1	11/02/18	11/06/18 04:15	SJA
Aroclor-1268	ND		ug/kg dry	101	101	1	11/02/18	11/06/18 04:15	SJA
Surrogate: Tetrachloro-m-xylene			*40-150*	*91 %*	*11/02/18*		*11/06/18 04:15*		
Surrogate: Decachlorobiphenyl			*40-150*	*71 %*	*11/02/18*		*11/06/18 04:15*		

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-2

8102623-01 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS BY EPA 3050B/6020A									
Antimony	ND		mg/kg dry	0.305	0.305	1	10/29/18	10/31/18 20:20	CMK
Arsenic	**0.420**		mg/kg dry	0.305	0.305	1	10/29/18	10/31/18 20:20	CMK
Beryllium	**1.05**		mg/kg dry	0.305	0.305	1	10/29/18	10/31/18 20:20	CMK
Cadmium	ND		mg/kg dry	0.305	0.305	1	10/29/18	10/31/18 20:20	CMK
Chromium	**25.4**		mg/kg dry	0.305	0.305	1	10/29/18	10/31/18 20:20	CMK
Copper	**19.6**		mg/kg dry	0.305	0.305	1	10/29/18	10/31/18 20:20	CMK
Lead	**8.43**		mg/kg dry	0.305	0.305	1	10/29/18	10/31/18 20:20	CMK
Mercury	ND		mg/kg dry	0.0152	0.0152	1	10/29/18	10/31/18 20:20	CMK
Nickel	**5.10**		mg/kg dry	0.305	0.305	1	10/29/18	10/31/18 20:20	CMK
Selenium	**0.954**		mg/kg dry	0.305	0.305	1	10/29/18	10/31/18 20:20	CMK
Silver	ND		mg/kg dry	0.305	0.305	1	10/29/18	10/31/18 20:20	CMK
Thallium	ND		mg/kg dry	0.305	0.305	1	10/29/18	10/31/18 20:20	CMK
Zinc	**8.13**		mg/kg dry	1.52	1.52	1	10/29/18	10/31/18 20:20	CMK
TCLP VOLATILE ORGANICS BY EPA METHODS 1311/8260B (GC/MS)									
Benzene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 20:28	GM
2-Butanone (MEK)	ND		ug/L	50.0	50.0	5	11/03/18	11/03/18 20:28	GM
Carbon tetrachloride	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 20:28	GM
Chlorobenzene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 20:28	GM
Chloroform	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 20:28	GM
1,4-Dichlorobenzene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 20:28	GM
1,2-Dichloroethane	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 20:28	GM
1,1-Dichloroethene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 20:28	GM
Tetrachloroethene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 20:28	GM
Trichloroethene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 20:28	GM
Vinyl chloride	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 20:28	GM
Surrogate: 1,2-Dichloroethane-d4			*70-121*	*96 %*	*11/03/18*		*11/03/18 20:28*		
Surrogate: Toluene-d8			*84-138*	*97 %*	*11/03/18*		*11/03/18 20:28*		
Surrogate: 4-Bromofluorobenzene			*59-113*	*102 %*	*11/03/18*		*11/03/18 20:28*		

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-2

8102623-01 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
TCLP SEMIVOLATILE ORGANICS BY EPA METHODS 1311/8270D (GC/MS)									
1,4-Dichlorobenzene	ND		ug/L	25.0	25.0	1	10/30/18	10/31/18 14:48	WB
2,4-Dinitrotoluene	ND		ug/L	25.0	25.0	1	10/30/18	10/31/18 14:48	WB
Hexachlorobenzene	ND		ug/L	25.0	25.0	1	10/30/18	10/31/18 14:48	WB
Hexachlorobutadiene	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 14:48	WB
Hexachloroethane	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 14:48	WB
3&4-Methylphenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 14:48	WB
2-Methylphenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 14:48	WB
Nitrobenzene	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 14:48	WB
Pentachlorophenol	ND		ug/L	125	125	1	10/30/18	10/31/18 14:48	WB
Pyridine	ND		ug/L	125	125	1	10/30/18	10/31/18 14:48	WB
2,4,5-Trichlorophenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 14:48	WB
2,4,6-Trichlorophenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 14:48	WB
Surrogate: 2-Fluorophenol			*21-110*	*34 %*	*10/30/18*		*10/31/18 14:48*		
Surrogate: Phenol-d5			*10-110*	*29 %*	*10/30/18*		*10/31/18 14:48*		
Surrogate: Nitrobenzene-d5			*35-114*	*42 %*	*10/30/18*		*10/31/18 14:48*		
Surrogate: 2,4,6-Tribromophenol			*10-123*	*60 %*	*10/30/18*		*10/31/18 14:48*		
Surrogate: 2-Fluorobiphenyl			*43-116*	*41 %*	*10/30/18*		*10/31/18 14:48*		*S-BN*
Surrogate: Terphenyl-d14			*33-141*	*95 %*	*10/30/18*		*10/31/18 14:48*		
TCLP CHLORINATED PESTICIDES BY EPA METHODS 1311/8081 (GC/ECD)									
alpha-Chlordane	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 15:50	SJA
gamma-Chlordane	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 15:50	SJA
Endrin	ND		ug/L	0.500	0.500	1	10/31/18	11/05/18 15:50	SJA
Heptachlor	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 15:50	SJA
Heptachlor epoxide	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 15:50	SJA
Lindane (gamma-BHC)	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 15:50	SJA
Methoxychlor	ND		ug/L	2.50	2.50	1	10/31/18	11/05/18 15:50	SJA
Toxaphene	ND		ug/L	1.00	1.00	1	10/31/18	11/05/18 15:50	SJA
Surrogate: Tetrachloro-m-xylene			*50-150*	*48 %*	*10/31/18*		*11/05/18 15:50*		*S-FAIL*
Surrogate: Decachlorobiphenyl			*50-150*	*91 %*	*10/31/18*		*11/05/18 15:50*		

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Analytical Results

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Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-2

8102623-01 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
TCLP CHLORINATED HERBICIDES BY EPA METHOD 1311/8151A (GC/ECD)									
2,4-D	ND		mg/L	0.0800	0.0800	1	10/29/18	11/05/18 16:19	SJA
2,4,5-TP (Silvex)	ND		mg/L	0.0800	0.0800	1	10/29/18	11/05/18 16:19	SJA
Surrogate: DCAA			*20-150*	*107 %*		*10/29/18*		*11/05/18 16:19*	
TCLP METALS BY EPA METHODS 1311/3010A/6020A (ICP-MS)									
Arsenic	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 22:59	CMK
Barium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 22:59	CMK
Cadmium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 22:59	CMK
Chromium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 22:59	CMK
Lead	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 22:59	CMK
Mercury	ND		mg/L	0.0100	0.0100	1	11/01/18	11/01/18 22:59	CMK
Selenium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 22:59	CMK
Silver	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 22:59	CMK
EPA 7199 Performed at Pace Analytical Services, Inc. - Ormond Beach Lab									
Hexavalent Chromium	**4340**		ug/kg dry	306	306	1	10/25/18		PN
EPA 9012 Performed at Pace Analytical Services, Inc. - Ormond Beach Lab									
Cyanide	ND	U, J(M1)	mg/kg dry	0.31	0.18	1	10/25/18	11/06/18 19:27	JDW
Dioxins and Furans by Isotope Dilution HRGC/HRMS Performed at PACE-MN									
1,2,3,4,6,7,8-HpCDD	ND		ng/Kg	5.0	0.56	1	10/31/18	11/03/18 10:12	JRH
1,2,3,4,6,7,8-HpCDF	ND		ng/Kg	5.0	0.30	1	10/31/18	11/03/18 10:12	JRH
1,2,3,4,7,8,9-HpCDF	ND		ng/Kg	5.0	0.34	1	10/31/18	11/03/18 10:12	JRH
1,2,3,4,7,8-HxCDD	ND		ng/Kg	5.0	0.34	1	10/31/18	11/03/18 10:12	JRH
1,2,3,4,7,8-HxCDF	ND		ng/Kg	5.0	0.32	1	10/31/18	11/03/18 10:12	JRH
1,2,3,6,7,8-HxCDD	ND		ng/Kg	5.0	0.33	1	10/31/18	11/03/18 10:12	JRH
1,2,3,6,7,8-HxCDF	ND		ng/Kg	5.0	0.40	1	10/31/18	11/03/18 10:12	JRH
1,2,3,7,8,9-HxCDD	ND		ng/Kg	5.0	0.34	1	10/31/18	11/03/18 10:12	JRH
1,2,3,7,8,9-HxCDF	ND		ng/Kg	5.0	0.46	1	10/31/18	11/03/18 10:12	JRH
1,2,3,7,8-PeCDD	ND		ng/Kg	5.0	0.24	1	10/31/18	11/03/18 10:12	JRH
1,2,3,7,8-PeCDF	ND		ng/Kg	5.0	0.37	1	10/31/18	11/03/18 10:12	JRH
2,3,4,6,7,8-HxCDF	ND		ng/Kg	5.0	0.22	1	10/31/18	11/03/18 10:12	JRH
2,3,4,7,8-PeCDF	ND		ng/Kg	5.0	0.19	1	10/31/18	11/03/18 10:12	JRH
2,3,7,8-TCDD	ND		ng/Kg	1.0	0.62	1	10/31/18	11/03/18 10:12	JRH
2,3,7,8-TCDF	ND		ng/Kg	1.0	0.71	1	10/31/18	11/03/18 10:12	JRH

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-2

8102623-01 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
Dioxins and Furans by Isotope Dilution HRGC/HRMS Performed at PACE-MN (continued)									
OCDD	**570**		ng/Kg	10	1.1	1	10/31/18	11/03/18 10:12	JRH
OCDF	ND		ng/Kg	10	0.42	1	10/31/18	11/03/18 10:12	JRH
Total HpCDD	ND		ng/Kg	5.0	0.56	1	10/31/18	11/03/18 10:12	JRH
Total HpCDF	ND		ng/Kg	5.0	0.32	1	10/31/18	11/03/18 10:12	JRH
Total HxCDD	ND		ng/Kg	5.0	0.34	1	10/31/18	11/03/18 10:12	JRH
Total HxCDF	ND		ng/Kg	5.0	0.35	1	10/31/18	11/03/18 10:12	JRH
Total PeCDD	ND		ng/Kg	5.0	0.24	1	10/31/18	11/03/18 10:12	JRH
Total PeCDF	ND		ng/Kg	5.0	0.28	1	10/31/18	11/03/18 10:12	JRH
Total TCDD	ND		ng/Kg	1.0	0.62	1	10/31/18	11/03/18 10:12	JRH
Total TCDF	ND		ng/Kg	1.0	0.71	1	10/31/18	11/03/18 10:12	JRH
Surrogate: 1,2,3,4,6,7,8-HpCDD-13C			*23.0-140.0*	*105 %*		*10/31/18*		*11/03/18 10:12*	
Surrogate: 1,2,3,4,6,7,8-HpCDF-13C			*28.0-143.0*	*88 %*		*10/31/18*		*11/03/18 10:12*	
Surrogate: 1,2,3,4,7,8,9-HpCDF-13C			*26.0-138.0*	*97 %*		*10/31/18*		*11/03/18 10:12*	
Surrogate: 1,2,3,4,7,8-HxCDD-13C			*32.0-141.0*	*97 %*		*10/31/18*		*11/03/18 10:12*	
Surrogate: 1,2,3,4,7,8-HxCDF-13C			*26.0-152.0*	*80 %*		*10/31/18*		*11/03/18 10:12*	
Surrogate: 1,2,3,6,7,8-HxCDD-13C			*28.0-130.0*	*83 %*		*10/31/18*		*11/03/18 10:12*	
Surrogate: 1,2,3,6,7,8-HxCDF-13C			*26.0-123.0*	*78 %*		*10/31/18*		*11/03/18 10:12*	
Surrogate: 1,2,3,7,8,9-HxCDF-13C			*29.0-147.0*	*81 %*		*10/31/18*		*11/03/18 10:12*	
Surrogate: 1,2,3,7,8-PeCDD-13C			*25.0-181.0*	*125 %*		*10/31/18*		*11/03/18 10:12*	
Surrogate: 1,2,3,7,8-PeCDF-13C			*24.0-185.0*	*91 %*		*10/31/18*		*11/03/18 10:12*	
Surrogate: 2,3,4,6,7,8-HxCDF-13C			*28.0-136.0*	*80 %*		*10/31/18*		*11/03/18 10:12*	
Surrogate: 2,3,4,7,8-PeCDF-13C			*21.0-178.0*	*97 %*		*10/31/18*		*11/03/18 10:12*	
Surrogate: 2,3,7,8-TCDD-13C			*25.0-164.0*	*84 %*		*10/31/18*		*11/03/18 10:12*	
Surrogate: 2,3,7,8-TCDF-13C			*24.0-169.0*	*79 %*		*10/31/18*		*11/03/18 10:12*	
Surrogate: OCDD-13C			*17.0-157.0*	*84 %*		*10/31/18*		*11/03/18 10:12*	

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Cory Koons, Laboratory Manager

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-3

8102623-02 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)									
Acetone	ND		ug/kg dry	12.5	12.5	1	10/30/18	10/30/18 17:21	GM
tert-Amyl alcohol (TAA)	ND		ug/kg dry	62.5	62.5	1	10/30/18	10/30/18 17:21	GM
tert-Amyl methyl ether (TAME)	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Benzene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Bromobenzene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Bromochloromethane	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Bromodichloromethane	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Bromoform	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Bromomethane	ND		ug/kg dry	6.3	6.3	1	10/30/18	10/30/18 17:21	GM
tert-Butanol (TBA)	ND		ug/kg dry	62.5	62.5	1	10/30/18	10/30/18 17:21	GM
2-Butanone (MEK)	ND		ug/kg dry	12.5	12.5	1	10/30/18	10/30/18 17:21	GM
n-Butylbenzene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
sec-Butylbenzene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
tert-Butylbenzene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Carbon disulfide	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Carbon tetrachloride	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Chlorobenzene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Chloroethane	ND		ug/kg dry	6.3	6.3	1	10/30/18	10/30/18 17:21	GM
Chloroform	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Chloromethane	ND		ug/kg dry	6.3	6.3	1	10/30/18	10/30/18 17:21	GM
2-Chlorotoluene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
4-Chlorotoluene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
1,2-Dibromo-3-chloropropane	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Dibromochloromethane	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
1,2-Dibromoethane (EDB)	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Dibromomethane	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
1,2-Dichlorobenzene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
1,3-Dichlorobenzene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
1,4-Dichlorobenzene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Dichlorodifluoromethane	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
1,1-Dichloroethane	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
1,2-Dichloroethane	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
1,1-Dichloroethene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM

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Cory Koons, Laboratory Manager

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-3

8102623-02 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
cis-1,2-Dichloroethene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
trans-1,2-Dichloroethene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Dichlorofluoromethane	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
1,2-Dichloropropane	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
1,3-Dichloropropane	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
2,2-Dichloropropane	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
1,1-Dichloropropene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
cis-1,3-Dichloropropene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
trans-1,3-Dichloropropene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Diisopropyl ether (DIPE)	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Ethyl tert-butyl ether (ETBE)	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Ethylbenzene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Hexachlorobutadiene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
2-Hexanone	ND		ug/kg dry	12.5	12.5	1	10/30/18	10/30/18 17:21	GM
Isopropylbenzene (Cumene)	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
4-Isopropyltoluene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
4-Methyl-2-pentanone	ND		ug/kg dry	12.5	12.5	1	10/30/18	10/30/18 17:21	GM
Methylene chloride	ND		ug/kg dry	25.0	25.0	1	10/30/18	10/30/18 17:21	GM
Naphthalene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
n-Propylbenzene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Styrene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
1,1,1,2-Tetrachloroethane	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
1,1,2,2-Tetrachloroethane	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Tetrachloroethene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Toluene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
1,2,3-Trichlorobenzene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
1,2,4-Trichlorobenzene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
1,1,1-Trichloroethane	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
1,1,2-Trichloroethane	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Trichloroethene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Trichlorofluoromethane (Freon 11)	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
1,2,3-Trichloropropane	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM

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Cory Koons, Laboratory Manager

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-3

8102623-02 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
1,2,4-Trimethylbenzene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
1,3,5-Trimethylbenzene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Vinyl chloride	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
o-Xylene	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
m- & p-Xylenes	ND		ug/kg dry	6.3	2.5	1	10/30/18	10/30/18 17:21	GM
Surrogate: 1,2-Dichloroethane-d4			*70-130*	*94 %*		*10/30/18*		*10/30/18 17:21*	
Surrogate: Toluene-d8			*75-120*	*98 %*		*10/30/18*		*10/30/18 17:21*	
Surrogate: 4-Bromofluorobenzene			*65-120*	*93 %*		*10/30/18*		*10/30/18 17:21*	
SEMIVOLATILE ORGANICS BY EPA METHOD 3540/8270D (GC/MS)									
Acenaphthene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Acenaphthylene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Anthracene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Benzo[a]anthracene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Benzo[b]fluoranthene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Benzo[k]fluoranthene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Benzo[ghi]perylene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Benzo[a]pyrene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
4-Bromophenyl phenyl ether	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Butyl benzyl phthalate	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Carbazole	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
4-Chloro-3-methylphenol	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
4-Chloroaniline	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Bis(2-chloroethoxy)methane	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Bis(2-chloroethyl) ether	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
2,2'-Oxybis(1-Chloropropane)	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
2-Chloronaphthalene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
2-Chlorophenol	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
4-Chlorophenyl phenyl ether	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Chrysene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Di-n-butyl phthalate	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Di-n-octyl phthalate	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Dibenzo[a,h]anthracene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Dibenzofuran	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB

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Cory Koons, Laboratory Manager

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-3

8102623-02 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
SEMIVOLATILE ORGANICS BY EPA METHOD 3540/8270D (GC/MS) (continued)									
1,2-Dichlorobenzene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
1,3-Dichlorobenzene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
1,4-Dichlorobenzene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
3,3-Dichlorobenzidine	ND		ug/kg dry	625	625	1	11/02/18	11/05/18 12:14	WB
2,4-Dichlorophenol	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Diethyl phthalate	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Dimethyl phthalate	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
2,4-Dimethylphenol	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
2-Methyl-4,6-dinitrophenol	ND		ug/kg dry	1560	1560	1	11/02/18	11/05/18 12:14	WB
2,4-Dinitrophenol	ND		ug/kg dry	1560	1560	1	11/02/18	11/05/18 12:14	WB
2,4-Dinitrotoluene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
2,6-Dinitrotoluene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Bis(2-ethylhexyl) phthalate	**321**		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Fluoranthene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Fluorene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Hexachlorobenzene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Hexachlorobutadiene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Hexachlorocyclopentadiene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Hexachloroethane	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Indeno[1,2,3-cd]pyrene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Isophorone	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
2-Methylnaphthalene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
3&4-Methylphenol	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
2-Methylphenol	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
N-Nitroso-di-n-propylamine	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
N-Nitrosodiphenylamine	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Naphthalene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
2-Nitroaniline	ND		ug/kg dry	1560	1560	1	11/02/18	11/05/18 12:14	WB
3-Nitroaniline	ND		ug/kg dry	1560	1560	1	11/02/18	11/05/18 12:14	WB
4-Nitroaniline	ND		ug/kg dry	1560	1560	1	11/02/18	11/05/18 12:14	WB
Nitrobenzene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
2-Nitrophenol	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
4-Nitrophenol	ND		ug/kg dry	1560	1560	1	11/02/18	11/05/18 12:14	WB

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Cory Koons, Laboratory Manager

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-3

8102623-02 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
SEMIVOLATILE ORGANICS BY EPA METHOD 3540/8270D (GC/MS) (continued)									
Pentachlorophenol	ND		ug/kg dry	1560	1560	1	11/02/18	11/05/18 12:14	WB
Phenanthrene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Phenol	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Pyrene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
1,2,4-Trichlorobenzene	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
2,4,5-Trichlorophenol	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
2,4,6-Trichlorophenol	ND		ug/kg dry	313	125	1	11/02/18	11/05/18 12:14	WB
Surrogate: 2-Fluorophenol			*50.4-106.9*	*47 %*	*11/02/18*		*11/05/18 12:14*		*S-FAIL*
Surrogate: Phenol-d5			*57.1-102.9*	*51 %*	*11/02/18*		*11/05/18 12:14*		*S-FAIL*
Surrogate: Nitrobenzene-d5			*65.4-105.8*	*45 %*	*11/02/18*		*11/05/18 12:14*		*S-FAIL*
Surrogate: 2,4,6-Tribromophenol			*40.2-120.7*	*87 %*	*11/02/18*		*11/05/18 12:14*		
Surrogate: 2-Fluorobiphenyl			*59.7-107.6*	*51 %*	*11/02/18*		*11/05/18 12:14*		*S-FAIL*
Surrogate: Terphenyl-d14			*70-131*	*88 %*	*11/02/18*		*11/05/18 12:14*		
GASOLINE RANGE ORGANICS BY EPA 5030/8015C									
Gasoline-Range Organics	ND		mg/kg dry	0.13	0.13	1	10/31/18	10/31/18 14:48	GM
DIESEL RANGE ORGANICS BY EPA 3540/8015C									
Diesel-Range Organics	**101**		mg/kg dry	40.0	40.0	2	11/01/18	11/02/18 23:03	SJA
Surrogate: o-Terphenyl			*70-130*	*87 %*	*11/01/18*		*11/02/18 23:03*		
PERCENT SOLIDS BY ASTM D2216-05									
Percent Solids	**80**		%			1	11/05/18	11/06/18 10:02	KD
POLYCHLORINATED BIPHENYLS BY EPA 3540/8082 (GC/ECD)									
Aroclor-1016	ND		ug/kg dry	104	104	1	11/02/18	11/06/18 04:42	SJA
Aroclor-1221	ND		ug/kg dry	213	213	1	11/02/18	11/06/18 04:42	SJA
Aroclor-1232	ND		ug/kg dry	104	104	1	11/02/18	11/06/18 04:42	SJA
Aroclor-1242	ND		ug/kg dry	104	104	1	11/02/18	11/06/18 04:42	SJA
Aroclor-1248	ND		ug/kg dry	104	104	1	11/02/18	11/06/18 04:42	SJA
Aroclor-1254	ND		ug/kg dry	104	104	1	11/02/18	11/06/18 04:42	SJA
Aroclor-1260	ND		ug/kg dry	104	104	1	11/02/18	11/06/18 04:42	SJA
Aroclor-1262	ND		ug/kg dry	104	104	1	11/02/18	11/06/18 04:42	SJA
Aroclor-1268	ND		ug/kg dry	104	104	1	11/02/18	11/06/18 04:42	SJA
Surrogate: Tetrachloro-m-xylene			*40-150*	*72 %*	*11/02/18*		*11/06/18 04:42*		
Surrogate: Decachlorobiphenyl			*40-150*	*59 %*	*11/02/18*		*11/06/18 04:42*		

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Cory Koons, Laboratory Manager

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Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-3

8102623-02 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS BY EPA 3050B/6020A									
Antimony	**1.29**		mg/kg dry	0.313	0.313	1	10/29/18	10/31/18 20:28	CMK
Arsenic	**3.73**		mg/kg dry	0.313	0.313	1	10/29/18	10/31/18 20:28	CMK
Beryllium	**0.353**		mg/kg dry	0.313	0.313	1	10/29/18	10/31/18 20:28	CMK
Cadmium	**3.05**		mg/kg dry	0.313	0.313	1	10/29/18	10/31/18 20:28	CMK
Chromium	**171**		mg/kg dry	1.56	1.56	5	10/29/18	11/01/18 20:24	CMK
Copper	**183**		mg/kg dry	1.56	1.56	5	10/29/18	11/01/18 20:24	CMK
Lead	**103**		mg/kg dry	0.313	0.313	1	10/29/18	10/31/18 20:28	CMK
Mercury	**0.473**		mg/kg dry	0.0156	0.0156	1	10/29/18	10/31/18 20:28	CMK
Nickel	**401**		mg/kg dry	1.56	1.56	5	10/29/18	11/01/18 20:24	CMK
Selenium	**1.69**		mg/kg dry	0.313	0.313	1	10/29/18	10/31/18 20:28	CMK
Silver	**23.5**		mg/kg dry	0.313	0.313	1	10/29/18	10/31/18 20:28	CMK
Thallium	ND		mg/kg dry	0.313	0.313	1	10/29/18	10/31/18 20:28	CMK
Zinc	**439**		mg/kg dry	7.81	7.81	5	10/29/18	11/01/18 20:24	CMK
TCLP VOLATILE ORGANICS BY EPA METHODS 1311/8260B (GC/MS)									
Benzene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 20:51	GM
2-Butanone (MEK)	ND		ug/L	50.0	50.0	5	11/03/18	11/03/18 20:51	GM
Carbon tetrachloride	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 20:51	GM
Chlorobenzene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 20:51	GM
Chloroform	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 20:51	GM
1,4-Dichlorobenzene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 20:51	GM
1,2-Dichloroethane	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 20:51	GM
1,1-Dichloroethene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 20:51	GM
Tetrachloroethene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 20:51	GM
Trichloroethene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 20:51	GM
Vinyl chloride	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 20:51	GM
Surrogate: 1,2-Dichloroethane-d4			*70-121*	*98 %*			*11/03/18*	*11/03/18 20:51*	
Surrogate: Toluene-d8			*84-138*	*96 %*			*11/03/18*	*11/03/18 20:51*	
Surrogate: 4-Bromofluorobenzene			*59-113*	*100 %*			*11/03/18*	*11/03/18 20:51*	

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Cory Koons, Laboratory Manager

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-3

8102623-02 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
TCLP SEMIVOLATILE ORGANICS BY EPA METHODS 1311/8270D (GC/MS)									
1,4-Dichlorobenzene	ND		ug/L	25.0	25.0	1	10/30/18	10/31/18 15:11	WB
2,4-Dinitrotoluene	ND		ug/L	25.0	25.0	1	10/30/18	10/31/18 15:11	WB
Hexachlorobenzene	ND		ug/L	25.0	25.0	1	10/30/18	10/31/18 15:11	WB
Hexachlorobutadiene	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 15:11	WB
Hexachloroethane	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 15:11	WB
3&4-Methylphenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 15:11	WB
2-Methylphenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 15:11	WB
Nitrobenzene	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 15:11	WB
Pentachlorophenol	ND		ug/L	125	125	1	10/30/18	10/31/18 15:11	WB
Pyridine	ND		ug/L	125	125	1	10/30/18	10/31/18 15:11	WB
2,4,5-Trichlorophenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 15:11	WB
2,4,6-Trichlorophenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 15:11	WB
Surrogate: 2-Fluorophenol			*23-121*	*26 %*	*10/30/18*		*10/31/18 15:11*		
Surrogate: Phenol-d5			*24-113*	*23 %*	*10/30/18*		*10/31/18 15:11*		*S-AC*
Surrogate: Nitrobenzene-d5			*23-120*	*31 %*	*10/30/18*		*10/31/18 15:11*		
Surrogate: 2,4,6-Tribromophenol			*19-122*	*60 %*	*10/30/18*		*10/31/18 15:11*		
Surrogate: 2-Fluorobiphenyl			*30-115*	*31 %*	*10/30/18*		*10/31/18 15:11*		
Surrogate: Terphenyl-d14			*18-137*	*94 %*	*10/30/18*		*10/31/18 15:11*		
TCLP CHLORINATED PESTICIDES BY EPA METHODS 1311/8081 (GC/ECD)									
alpha-Chlordane	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 17:05	SJA
gamma-Chlordane	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 17:05	SJA
Endrin	ND		ug/L	0.500	0.500	1	10/31/18	11/05/18 17:05	SJA
Heptachlor	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 17:05	SJA
Heptachlor epoxide	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 17:05	SJA
Lindane (gamma-BHC)	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 17:05	SJA
Methoxychlor	ND		ug/L	2.50	2.50	1	10/31/18	11/05/18 17:05	SJA
Toxaphene	ND		ug/L	1.00	1.00	1	10/31/18	11/05/18 17:05	SJA
Surrogate: Tetrachloro-m-xylene			*50-150*	*65 %*	*10/31/18*		*11/05/18 17:05*		
Surrogate: Decachlorobiphenyl			*50-150*	*71 %*	*10/31/18*		*11/05/18 17:05*		

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Cory Koons, Laboratory Manager

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-3

8102623-02 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
TCLP CHLORINATED HERBICIDES BY EPA METHOD 1311/8151A (GC/ECD)									
2,4-D	ND		mg/L	0.0800	0.0800	1	10/29/18	11/05/18 16:48	SJA
2,4,5-TP (Silvex)	ND		mg/L	0.0800	0.0800	1	10/29/18	11/05/18 16:48	SJA
Surrogate: DCAA			*20-150*	*101 %*		*10/29/18*		*11/05/18 16:48*	
TCLP METALS BY EPA METHODS 1311/3010A/6020A (ICP-MS)									
Arsenic	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:03	CMK
Barium	**0.731**		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:03	CMK
Cadmium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:03	CMK
Chromium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:03	CMK
Lead	**1.46**		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:03	CMK
Mercury	ND		mg/L	0.0100	0.0100	1	11/01/18	11/01/18 23:03	CMK
Selenium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:03	CMK
Silver	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:03	CMK
EPA 7199 Performed at Pace Analytical Services, Inc. - Ormond Beach Lab									
Hexavalent Chromium	ND		ug/kg dry	289	289		10/25/18		PN
EPA 9012 Performed at Pace Analytical Services, Inc. - Ormond Beach Lab									
Cyanide	ND		mg/kg dry	0.30	0.17	1	10/25/18	11/06/18 19:30	JDW
Dioxins and Furans by Isotope Dilution HRGC/HRMS Performed at PACE-MN									
1,2,3,4,6,7,8-HpCDD	**390**		ng/Kg	5.0	2.1	1	10/31/18	11/03/18 10:58	JRH
1,2,3,4,6,7,8-HpCDF	**190**		ng/Kg	5.0	1.4	1	10/31/18	11/03/18 10:58	JRH
1,2,3,4,7,8,9-HpCDF	**21**		ng/Kg	5.0	0.57	1	10/31/18	11/03/18 10:58	JRH
1,2,3,4,7,8-HxCDD	**27**		ng/Kg	5.0	1.3	1	10/31/18	11/03/18 10:58	JRH
1,2,3,4,7,8-HxCDF	**20**		ng/Kg	5.0	3.0	1	10/31/18	11/03/18 10:58	JRH
1,2,3,6,7,8-HxCDD	**47**		ng/Kg	5.0	1.4	1	10/31/18	11/03/18 10:58	JRH
1,2,3,6,7,8-HxCDF	**32**		ng/Kg	5.0	1.7	1	10/31/18	11/03/18 10:58	JRH
1,2,3,7,8,9-HxCDD	**36**		ng/Kg	5.0	1.2	1	10/31/18	11/03/18 10:58	JRH
1,2,3,7,8,9-HxCDF	**19**		ng/Kg	5.0	0.25	1	10/31/18	11/03/18 10:58	JRH
1,2,3,7,8-PeCDD	**29**		ng/Kg	5.0	1.1	1	10/31/18	11/03/18 10:58	JRH
1,2,3,7,8-PeCDF	**21**		ng/Kg	5.0	1.5	1	10/31/18	11/03/18 10:58	JRH
2,3,4,6,7,8-HxCDF	**50**		ng/Kg	5.0	0.97	1	10/31/18	11/03/18 10:58	JRH
2,3,4,7,8-PeCDF	**30**		ng/Kg	5.0	0.85	1	10/31/18	11/03/18 10:58	JRH
2,3,7,8-TCDD	**14**		ng/Kg	1.0	0.93	1	10/31/18	11/03/18 10:58	JRH
2,3,7,8-TCDF	**15**		ng/Kg	1.0	0.88	1	10/31/18	11/03/18 10:58	JRH
OCDD	**1300**		ng/Kg	10	1.2	1	10/31/18	11/03/18 10:58	JRH
OCDF	**110**		ng/Kg	10	1.0	1	10/31/18	11/03/18 10:58	JRH

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-3

8102623-02 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
Dioxins and Furans by Isotope Dilution HRGC/HRMS Performed at PACE-MN (continued)									
Total HpCDD	**750**		ng/Kg	5.0	2.1	1	10/31/18	11/03/18 10:58	JRH
Total HpCDF	**260**		ng/Kg	5.0	1.00	1	10/31/18	11/03/18 10:58	JRH
Total HxCDD	**510**		ng/Kg	5.0	1.3	1	10/31/18	11/03/18 10:58	JRH
Total HxCDF	**310**		ng/Kg	5.0	1.5	1	10/31/18	11/03/18 10:58	JRH
Total PeCDD	**300**		ng/Kg	5.0	1.1	1	10/31/18	11/03/18 10:58	JRH
Total PeCDF	**360**		ng/Kg	5.0	1.2	1	10/31/18	11/03/18 10:58	JRH
Total TCDD	**220**		ng/Kg	1.0	0.93	1	10/31/18	11/03/18 10:58	JRH
Total TCDF	**370**		ng/Kg	1.0	0.88	1	10/31/18	11/03/18 10:58	JRH
Surrogate: 1,2,3,4,6,7,8-HpCDD-13C			*23.0-140.0*	*66 %*			*10/31/18*	*11/03/18 10:58*	
Surrogate: 1,2,3,4,6,7,8-HpCDF-13C			*28.0-143.0*	*57 %*			*10/31/18*	*11/03/18 10:58*	
Surrogate: 1,2,3,4,7,8,9-HpCDF-13C			*26.0-138.0*	*60 %*			*10/31/18*	*11/03/18 10:58*	
Surrogate: 1,2,3,4,7,8-HxCDD-13C			*32.0-141.0*	*71 %*			*10/31/18*	*11/03/18 10:58*	
Surrogate: 1,2,3,4,7,8-HxCDF-13C			*26.0-152.0*	*62 %*			*10/31/18*	*11/03/18 10:58*	
Surrogate: 1,2,3,6,7,8-HxCDD-13C			*28.0-130.0*	*59 %*			*10/31/18*	*11/03/18 10:58*	
Surrogate: 1,2,3,6,7,8-HxCDF-13C			*26.0-123.0*	*62 %*			*10/31/18*	*11/03/18 10:58*	
Surrogate: 1,2,3,7,8,9-HxCDF-13C			*29.0-147.0*	*72 %*			*10/31/18*	*11/03/18 10:58*	
Surrogate: 1,2,3,7,8-PeCDD-13C			*25.0-181.0*	*90 %*			*10/31/18*	*11/03/18 10:58*	
Surrogate: 1,2,3,7,8-PeCDF-13C			*24.0-185.0*	*67 %*			*10/31/18*	*11/03/18 10:58*	
Surrogate: 2,3,4,6,7,8-HxCDF-13C			*28.0-136.0*	*61 %*			*10/31/18*	*11/03/18 10:58*	
Surrogate: 2,3,4,7,8-PeCDF-13C			*21.0-178.0*	*73 %*			*10/31/18*	*11/03/18 10:58*	
Surrogate: 2,3,7,8-TCDD-13C			*25.0-164.0*	*68 %*			*10/31/18*	*11/03/18 10:58*	
Surrogate: 2,3,7,8-TCDF-13C			*24.0-169.0*	*62 %*			*10/31/18*	*11/03/18 10:58*	
Surrogate: OCDD-13C			*17.0-157.0*	*43 %*			*10/31/18*	*11/03/18 10:58*	

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-4

8102623-03 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)									
Acetone	ND		ug/kg dry	11.1	11.1	1	10/30/18	10/30/18 17:48	GM
tert-Amyl alcohol (TAA)	ND		ug/kg dry	55.6	55.6	1	10/30/18	10/30/18 17:48	GM
tert-Amyl methyl ether (TAME)	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Benzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Bromobenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Bromochloromethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Bromodichloromethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Bromoform	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Bromomethane	ND		ug/kg dry	5.6	5.6	1	10/30/18	10/30/18 17:48	GM
tert-Butanol (TBA)	ND		ug/kg dry	55.6	55.6	1	10/30/18	10/30/18 17:48	GM
2-Butanone (MEK)	ND		ug/kg dry	11.1	11.1	1	10/30/18	10/30/18 17:48	GM
n-Butylbenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
sec-Butylbenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
tert-Butylbenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Carbon disulfide	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Carbon tetrachloride	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Chlorobenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Chloroethane	ND		ug/kg dry	5.6	5.6	1	10/30/18	10/30/18 17:48	GM
Chloroform	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Chloromethane	ND		ug/kg dry	5.6	5.6	1	10/30/18	10/30/18 17:48	GM
2-Chlorotoluene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
4-Chlorotoluene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
1,2-Dibromo-3-chloropropane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Dibromochloromethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
1,2-Dibromoethane (EDB)	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Dibromomethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
1,2-Dichlorobenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
1,3-Dichlorobenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
1,4-Dichlorobenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Dichlorodifluoromethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
1,1-Dichloroethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
1,2-Dichloroethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
1,1-Dichloroethene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM

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www.mdspectral.com

Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-4

8102623-03 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
cis-1,2-Dichloroethene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
trans-1,2-Dichloroethene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Dichlorofluoromethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
1,2-Dichloropropane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
1,3-Dichloropropane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
2,2-Dichloropropane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
1,1-Dichloropropene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
cis-1,3-Dichloropropene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
trans-1,3-Dichloropropene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Diisopropyl ether (DIPE)	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Ethyl tert-butyl ether (ETBE)	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Ethylbenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Hexachlorobutadiene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
2-Hexanone	ND		ug/kg dry	11.1	11.1	1	10/30/18	10/30/18 17:48	GM
Isopropylbenzene (Cumene)	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
4-Isopropyltoluene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
4-Methyl-2-pentanone	ND		ug/kg dry	11.1	11.1	1	10/30/18	10/30/18 17:48	GM
Methylene chloride	ND		ug/kg dry	22.2	22.2	1	10/30/18	10/30/18 17:48	GM
Naphthalene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
n-Propylbenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Styrene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
1,1,1,2-Tetrachloroethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
1,1,2,2-Tetrachloroethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Tetrachloroethene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Toluene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
1,2,3-Trichlorobenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
1,2,4-Trichlorobenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
1,1,1-Trichloroethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
1,1,2-Trichloroethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Trichloroethene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Trichlorofluoromethane (Freon 11)	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
1,2,3-Trichloropropane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM

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Cory Koons, Laboratory Manager

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report

Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-4

8102623-03 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
1,2,4-Trimethylbenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
1,3,5-Trimethylbenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Vinyl chloride	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
o-Xylene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
m- & p-Xylenes	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 17:48	GM
Surrogate: 1,2-Dichloroethane-d4			*70-130*	*94 %*		*10/30/18*		*10/30/18 17:48*	
Surrogate: Toluene-d8			*75-120*	*89 %*		*10/30/18*		*10/30/18 17:48*	
Surrogate: 4-Bromofluorobenzene			*65-120*	*101 %*		*10/30/18*		*10/30/18 17:48*	
SEMIVOLATILE ORGANICS BY EPA METHOD 3540/8270D (GC/MS)									
Acenaphthene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Acenaphthylene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Anthracene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Benzo[a]anthracene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Benzo[b]fluoranthene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Benzo[k]fluoranthene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Benzo[ghi]perylene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Benzo[a]pyrene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
4-Bromophenyl phenyl ether	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Butyl benzyl phthalate	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Carbazole	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
4-Chloro-3-methylphenol	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
4-Chloroaniline	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Bis(2-chloroethoxy)methane	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Bis(2-chloroethyl) ether	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
2,2'-Oxybis(1-Chloropropane)	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
2-Chloronaphthalene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
2-Chlorophenol	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
4-Chlorophenyl phenyl ether	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Chrysene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Di-n-butyl phthalate	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Di-n-octyl phthalate	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Dibenzo[a,h]anthracene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Dibenzofuran	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB

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Cory Koons, Laboratory Manager

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1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-4

8102623-03 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
SEMIVOLATILE ORGANICS BY EPA METHOD 3540/8270D (GC/MS) (continued)									
1,2-Dichlorobenzene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
1,3-Dichlorobenzene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
1,4-Dichlorobenzene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
3,3-Dichlorobenzidine	ND		ug/kg dry	2220	2220	2	11/02/18	11/05/18 12:37	WB
2,4-Dichlorophenol	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Diethyl phthalate	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Dimethyl phthalate	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
2,4-Dimethylphenol	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
2-Methyl-4,6-dinitrophenol	ND		ug/kg dry	5560	5560	2	11/02/18	11/05/18 12:37	WB
2,4-Dinitrophenol	ND		ug/kg dry	5560	5560	2	11/02/18	11/05/18 12:37	WB
2,4-Dinitrotoluene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
2,6-Dinitrotoluene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Bis(2-ethylhexyl) phthalate	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Fluoranthene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Fluorene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Hexachlorobenzene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Hexachlorobutadiene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Hexachlorocyclopentadiene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Hexachloroethane	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Indeno[1,2,3-cd]pyrene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Isophorone	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
2-Methylnaphthalene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
3&4-Methylphenol	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
2-Methylphenol	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
N-Nitroso-di-n-propylamine	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
N-Nitrosodiphenylamine	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Naphthalene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
2-Nitroaniline	ND		ug/kg dry	5560	5560	2	11/02/18	11/05/18 12:37	WB
3-Nitroaniline	ND		ug/kg dry	5560	5560	2	11/02/18	11/05/18 12:37	WB
4-Nitroaniline	ND		ug/kg dry	5560	5560	2	11/02/18	11/05/18 12:37	WB
Nitrobenzene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
2-Nitrophenol	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
4-Nitrophenol	ND		ug/kg dry	5560	5560	2	11/02/18	11/05/18 12:37	WB

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Cory Koons, Laboratory Manager

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-4

8102623-03 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
SEMIVOLATILE ORGANICS BY EPA METHOD 3540/8270D (GC/MS) (continued)									
Pentachlorophenol	ND		ug/kg dry	5560	5560	2	11/02/18	11/05/18 12:37	WB
Phenanthrene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Phenol	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Pyrene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
1,2,4-Trichlorobenzene	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
2,4,5-Trichlorophenol	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
2,4,6-Trichlorophenol	ND		ug/kg dry	1110	444	2	11/02/18	11/05/18 12:37	WB
Surrogate: 2-Fluorophenol			*50.4-106.9*	*73 %*	*11/02/18*		*11/05/18 12:37*		
Surrogate: Phenol-d5			*57.1-102.9*	*85 %*	*11/02/18*		*11/05/18 12:37*		
Surrogate: Nitrobenzene-d5			*65.4-105.8*	*80 %*	*11/02/18*		*11/05/18 12:37*		
Surrogate: 2,4,6-Tribromophenol			*40.2-120.7*	*93 %*	*11/02/18*		*11/05/18 12:37*		
Surrogate: 2-Fluorobiphenyl			*59.7-107.6*	*87 %*	*11/02/18*		*11/05/18 12:37*		
Surrogate: Terphenyl-d14			*70-131*	*103 %*	*11/02/18*		*11/05/18 12:37*		
GASOLINE RANGE ORGANICS BY EPA 5030/8015C									
Gasoline-Range Organics	ND		mg/kg dry	0.11	0.11	1	10/31/18	10/31/18 15:21	GM
DIESEL RANGE ORGANICS BY EPA 3540/8015C									
Diesel-Range Organics	**1390**		mg/kg dry	267	267	3	11/01/18	11/03/18 00:39	SJA
Surrogate: o-Terphenyl			*70-130*	*%*	*11/01/18*		*11/03/18 00:39*		*S-01*
PERCENT SOLIDS BY ASTM D2216-05									
Percent Solids	**90**		%			1	11/05/18	11/06/18 10:02	KD
POLYCHLORINATED BIPHENYLS BY EPA 3540/8082 (GC/ECD)									
Aroclor-1016	ND		ug/kg dry	92.2	92.2	1	11/02/18	11/06/18 05:09	SJA
Aroclor-1221	ND		ug/kg dry	189	189	1	11/02/18	11/06/18 05:09	SJA
Aroclor-1232	ND		ug/kg dry	92.2	92.2	1	11/02/18	11/06/18 05:09	SJA
Aroclor-1242	ND		ug/kg dry	92.2	92.2	1	11/02/18	11/06/18 05:09	SJA
Aroclor-1248	ND		ug/kg dry	92.2	92.2	1	11/02/18	11/06/18 05:09	SJA
Aroclor-1254	ND		ug/kg dry	92.2	92.2	1	11/02/18	11/06/18 05:09	SJA
Aroclor-1260	ND		ug/kg dry	92.2	92.2	1	11/02/18	11/06/18 05:09	SJA
Aroclor-1262	ND		ug/kg dry	92.2	92.2	1	11/02/18	11/06/18 05:09	SJA
Aroclor-1268	ND		ug/kg dry	92.2	92.2	1	11/02/18	11/06/18 05:09	SJA
Surrogate: Tetrachloro-m-xylene			*40-150*	*86 %*	*11/02/18*		*11/06/18 05:09*		
Surrogate: Decachlorobiphenyl			*40-150*	*42 %*	*11/02/18*		*11/06/18 05:09*		

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Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-4

8102623-03 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS BY EPA 3050B/6020A									
Antimony	**4.25**		mg/kg dry	0.278	0.278	1	10/29/18	10/31/18 20:51	CMK
Arsenic	**4.20**		mg/kg dry	0.278	0.278	1	10/29/18	10/31/18 20:51	CMK
Beryllium	**0.285**		mg/kg dry	0.278	0.278	1	10/29/18	10/31/18 20:51	CMK
Cadmium	**5.61**		mg/kg dry	0.278	0.278	1	10/29/18	10/31/18 20:51	CMK
Chromium	**30.2**		mg/kg dry	0.278	0.278	1	10/29/18	10/31/18 20:51	CMK
Copper	**170**		mg/kg dry	1.39	1.39	5	10/29/18	11/01/18 20:29	CMK
Lead	**550**		mg/kg dry	1.39	1.39	5	10/29/18	11/01/18 20:29	CMK
Mercury	**0.306**		mg/kg dry	0.0139	0.0139	1	10/29/18	10/31/18 20:51	CMK
Nickel	**28.0**		mg/kg dry	0.278	0.278	1	10/29/18	10/31/18 20:51	CMK
Selenium	**0.878**		mg/kg dry	0.278	0.278	1	10/29/18	10/31/18 20:51	CMK
Silver	**1.14**		mg/kg dry	0.278	0.278	1	10/29/18	10/31/18 20:51	CMK
Thallium	ND		mg/kg dry	0.278	0.278	1	10/29/18	10/31/18 20:51	CMK
Zinc	**693**		mg/kg dry	6.94	6.94	5	10/29/18	11/01/18 20:29	CMK
TCLP VOLATILE ORGANICS BY EPA METHODS 1311/8260B (GC/MS)									
Benzene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 21:15	GM
2-Butanone (MEK)	ND		ug/L	50.0	50.0	5	11/03/18	11/03/18 21:15	GM
Carbon tetrachloride	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 21:15	GM
Chlorobenzene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 21:15	GM
Chloroform	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 21:15	GM
1,4-Dichlorobenzene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 21:15	GM
1,2-Dichloroethane	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 21:15	GM
1,1-Dichloroethene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 21:15	GM
Tetrachloroethene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 21:15	GM
Trichloroethene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 21:15	GM
Vinyl chloride	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 21:15	GM
Surrogate: 1,2-Dichloroethane-d4			*70-121*	*96 %*			*11/03/18*	*11/03/18 21:15*	
Surrogate: Toluene-d8			*84-138*	*98 %*			*11/03/18*	*11/03/18 21:15*	
Surrogate: 4-Bromofluorobenzene			*59-113*	*100 %*			*11/03/18*	*11/03/18 21:15*	

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Cory Koons, Laboratory Manager

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-4

8102623-03 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
TCLP SEMIVOLATILE ORGANICS BY EPA METHODS 1311/8270D (GC/MS)									
1,4-Dichlorobenzene	ND		ug/L	25.0	25.0	1	10/30/18	10/31/18 15:34	WB
2,4-Dinitrotoluene	ND		ug/L	25.0	25.0	1	10/30/18	10/31/18 15:34	WB
Hexachlorobenzene	ND		ug/L	25.0	25.0	1	10/30/18	10/31/18 15:34	WB
Hexachlorobutadiene	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 15:34	WB
Hexachloroethane	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 15:34	WB
3&4-Methylphenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 15:34	WB
2-Methylphenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 15:34	WB
Nitrobenzene	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 15:34	WB
Pentachlorophenol	ND		ug/L	125	125	1	10/30/18	10/31/18 15:34	WB
Pyridine	ND		ug/L	125	125	1	10/30/18	10/31/18 15:34	WB
2,4,5-Trichlorophenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 15:34	WB
2,4,6-Trichlorophenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 15:34	WB
Surrogate: 2-Fluorophenol			*23-121*	*30 %*	*10/30/18*		*10/31/18 15:34*		
Surrogate: Phenol-d5			*24-113*	*26 %*	*10/30/18*		*10/31/18 15:34*		
Surrogate: Nitrobenzene-d5			*23-120*	*37 %*	*10/30/18*		*10/31/18 15:34*		
Surrogate: 2,4,6-Tribromophenol			*19-122*	*72 %*	*10/30/18*		*10/31/18 15:34*		
Surrogate: 2-Fluorobiphenyl			*30-115*	*38 %*	*10/30/18*		*10/31/18 15:34*		
Surrogate: Terphenyl-d14			*18-137*	*93 %*	*10/30/18*		*10/31/18 15:34*		
TCLP CHLORINATED PESTICIDES BY EPA METHODS 1311/8081 (GC/ECD)									
alpha-Chlordane	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 17:31	SJA
gamma-Chlordane	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 17:31	SJA
Endrin	ND		ug/L	0.500	0.500	1	10/31/18	11/05/18 17:31	SJA
Heptachlor	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 17:31	SJA
Heptachlor epoxide	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 17:31	SJA
Lindane (gamma-BHC)	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 17:31	SJA
Methoxychlor	ND		ug/L	2.50	2.50	1	10/31/18	11/05/18 17:31	SJA
Toxaphene	ND		ug/L	1.00	1.00	1	10/31/18	11/05/18 17:31	SJA
Surrogate: Tetrachloro-m-xylene			*50-150*	*47 %*	*10/31/18*		*11/05/18 17:31*		*S-GC*
Surrogate: Decachlorobiphenyl			*50-150*	*98 %*	*10/31/18*		*11/05/18 17:31*		

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www.mdspectral.com

Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-4

8102623-03 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
TCLP CHLORINATED HERBICIDES BY EPA METHOD 1311/8151A (GC/ECD)									
2,4-D	ND		mg/L	0.0800	0.0800	1	10/29/18	11/05/18 17:18	SJA
2,4,5-TP (Silvex)	ND		mg/L	0.0800	0.0800	1	10/29/18	11/05/18 17:18	SJA
Surrogate: DCAA		*20-150*		*99 %*		*10/29/18*	*11/05/18 17:18*		
TCLP METALS BY EPA METHODS 1311/3010A/6020A (ICP-MS)									
Arsenic	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:18	CMK
Barium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:18	CMK
Cadmium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:18	CMK
Chromium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:18	CMK
Lead	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:18	CMK
Mercury	ND		mg/L	0.0100	0.0100	1	11/01/18	11/01/18 23:18	CMK
Selenium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:18	CMK
Silver	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:18	CMK
EPA 7199 Performed at Pace Analytical Services, Inc. - Ormond Beach Lab									
Hexavalent Chromium	ND		ug/kg dry	345	345		10/25/18		PN
EPA 9012 Performed at Pace Analytical Services, Inc. - Ormond Beach Lab									
Cyanide	**1.1**		mg/kg dry	0.33	0.19	1	11/06/18	11/06/18 19:32	JDW
Dioxins and Furans by Isotope Dilution HRGC/HRMS Performed at PACE-MN									
1,2,3,4,6,7,8-HpCDD	**230**		ng/Kg	5.0	1.1	1	10/31/18	11/03/18 11:44	JRH
1,2,3,4,6,7,8-HpCDF	**93**		ng/Kg	5.0	1.4	1	10/31/18	11/03/18 11:44	JRH
1,2,3,4,7,8,9-HpCDF	**12**		ng/Kg	5.0	1.5	1	10/31/18	11/03/18 11:44	JRH
1,2,3,4,7,8-HxCDD	**14**		ng/Kg	5.0	0.54	1	10/31/18	11/03/18 11:44	JRH
1,2,3,4,7,8-HxCDF	ND	E	ng/Kg	5.0	0.77	1	10/31/18	11/03/18 11:44	JRH
1,2,3,6,7,8-HxCDD	**25**		ng/Kg	5.0	0.56	1	10/31/18	11/03/18 11:44	JRH
1,2,3,6,7,8-HxCDF	**18**		ng/Kg	5.0	1.0	1	10/31/18	11/03/18 11:44	JRH
1,2,3,7,8,9-HxCDD	**21**		ng/Kg	5.0	0.74	1	10/31/18	11/03/18 11:44	JRH
1,2,3,7,8,9-HxCDF	**6.4**		ng/Kg	5.0	0.71	1	10/31/18	11/03/18 11:44	JRH
1,2,3,7,8-PeCDD	**12**		ng/Kg	5.0	1.2	1	10/31/18	11/03/18 11:44	JRH
1,2,3,7,8-PeCDF	**9.7**		ng/Kg	5.0	1.7	1	10/31/18	11/03/18 11:44	JRH
2,3,4,6,7,8-HxCDF	**31**		ng/Kg	5.0	0.75	1	10/31/18	11/03/18 11:44	JRH
2,3,4,7,8-PeCDF	**16**		ng/Kg	5.0	0.72	1	10/31/18	11/03/18 11:44	JRH
2,3,7,8-TCDD	**4.5**		ng/Kg	1.0	0.78	1	10/31/18	11/03/18 11:44	JRH
2,3,7,8-TCDF	ND	I	ng/Kg	1.0	0.95	1	10/31/18	11/03/18 11:44	JRH
OCDD	**1200**		ng/Kg	10	2.6	1	10/31/18	11/03/18 11:44	JRH
OCDF	**65**		ng/Kg	10	3.0	1	10/31/18	11/03/18 11:44	JRH

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-4

8102623-03 (Soil)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
Dioxins and Furans by Isotope Dilution HRGC/HRMS Performed at PACE-MN (continued)									
Total HpCDD	**420**		ng/Kg	5.0	1.1	1	10/31/18	11/03/18 11:44	JRH
Total HpCDF	**160**		ng/Kg	5.0	1.4	1	10/31/18	11/03/18 11:44	JRH
Total HxCDD	**260**		ng/Kg	5.0	0.61	1	10/31/18	11/03/18 11:44	JRH
Total HxCDF	**160**		ng/Kg	5.0	0.81	1	10/31/18	11/03/18 11:44	JRH
Total PeCDD	**140**		ng/Kg	5.0	1.2	1	10/31/18	11/03/18 11:44	JRH
Total PeCDF	**170**		ng/Kg	5.0	1.2	1	10/31/18	11/03/18 11:44	JRH
Total TCDD	**77**		ng/Kg	1.0	0.78	1	10/31/18	11/03/18 11:44	JRH
Total TCDF	**120**		ng/Kg	1.0	0.95	1	10/31/18	11/03/18 11:44	JRH
Surrogate: 1,2,3,4,6,7,8-HpCDD-13C			*23.0-140.0*	*64 %*		*10/31/18*		*11/03/18 11:44*	
Surrogate: 1,2,3,4,6,7,8-HpCDF-13C			*28.0-143.0*	*57 %*		*10/31/18*		*11/03/18 11:44*	
Surrogate: 1,2,3,4,7,8,9-HpCDF-13C			*26.0-138.0*	*57 %*		*10/31/18*		*11/03/18 11:44*	
Surrogate: 1,2,3,4,7,8-HxCDD-13C			*32.0-141.0*	*72 %*		*10/31/18*		*11/03/18 11:44*	
Surrogate: 1,2,3,4,7,8-HxCDF-13C			*26.0-152.0*	*65 %*		*10/31/18*		*11/03/18 11:44*	
Surrogate: 1,2,3,6,7,8-HxCDD-13C			*28.0-130.0*	*63 %*		*10/31/18*		*11/03/18 11:44*	
Surrogate: 1,2,3,6,7,8-HxCDF-13C			*26.0-123.0*	*65 %*		*10/31/18*		*11/03/18 11:44*	
Surrogate: 1,2,3,7,8,9-HxCDF-13C			*29.0-147.0*	*88 %*		*10/31/18*		*11/03/18 11:44*	
Surrogate: 1,2,3,7,8-PeCDD-13C			*25.0-181.0*	*91 %*		*10/31/18*		*11/03/18 11:44*	
Surrogate: 1,2,3,7,8-PeCDF-13C			*24.0-185.0*	*70 %*		*10/31/18*		*11/03/18 11:44*	
Surrogate: 2,3,4,6,7,8-HxCDF-13C			*28.0-136.0*	*64 %*		*10/31/18*		*11/03/18 11:44*	
Surrogate: 2,3,4,7,8-PeCDF-13C			*21.0-178.0*	*71 %*		*10/31/18*		*11/03/18 11:44*	
Surrogate: 2,3,7,8-TCDD-13C			*25.0-164.0*	*68 %*		*10/31/18*		*11/03/18 11:44*	
Surrogate: 2,3,7,8-TCDF-13C			*24.0-169.0*	*64 %*		*10/31/18*		*11/03/18 11:44*	
Surrogate: OCDD-13C			*17.0-157.0*	*33 %*		*10/31/18*		*11/03/18 11:44*	

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-5

8102623-04 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)									
Acetone	ND		ug/kg dry	10.8	10.8	1	10/30/18	10/30/18 18:16	GM
tert-Amyl alcohol (TAA)	ND		ug/kg dry	53.8	53.8	1	10/30/18	10/30/18 18:16	GM
tert-Amyl methyl ether (TAME)	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Benzene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Bromobenzene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Bromochloromethane	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Bromodichloromethane	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Bromoform	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Bromomethane	ND		ug/kg dry	5.4	5.4	1	10/30/18	10/30/18 18:16	GM
tert-Butanol (TBA)	ND		ug/kg dry	53.8	53.8	1	10/30/18	10/30/18 18:16	GM
2-Butanone (MEK)	ND		ug/kg dry	10.8	10.8	1	10/30/18	10/30/18 18:16	GM
n-Butylbenzene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
sec-Butylbenzene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
tert-Butylbenzene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Carbon disulfide	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Carbon tetrachloride	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Chlorobenzene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Chloroethane	ND		ug/kg dry	5.4	5.4	1	10/30/18	10/30/18 18:16	GM
Chloroform	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Chloromethane	ND		ug/kg dry	5.4	5.4	1	10/30/18	10/30/18 18:16	GM
2-Chlorotoluene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
4-Chlorotoluene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
1,2-Dibromo-3-chloropropane	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Dibromochloromethane	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
1,2-Dibromoethane (EDB)	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Dibromomethane	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
1,2-Dichlorobenzene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
1,3-Dichlorobenzene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
1,4-Dichlorobenzene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Dichlorodifluoromethane	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
1,1-Dichloroethane	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
1,2-Dichloroethane	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
1,1-Dichloroethene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-5

8102623-04 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
cis-1,2-Dichloroethene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
trans-1,2-Dichloroethene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Dichlorofluoromethane	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
1,2-Dichloropropane	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
1,3-Dichloropropane	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
2,2-Dichloropropane	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
1,1-Dichloropropene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
cis-1,3-Dichloropropene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
trans-1,3-Dichloropropene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Diisopropyl ether (DIPE)	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Ethyl tert-butyl ether (ETBE)	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Ethylbenzene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Hexachlorobutadiene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
2-Hexanone	ND		ug/kg dry	10.8	10.8	1	10/30/18	10/30/18 18:16	GM
Isopropylbenzene (Cumene)	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
4-Isopropyltoluene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
4-Methyl-2-pentanone	ND		ug/kg dry	10.8	10.8	1	10/30/18	10/30/18 18:16	GM
Methylene chloride	ND		ug/kg dry	21.5	21.5	1	10/30/18	10/30/18 18:16	GM
Naphthalene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
n-Propylbenzene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Styrene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
1,1,1,2-Tetrachloroethane	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
1,1,2,2-Tetrachloroethane	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Tetrachloroethene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Toluene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
1,2,3-Trichlorobenzene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
1,2,4-Trichlorobenzene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
1,1,1-Trichloroethane	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
1,1,2-Trichloroethane	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Trichloroethene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Trichlorofluoromethane (Freon 11)	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
1,2,3-Trichloropropane	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-5

8102623-04 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
1,2,4-Trimethylbenzene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
1,3,5-Trimethylbenzene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Vinyl chloride	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
o-Xylene	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
m- & p-Xylenes	ND		ug/kg dry	5.4	2.2	1	10/30/18	10/30/18 18:16	GM
Surrogate: 1,2-Dichloroethane-d4			*70-130*	*91 %*		*10/30/18*		*10/30/18 18:16*	
Surrogate: Toluene-d8			*75-120*	*90 %*		*10/30/18*		*10/30/18 18:16*	
Surrogate: 4-Bromofluorobenzene			*65-120*	*104 %*		*10/30/18*		*10/30/18 18:16*	
SEMIVOLATILE ORGANICS BY EPA METHOD 3540/8270D (GC/MS)									
Acenaphthene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Acenaphthylene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Anthracene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Benzo[a]anthracene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Benzo[b]fluoranthene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Benzo[k]fluoranthene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Benzo[ghi]perylene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Benzo[a]pyrene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
4-Bromophenyl phenyl ether	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Butyl benzyl phthalate	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Carbazole	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
4-Chloro-3-methylphenol	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
4-Chloroaniline	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Bis(2-chloroethoxy)methane	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Bis(2-chloroethyl) ether	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
2,2'-Oxybis(1-Chloropropane)	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
2-Chloronaphthalene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
2-Chlorophenol	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
4-Chlorophenyl phenyl ether	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Chrysene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Di-n-butyl phthalate	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Di-n-octyl phthalate	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Dibenzo[a,h]anthracene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Dibenzofuran	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB

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Cory Koons, Laboratory Manager

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-5

8102623-04 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
SEMIVOLATILE ORGANICS BY EPA METHOD 3540/8270D (GC/MS) (continued)									
1,2-Dichlorobenzene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
1,3-Dichlorobenzene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
1,4-Dichlorobenzene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
3,3-Dichlorobenzidine	ND		ug/kg dry	538	538	1	11/02/18	11/05/18 13:00	WB
2,4-Dichlorophenol	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Diethyl phthalate	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Dimethyl phthalate	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
2,4-Dimethylphenol	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
2-Methyl-4,6-dinitrophenol	ND		ug/kg dry	1340	1340	1	11/02/18	11/05/18 13:00	WB
2,4-Dinitrophenol	ND		ug/kg dry	1340	1340	1	11/02/18	11/05/18 13:00	WB
2,4-Dinitrotoluene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
2,6-Dinitrotoluene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Bis(2-ethylhexyl) phthalate	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Fluoranthene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Fluorene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Hexachlorobenzene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Hexachlorobutadiene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Hexachlorocyclopentadiene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Hexachloroethane	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Indeno[1,2,3-cd]pyrene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Isophorone	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
2-Methylnaphthalene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
3&4-Methylphenol	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
2-Methylphenol	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
N-Nitroso-di-n-propylamine	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
N-Nitrosodiphenylamine	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Naphthalene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
2-Nitroaniline	ND		ug/kg dry	1340	1340	1	11/02/18	11/05/18 13:00	WB
3-Nitroaniline	ND		ug/kg dry	1340	1340	1	11/02/18	11/05/18 13:00	WB
4-Nitroaniline	ND		ug/kg dry	1340	1340	1	11/02/18	11/05/18 13:00	WB
Nitrobenzene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
2-Nitrophenol	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
4-Nitrophenol	ND		ug/kg dry	1340	1340	1	11/02/18	11/05/18 13:00	WB

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Cory Koons, Laboratory Manager

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-5

8102623-04 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
SEMIVOLATILE ORGANICS BY EPA METHOD 3540/8270D (GC/MS) (continued)									
Pentachlorophenol	ND		ug/kg dry	1340	1340	1	11/02/18	11/05/18 13:00	WB
Phenanthrene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Phenol	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Pyrene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
1,2,4-Trichlorobenzene	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
2,4,5-Trichlorophenol	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
2,4,6-Trichlorophenol	ND		ug/kg dry	269	108	1	11/02/18	11/05/18 13:00	WB
Surrogate: 2-Fluorophenol			*50.4-106.9*	*76 %*	*11/02/18*		*11/05/18 13:00*		
Surrogate: Phenol-d5			*57.1-102.9*	*79 %*	*11/02/18*		*11/05/18 13:00*		
Surrogate: Nitrobenzene-d5			*65.4-105.8*	*74 %*	*11/02/18*		*11/05/18 13:00*		
Surrogate: 2,4,6-Tribromophenol			*40.2-120.7*	*89 %*	*11/02/18*		*11/05/18 13:00*		
Surrogate: 2-Fluorobiphenyl			*59.7-107.6*	*79 %*	*11/02/18*		*11/05/18 13:00*		
Surrogate: Terphenyl-d14			*70-131*	*97 %*	*11/02/18*		*11/05/18 13:00*		
GASOLINE RANGE ORGANICS BY EPA 5030/8015C									
Gasoline-Range Organics	ND		mg/kg dry	0.11	0.11	1	10/31/18	10/31/18 15:55	GM
DIESEL RANGE ORGANICS BY EPA 3540/8015C									
Diesel-Range Organics	ND		mg/kg dry	8.6	8.6	1	11/01/18	11/03/18 01:02	SJA
Surrogate: o-Terphenyl			*70-130*	*81 %*	*11/01/18*		*11/03/18 01:02*		
PERCENT SOLIDS BY ASTM D2216-05									
Percent Solids	**93**		%			1	11/05/18	11/06/18 10:02	KD
POLYCHLORINATED BIPHENYLS BY EPA 3540/8082 (GC/ECD)									
Aroclor-1016	ND		ug/kg dry	89.2	89.2	1	11/02/18	11/06/18 05:36	SJA
Aroclor-1221	ND		ug/kg dry	183	183	1	11/02/18	11/06/18 05:36	SJA
Aroclor-1232	ND		ug/kg dry	89.2	89.2	1	11/02/18	11/06/18 05:36	SJA
Aroclor-1242	ND		ug/kg dry	89.2	89.2	1	11/02/18	11/06/18 05:36	SJA
Aroclor-1248	ND		ug/kg dry	89.2	89.2	1	11/02/18	11/06/18 05:36	SJA
Aroclor-1254	ND		ug/kg dry	89.2	89.2	1	11/02/18	11/06/18 05:36	SJA
Aroclor-1260	ND		ug/kg dry	89.2	89.2	1	11/02/18	11/06/18 05:36	SJA
Aroclor-1262	ND		ug/kg dry	89.2	89.2	1	11/02/18	11/06/18 05:36	SJA
Aroclor-1268	ND		ug/kg dry	89.2	89.2	1	11/02/18	11/06/18 05:36	SJA
Surrogate: Tetrachloro-m-xylene			*40-150*	*97 %*	*11/02/18*		*11/06/18 05:36*		
Surrogate: Decachlorobiphenyl			*40-150*	*62 %*	*11/02/18*		*11/06/18 05:36*		

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Cory Koons, Laboratory Manager

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Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-5

8102623-04 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS BY EPA 3050B/6020A									
Antimony	ND		mg/kg dry	0.269	0.269	1	10/29/18	10/31/18 20:59	CMK
Arsenic	**2.54**		mg/kg dry	0.269	0.269	1	10/29/18	10/31/18 20:59	CMK
Beryllium	ND		mg/kg dry	0.269	0.269	1	10/29/18	10/31/18 20:59	CMK
Cadmium	ND		mg/kg dry	0.269	0.269	1	10/29/18	10/31/18 20:59	CMK
Chromium	**16.0**		mg/kg dry	0.269	0.269	1	10/29/18	10/31/18 20:59	CMK
Copper	**5.13**		mg/kg dry	0.269	0.269	1	10/29/18	10/31/18 20:59	CMK
Lead	**5.96**		mg/kg dry	0.269	0.269	1	10/29/18	10/31/18 20:59	CMK
Mercury	ND		mg/kg dry	0.0134	0.0134	1	10/29/18	10/31/18 20:59	CMK
Nickel	**2.33**		mg/kg dry	0.269	0.269	1	10/29/18	10/31/18 20:59	CMK
Selenium	**0.426**		mg/kg dry	0.269	0.269	1	10/29/18	10/31/18 20:59	CMK
Silver	ND		mg/kg dry	0.269	0.269	1	10/29/18	10/31/18 20:59	CMK
Thallium	ND		mg/kg dry	0.269	0.269	1	10/29/18	10/31/18 20:59	CMK
Zinc	**15.4**		mg/kg dry	1.34	1.34	1	10/29/18	10/31/18 20:59	CMK
TCLP VOLATILE ORGANICS BY EPA METHODS 1311/8260B (GC/MS)									
Benzene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 21:38	GM
2-Butanone (MEK)	ND		ug/L	50.0	50.0	5	11/03/18	11/03/18 21:38	GM
Carbon tetrachloride	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 21:38	GM
Chlorobenzene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 21:38	GM
Chloroform	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 21:38	GM
1,4-Dichlorobenzene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 21:38	GM
1,2-Dichloroethane	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 21:38	GM
1,1-Dichloroethene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 21:38	GM
Tetrachloroethene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 21:38	GM
Trichloroethene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 21:38	GM
Vinyl chloride	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 21:38	GM
Surrogate: 1,2-Dichloroethane-d4			*70-121*	*96 %*			*11/03/18*	*11/03/18 21:38*	
Surrogate: Toluene-d8			*84-138*	*96 %*			*11/03/18*	*11/03/18 21:38*	
Surrogate: 4-Bromofluorobenzene			*59-113*	*100 %*			*11/03/18*	*11/03/18 21:38*	

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410-247-7600
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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-5

8102623-04 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
TCLP SEMIVOLATILE ORGANICS BY EPA METHODS 1311/8270D (GC/MS)									
1,4-Dichlorobenzene	ND		ug/L	25.0	25.0	1	10/30/18	10/31/18 15:57	WB
2,4-Dinitrotoluene	ND		ug/L	25.0	25.0	1	10/30/18	10/31/18 15:57	WB
Hexachlorobenzene	ND		ug/L	25.0	25.0	1	10/30/18	10/31/18 15:57	WB
Hexachlorobutadiene	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 15:57	WB
Hexachloroethane	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 15:57	WB
3&4-Methylphenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 15:57	WB
2-Methylphenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 15:57	WB
Nitrobenzene	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 15:57	WB
Pentachlorophenol	ND		ug/L	125	125	1	10/30/18	10/31/18 15:57	WB
Pyridine	ND		ug/L	125	125	1	10/30/18	10/31/18 15:57	WB
2,4,5-Trichlorophenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 15:57	WB
2,4,6-Trichlorophenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 15:57	WB
Surrogate: 2-Fluorophenol			*23-121*	*34 %*		*10/30/18*		*10/31/18 15:57*	
Surrogate: Phenol-d5			*24-113*	*29 %*		*10/30/18*		*10/31/18 15:57*	
Surrogate: Nitrobenzene-d5			*23-120*	*42 %*		*10/30/18*		*10/31/18 15:57*	
Surrogate: 2,4,6-Tribromophenol			*19-122*	*61 %*		*10/30/18*		*10/31/18 15:57*	
Surrogate: 2-Fluorobiphenyl			*30-115*	*41 %*		*10/30/18*		*10/31/18 15:57*	
Surrogate: Terphenyl-d14			*18-137*	*91 %*		*10/30/18*		*10/31/18 15:57*	
TCLP CHLORINATED PESTICIDES BY EPA METHODS 1311/8081 (GC/ECD)									
alpha-Chlordane	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 17:58	SJA
gamma-Chlordane	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 17:58	SJA
Endrin	ND		ug/L	0.500	0.500	1	10/31/18	11/05/18 17:58	SJA
Heptachlor	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 17:58	SJA
Heptachlor epoxide	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 17:58	SJA
Lindane (gamma-BHC)	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 17:58	SJA
Methoxychlor	ND		ug/L	2.50	2.50	1	10/31/18	11/05/18 17:58	SJA
Toxaphene	ND		ug/L	1.00	1.00	1	10/31/18	11/05/18 17:58	SJA
Surrogate: Tetrachloro-m-xylene			*50-150*	*56 %*		*10/31/18*		*11/05/18 17:58*	
Surrogate: Decachlorobiphenyl			*50-150*	*98 %*		*10/31/18*		*11/05/18 17:58*	

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-5

8102623-04 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
TCLP CHLORINATED HERBICIDES BY EPA METHOD 1311/8151A (GC/ECD)									
2,4-D	ND		mg/L	0.0800	0.0800	1	10/29/18	11/05/18 17:48	SJA
2,4,5-TP (Silvex)	ND		mg/L	0.0800	0.0800	1	10/29/18	11/05/18 17:48	SJA
Surrogate: DCAA			*20-150*	*94 %*		*10/29/18*		*11/05/18 17:48*	
TCLP METALS BY EPA METHODS 1311/3010A/6020A (ICP-MS)									
Arsenic	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:23	CMK
Barium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:23	CMK
Cadmium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:23	CMK
Chromium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:23	CMK
Lead	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:23	CMK
Mercury	ND		mg/L	0.0100	0.0100	1	11/01/18	11/01/18 23:23	CMK
Selenium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:23	CMK
Silver	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:23	CMK
EPA 7199 Performed at Pace Analytical Services, Inc. - Ormond Beach Lab									
Hexavalent Chromium	ND		ug/kg dry	300	300		10/26/18		PN
EPA 9012 Performed at Pace Analytical Services, Inc. - Ormond Beach Lab									
Cyanide	ND		mg/kg dry	0.31	0.18	1	11/06/18	11/06/18 19:33	JDW
Dioxins and Furans by Isotope Dilution HRGC/HRMS Performed at PACE-MN									
1,2,3,4,6,7,8-HpCDD	**5.6**		ng/Kg	5.0	0.68	1	10/31/18	11/03/18 12:29	JRH
1,2,3,4,6,7,8-HpCDF	ND		ng/Kg	5.0	0.42	1	10/31/18	11/03/18 12:29	JRH
1,2,3,4,7,8,9-HpCDF	ND		ng/Kg	5.0	0.54	1	10/31/18	11/03/18 12:29	JRH
1,2,3,4,7,8-HxCDD	ND		ng/Kg	5.0	0.28	1	10/31/18	11/03/18 12:29	JRH
1,2,3,4,7,8-HxCDF	ND		ng/Kg	5.0	0.21	1	10/31/18	11/03/18 12:29	JRH
1,2,3,6,7,8-HxCDD	ND		ng/Kg	5.0	0.32	1	10/31/18	11/03/18 12:29	JRH
1,2,3,6,7,8-HxCDF	ND		ng/Kg	5.0	0.19	1	10/31/18	11/03/18 12:29	JRH
1,2,3,7,8,9-HxCDD	ND		ng/Kg	5.0	0.24	1	10/31/18	11/03/18 12:29	JRH
1,2,3,7,8,9-HxCDF	ND		ng/Kg	5.0	0.26	1	10/31/18	11/03/18 12:29	JRH
1,2,3,7,8-PeCDD	ND		ng/Kg	5.0	0.26	1	10/31/18	11/03/18 12:29	JRH
1,2,3,7,8-PeCDF	ND		ng/Kg	5.0	0.20	1	10/31/18	11/03/18 12:29	JRH
2,3,4,6,7,8-HxCDF	ND		ng/Kg	5.0	0.23	1	10/31/18	11/03/18 12:29	JRH
2,3,4,7,8-PeCDF	ND		ng/Kg	5.0	0.14	1	10/31/18	11/03/18 12:29	JRH
2,3,7,8-TCDD	ND		ng/Kg	1.0	0.62	1	10/31/18	11/03/18 12:29	JRH
2,3,7,8-TCDF	ND		ng/Kg	1.0	0.21	1	10/31/18	11/03/18 12:29	JRH

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Cory Koons, Laboratory Manager

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410-247-7600
www.mdspectral.com

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-5

8102623-04 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
Dioxins and Furans by Isotope Dilution HRGC/HRMS Performed at PACE-MN (continued)									
OCDD	**740**		ng/Kg	10	1.4	1	10/31/18	11/03/18 12:29	JRH
OCDF	ND		ng/Kg	10	0.56	1	10/31/18	11/03/18 12:29	JRH
Total HpCDD	**39**		ng/Kg	5.0	0.68	1	10/31/18	11/03/18 12:29	JRH
Total HpCDF	ND		ng/Kg	5.0	0.48	1	10/31/18	11/03/18 12:29	JRH
Total HxCDD	**19**		ng/Kg	5.0	0.28	1	10/31/18	11/03/18 12:29	JRH
Total HxCDF	ND		ng/Kg	5.0	0.22	1	10/31/18	11/03/18 12:29	JRH
Total PeCDD	ND		ng/Kg	5.0	0.26	1	10/31/18	11/03/18 12:29	JRH
Total PeCDF	ND		ng/Kg	5.0	0.17	1	10/31/18	11/03/18 12:29	JRH
Total TCDD	ND		ng/Kg	1.0	0.62	1	10/31/18	11/03/18 12:29	JRH
Total TCDF	ND		ng/Kg	1.0	0.21	1	10/31/18	11/03/18 12:29	JRH
Surrogate: 1,2,3,4,6,7,8-HpCDD-13C			*23.0-140.0*	*93 %*			*10/31/18*	*11/03/18 12:29*	
Surrogate: 1,2,3,4,6,7,8-HpCDF-13C			*28.0-143.0*	*87 %*			*10/31/18*	*11/03/18 12:29*	
Surrogate: 1,2,3,4,7,8,9-HpCDF-13C			*26.0-138.0*	*84 %*			*10/31/18*	*11/03/18 12:29*	
Surrogate: 1,2,3,4,7,8-HxCDD-13C			*32.0-141.0*	*95 %*			*10/31/18*	*11/03/18 12:29*	
Surrogate: 1,2,3,4,7,8-HxCDF-13C			*26.0-152.0*	*83 %*			*10/31/18*	*11/03/18 12:29*	
Surrogate: 1,2,3,6,7,8-HxCDD-13C			*28.0-130.0*	*90 %*			*10/31/18*	*11/03/18 12:29*	
Surrogate: 1,2,3,6,7,8-HxCDF-13C			*26.0-123.0*	*85 %*			*10/31/18*	*11/03/18 12:29*	
Surrogate: 1,2,3,7,8,9-HxCDF-13C			*29.0-147.0*	*76 %*			*10/31/18*	*11/03/18 12:29*	
Surrogate: 1,2,3,7,8-PeCDD-13C			*25.0-181.0*	*105 %*			*10/31/18*	*11/03/18 12:29*	
Surrogate: 1,2,3,7,8-PeCDF-13C			*24.0-185.0*	*81 %*			*10/31/18*	*11/03/18 12:29*	
Surrogate: 2,3,4,6,7,8-HxCDF-13C			*28.0-136.0*	*83 %*			*10/31/18*	*11/03/18 12:29*	
Surrogate: 2,3,4,7,8-PeCDF-13C			*21.0-178.0*	*88 %*			*10/31/18*	*11/03/18 12:29*	
Surrogate: 2,3,7,8-TCDD-13C			*25.0-164.0*	*74 %*			*10/31/18*	*11/03/18 12:29*	
Surrogate: 2,3,7,8-TCDF-13C			*24.0-169.0*	*68 %*			*10/31/18*	*11/03/18 12:29*	
Surrogate: OCDD-13C			*17.0-157.0*	*68 %*			*10/31/18*	*11/03/18 12:29*	

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-6

8102623-05 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)									
Acetone	ND		ug/kg dry	11.4	11.4	1	10/30/18	10/30/18 18:43	GM
tert-Amyl alcohol (TAA)	ND		ug/kg dry	56.8	56.8	1	10/30/18	10/30/18 18:43	GM
tert-Amyl methyl ether (TAME)	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Benzene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Bromobenzene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Bromochloromethane	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Bromodichloromethane	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Bromoform	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Bromomethane	ND		ug/kg dry	5.7	5.7	1	10/30/18	10/30/18 18:43	GM
tert-Butanol (TBA)	ND		ug/kg dry	56.8	56.8	1	10/30/18	10/30/18 18:43	GM
2-Butanone (MEK)	ND		ug/kg dry	11.4	11.4	1	10/30/18	10/30/18 18:43	GM
n-Butylbenzene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
sec-Butylbenzene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
tert-Butylbenzene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Carbon disulfide	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Carbon tetrachloride	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Chlorobenzene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Chloroethane	ND		ug/kg dry	5.7	5.7	1	10/30/18	10/30/18 18:43	GM
Chloroform	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Chloromethane	ND		ug/kg dry	5.7	5.7	1	10/30/18	10/30/18 18:43	GM
2-Chlorotoluene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
4-Chlorotoluene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
1,2-Dibromo-3-chloropropane	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Dibromochloromethane	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
1,2-Dibromoethane (EDB)	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Dibromomethane	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
1,2-Dichlorobenzene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
1,3-Dichlorobenzene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
1,4-Dichlorobenzene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Dichlorodifluoromethane	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
1,1-Dichloroethane	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
1,2-Dichloroethane	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
1,1-Dichloroethene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM

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410-247-7600
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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-6

8102623-05 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
cis-1,2-Dichloroethene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
trans-1,2-Dichloroethene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Dichlorofluoromethane	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
1,2-Dichloropropane	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
1,3-Dichloropropane	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
2,2-Dichloropropane	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
1,1-Dichloropropene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
cis-1,3-Dichloropropene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
trans-1,3-Dichloropropene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Diisopropyl ether (DIPE)	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Ethyl tert-butyl ether (ETBE)	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Ethylbenzene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Hexachlorobutadiene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
2-Hexanone	ND		ug/kg dry	11.4	11.4	1	10/30/18	10/30/18 18:43	GM
Isopropylbenzene (Cumene)	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
4-Isopropyltoluene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
4-Methyl-2-pentanone	ND		ug/kg dry	11.4	11.4	1	10/30/18	10/30/18 18:43	GM
Methylene chloride	ND		ug/kg dry	22.7	22.7	1	10/30/18	10/30/18 18:43	GM
Naphthalene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
n-Propylbenzene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Styrene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
1,1,1,2-Tetrachloroethane	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
1,1,2,2-Tetrachloroethane	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Tetrachloroethene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Toluene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
1,2,3-Trichlorobenzene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
1,2,4-Trichlorobenzene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
1,1,1-Trichloroethane	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
1,1,2-Trichloroethane	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Trichloroethene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Trichlorofluoromethane (Freon 11)	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
1,2,3-Trichloropropane	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM

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Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-6

8102623-05 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
1,2,4-Trimethylbenzene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
1,3,5-Trimethylbenzene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Vinyl chloride	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
o-Xylene	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
m- & p-Xylenes	ND		ug/kg dry	5.7	2.3	1	10/30/18	10/30/18 18:43	GM
Surrogate: 1,2-Dichloroethane-d4			*70-130*	*99 %*		*10/30/18*		*10/30/18 18:43*	
Surrogate: Toluene-d8			*75-120*	*88 %*		*10/30/18*		*10/30/18 18:43*	
Surrogate: 4-Bromofluorobenzene			*65-120*	*102 %*		*10/30/18*		*10/30/18 18:43*	
SEMIVOLATILE ORGANICS BY EPA METHOD 3540/8270D (GC/MS)									
Acenaphthene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Acenaphthylene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Anthracene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Benzo[a]anthracene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Benzo[b]fluoranthene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Benzo[k]fluoranthene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Benzo[ghi]perylene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Benzo[a]pyrene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
4-Bromophenyl phenyl ether	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Butyl benzyl phthalate	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Carbazole	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
4-Chloro-3-methylphenol	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
4-Chloroaniline	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Bis(2-chloroethoxy)methane	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Bis(2-chloroethyl) ether	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
2,2'-Oxybis(1-Chloropropane)	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
2-Chloronaphthalene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
2-Chlorophenol	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
4-Chlorophenyl phenyl ether	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Chrysene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Di-n-butyl phthalate	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Di-n-octyl phthalate	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Dibenzo[a,h]anthracene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Dibenzofuran	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-6

8102623-05 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
SEMIVOLATILE ORGANICS BY EPA METHOD 3540/8270D (GC/MS) (continued)									
1,2-Dichlorobenzene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
1,3-Dichlorobenzene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
1,4-Dichlorobenzene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
3,3-Dichlorobenzidine	ND		ug/kg dry	568	568	1	11/02/18	11/05/18 13:23	WB
2,4-Dichlorophenol	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Diethyl phthalate	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Dimethyl phthalate	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
2,4-Dimethylphenol	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
2-Methyl-4,6-dinitrophenol	ND		ug/kg dry	1420	1420	1	11/02/18	11/05/18 13:23	WB
2,4-Dinitrophenol	ND		ug/kg dry	1420	1420	1	11/02/18	11/05/18 13:23	WB
2,4-Dinitrotoluene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
2,6-Dinitrotoluene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Bis(2-ethylhexyl) phthalate	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Fluoranthene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Fluorene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Hexachlorobenzene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Hexachlorobutadiene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Hexachlorocyclopentadiene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Hexachloroethane	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Indeno[1,2,3-cd]pyrene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Isophorone	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
2-Methylnaphthalene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
3&4-Methylphenol	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
2-Methylphenol	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
N-Nitroso-di-n-propylamine	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
N-Nitrosodiphenylamine	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Naphthalene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
2-Nitroaniline	ND		ug/kg dry	1420	1420	1	11/02/18	11/05/18 13:23	WB
3-Nitroaniline	ND		ug/kg dry	1420	1420	1	11/02/18	11/05/18 13:23	WB
4-Nitroaniline	ND		ug/kg dry	1420	1420	1	11/02/18	11/05/18 13:23	WB
Nitrobenzene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
2-Nitrophenol	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
4-Nitrophenol	ND		ug/kg dry	1420	1420	1	11/02/18	11/05/18 13:23	WB

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Cory Koons, Laboratory Manager

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-6

8102623-05 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
SEMIVOLATILE ORGANICS BY EPA METHOD 3540/8270D (GC/MS) (continued)									
Pentachlorophenol	ND		ug/kg dry	1420	1420	1	11/02/18	11/05/18 13:23	WB
Phenanthrene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Phenol	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Pyrene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
1,2,4-Trichlorobenzene	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
2,4,5-Trichlorophenol	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
2,4,6-Trichlorophenol	ND		ug/kg dry	284	114	1	11/02/18	11/05/18 13:23	WB
Surrogate: 2-Fluorophenol			*50.4-106.9*	*71 %*	*11/02/18*		*11/05/18 13:23*		
Surrogate: Phenol-d5			*57.1-102.9*	*75 %*	*11/02/18*		*11/05/18 13:23*		
Surrogate: Nitrobenzene-d5			*65.4-105.8*	*72 %*	*11/02/18*		*11/05/18 13:23*		
Surrogate: 2,4,6-Tribromophenol			*40.2-120.7*	*85 %*	*11/02/18*		*11/05/18 13:23*		
Surrogate: 2-Fluorobiphenyl			*59.7-107.6*	*77 %*	*11/02/18*		*11/05/18 13:23*		
Surrogate: Terphenyl-d14			*70-131*	*97 %*	*11/02/18*		*11/05/18 13:23*		
GASOLINE RANGE ORGANICS BY EPA 5030/8015C									
Gasoline-Range Organics	ND		mg/kg dry	0.11	0.11	1	10/31/18	10/31/18 16:28	GM
DIESEL RANGE ORGANICS BY EPA 3540/8015C									
Diesel-Range Organics	ND		mg/kg dry	9.1	9.1	1	11/01/18	11/03/18 01:26	SJA
Surrogate: o-Terphenyl			*70-130*	*84 %*	*11/01/18*		*11/03/18 01:26*		
PERCENT SOLIDS BY ASTM D2216-05									
Percent Solids	**88**		%			1	11/05/18	11/06/18 10:02	KD
POLYCHLORINATED BIPHENYLS BY EPA 3540/8082 (GC/ECD)									
Aroclor-1016	ND		ug/kg dry	94.3	94.3	1	11/02/18	11/06/18 06:02	SJA
Aroclor-1221	ND		ug/kg dry	193	193	1	11/02/18	11/06/18 06:02	SJA
Aroclor-1232	ND		ug/kg dry	94.3	94.3	1	11/02/18	11/06/18 06:02	SJA
Aroclor-1242	ND		ug/kg dry	94.3	94.3	1	11/02/18	11/06/18 06:02	SJA
Aroclor-1248	ND		ug/kg dry	94.3	94.3	1	11/02/18	11/06/18 06:02	SJA
Aroclor-1254	ND		ug/kg dry	94.3	94.3	1	11/02/18	11/06/18 06:02	SJA
Aroclor-1260	ND		ug/kg dry	94.3	94.3	1	11/02/18	11/06/18 06:02	SJA
Aroclor-1262	ND		ug/kg dry	94.3	94.3	1	11/02/18	11/06/18 06:02	SJA
Aroclor-1268	ND		ug/kg dry	94.3	94.3	1	11/02/18	11/06/18 06:02	SJA
Surrogate: Tetrachloro-m-xylene			*40-150*	*93 %*	*11/02/18*		*11/06/18 06:02*		
Surrogate: Decachlorobiphenyl			*40-150*	*70 %*	*11/02/18*		*11/06/18 06:02*		

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Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-6

8102623-05 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS BY EPA 3050B/6020A									
Antimony	ND		mg/kg dry	0.284	0.284	1	10/29/18	10/31/18 21:06	CMK
Arsenic	**3.13**		mg/kg dry	0.284	0.284	1	10/29/18	10/31/18 21:06	CMK
Beryllium	ND		mg/kg dry	0.284	0.284	1	10/29/18	10/31/18 21:06	CMK
Cadmium	ND		mg/kg dry	0.284	0.284	1	10/29/18	10/31/18 21:06	CMK
Chromium	**19.4**		mg/kg dry	0.284	0.284	1	10/29/18	10/31/18 21:06	CMK
Copper	**8.44**		mg/kg dry	0.284	0.284	1	10/29/18	10/31/18 21:06	CMK
Lead	**3.83**		mg/kg dry	0.284	0.284	1	10/29/18	10/31/18 21:06	CMK
Mercury	ND		mg/kg dry	0.0142	0.0142	1	10/29/18	10/31/18 21:06	CMK
Nickel	**5.73**		mg/kg dry	0.284	0.284	1	10/29/18	10/31/18 21:06	CMK
Selenium	ND		mg/kg dry	0.284	0.284	1	10/29/18	10/31/18 21:06	CMK
Silver	ND		mg/kg dry	0.284	0.284	1	10/29/18	10/31/18 21:06	CMK
Thallium	ND		mg/kg dry	0.284	0.284	1	10/29/18	10/31/18 21:06	CMK
Zinc	**16.0**		mg/kg dry	1.42	1.42	1	10/29/18	10/31/18 21:06	CMK
TCLP VOLATILE ORGANICS BY EPA METHODS 1311/8260B (GC/MS)									
Benzene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 22:02	GM
2-Butanone (MEK)	ND		ug/L	50.0	50.0	5	11/03/18	11/03/18 22:02	GM
Carbon tetrachloride	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 22:02	GM
Chlorobenzene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 22:02	GM
Chloroform	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 22:02	GM
1,4-Dichlorobenzene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 22:02	GM
1,2-Dichloroethane	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 22:02	GM
1,1-Dichloroethene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 22:02	GM
Tetrachloroethene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 22:02	GM
Trichloroethene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 22:02	GM
Vinyl chloride	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 22:02	GM
Surrogate: 1,2-Dichloroethane-d4			*70-121*	*98 %*	*11/03/18*		*11/03/18 22:02*		
Surrogate: Toluene-d8			*84-138*	*96 %*	*11/03/18*		*11/03/18 22:02*		
Surrogate: 4-Bromofluorobenzene			*59-113*	*101 %*	*11/03/18*		*11/03/18 22:02*		

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-6

8102623-05 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
TCLP SEMIVOLATILE ORGANICS BY EPA METHODS 1311/8270D (GC/MS)									
1,4-Dichlorobenzene	ND		ug/L	25.0	25.0	1	10/30/18	10/31/18 16:20	WB
2,4-Dinitrotoluene	ND		ug/L	25.0	25.0	1	10/30/18	10/31/18 16:20	WB
Hexachlorobenzene	ND		ug/L	25.0	25.0	1	10/30/18	10/31/18 16:20	WB
Hexachlorobutadiene	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 16:20	WB
Hexachloroethane	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 16:20	WB
3&4-Methylphenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 16:20	WB
2-Methylphenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 16:20	WB
Nitrobenzene	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 16:20	WB
Pentachlorophenol	ND		ug/L	125	125	1	10/30/18	10/31/18 16:20	WB
Pyridine	ND		ug/L	125	125	1	10/30/18	10/31/18 16:20	WB
2,4,5-Trichlorophenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 16:20	WB
2,4,6-Trichlorophenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 16:20	WB
Surrogate: 2-Fluorophenol			*23-121*	*34 %*		*10/30/18*		*10/31/18 16:20*	
Surrogate: Phenol-d5			*24-113*	*30 %*		*10/30/18*		*10/31/18 16:20*	
Surrogate: Nitrobenzene-d5			*23-120*	*42 %*		*10/30/18*		*10/31/18 16:20*	
Surrogate: 2,4,6-Tribromophenol			*19-122*	*62 %*		*10/30/18*		*10/31/18 16:20*	
Surrogate: 2-Fluorobiphenyl			*30-115*	*42 %*		*10/30/18*		*10/31/18 16:20*	
Surrogate: Terphenyl-d14			*18-137*	*89 %*		*10/30/18*		*10/31/18 16:20*	
TCLP CHLORINATED PESTICIDES BY EPA METHODS 1311/8081 (GC/ECD)									
alpha-Chlordane	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 18:25	SJA
gamma-Chlordane	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 18:25	SJA
Endrin	ND		ug/L	0.500	0.500	1	10/31/18	11/05/18 18:25	SJA
Heptachlor	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 18:25	SJA
Heptachlor epoxide	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 18:25	SJA
Lindane (gamma-BHC)	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 18:25	SJA
Methoxychlor	ND		ug/L	2.50	2.50	1	10/31/18	11/05/18 18:25	SJA
Toxaphene	ND		ug/L	1.00	1.00	1	10/31/18	11/05/18 18:25	SJA
Surrogate: Tetrachloro-m-xylene			*50-150*	*58 %*		*10/31/18*		*11/05/18 18:25*	
Surrogate: Decachlorobiphenyl			*50-150*	*99 %*		*10/31/18*		*11/05/18 18:25*	

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-6

8102623-05 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
TCLP CHLORINATED HERBICIDES BY EPA METHOD 1311/8151A (GC/ECD)									
2,4-D	ND		mg/L	0.0800	0.0800	1	10/29/18	11/05/18 18:17	SJA
2,4,5-TP (Silvex)	ND		mg/L	0.0800	0.0800	1	10/29/18	11/05/18 18:17	SJA
Surrogate: DCAA			*20-150*	*99 %*		*10/29/18*		*11/05/18 18:17*	
TCLP METALS BY EPA METHODS 1311/3010A/6020A (ICP-MS)									
Arsenic	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:28	CMK
Barium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:28	CMK
Cadmium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:28	CMK
Chromium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:28	CMK
Lead	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:28	CMK
Mercury	ND		mg/L	0.0100	0.0100	1	11/01/18	11/01/18 23:28	CMK
Selenium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:28	CMK
Silver	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:28	CMK
EPA 7199 Performed at Pace Analytical Services, Inc. - Ormond Beach Lab									
Hexavalent Chromium	ND		ug/kg dry	300	300		10/26/18		PN
EPA 9012 Performed at Pace Analytical Services, Inc. - Ormond Beach Lab									
Cyanide	**0.42**		mg/kg dry	0.30	0.17	1	11/06/18	11/06/18 19:36	JDW
Dioxins and Furans by Isotope Dilution HRGC/HRMS Performed at PACE-MN									
1,2,3,4,6,7,8-HpCDD	**16**		ng/Kg	5.0	0.63	1	10/31/18	11/03/18 13:15	JRH
1,2,3,4,6,7,8-HpCDF	ND		ng/Kg	5.0	0.29	1	10/31/18	11/03/18 13:15	JRH
1,2,3,4,7,8,9-HpCDF	ND		ng/Kg	5.0	0.41	1	10/31/18	11/03/18 13:15	JRH
1,2,3,4,7,8-HxCDD	ND		ng/Kg	5.0	0.33	1	10/31/18	11/03/18 13:15	JRH
1,2,3,4,7,8-HxCDF	ND		ng/Kg	5.0	0.21	1	10/31/18	11/03/18 13:15	JRH
1,2,3,6,7,8-HxCDD	ND		ng/Kg	5.0	0.23	1	10/31/18	11/03/18 13:15	JRH
1,2,3,6,7,8-HxCDF	ND		ng/Kg	5.0	0.33	1	10/31/18	11/03/18 13:15	JRH
1,2,3,7,8,9-HxCDD	ND		ng/Kg	5.0	0.27	1	10/31/18	11/03/18 13:15	JRH
1,2,3,7,8,9-HxCDF	ND		ng/Kg	5.0	0.34	1	10/31/18	11/03/18 13:15	JRH
1,2,3,7,8-PeCDD	ND		ng/Kg	5.0	0.23	1	10/31/18	11/03/18 13:15	JRH
1,2,3,7,8-PeCDF	ND		ng/Kg	5.0	0.22	1	10/31/18	11/03/18 13:15	JRH
2,3,4,6,7,8-HxCDF	ND		ng/Kg	5.0	0.15	1	10/31/18	11/03/18 13:15	JRH
2,3,4,7,8-PeCDF	ND		ng/Kg	5.0	0.10	1	10/31/18	11/03/18 13:15	JRH
2,3,7,8-TCDD	ND		ng/Kg	1.0	0.34	1	10/31/18	11/03/18 13:15	JRH
2,3,7,8-TCDF	ND		ng/Kg	1.0	0.13	1	10/31/18	11/03/18 13:15	JRH

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-6

8102623-05 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
Dioxins and Furans by Isotope Dilution HRGC/HRMS Performed at PACE-MN (continued)									
OCDD	**3500**		ng/Kg	10	1.4	1	10/31/18	11/03/18 13:15	JRH
OCDF	ND		ng/Kg	10	0.90	1	10/31/18	11/03/18 13:15	JRH
Total HpCDD	**30**		ng/Kg	5.0	0.63	1	10/31/18	11/03/18 13:15	JRH
Total HpCDF	ND		ng/Kg	5.0	0.35	1	10/31/18	11/03/18 13:15	JRH
Total HxCDD	ND		ng/Kg	5.0	0.28	1	10/31/18	11/03/18 13:15	JRH
Total HxCDF	ND		ng/Kg	5.0	0.26	1	10/31/18	11/03/18 13:15	JRH
Total PeCDD	ND		ng/Kg	5.0	0.23	1	10/31/18	11/03/18 13:15	JRH
Total PeCDF	ND		ng/Kg	5.0	0.16	1	10/31/18	11/03/18 13:15	JRH
Total TCDD	ND		ng/Kg	1.0	0.34	1	10/31/18	11/03/18 13:15	JRH
Total TCDF	ND		ng/Kg	1.0	0.13	1	10/31/18	11/03/18 13:15	JRH
Surrogate: 1,2,3,4,6,7,8-HpCDD-13C			*23.0-140.0*	*86 %*			*10/31/18*	*11/03/18 13:15*	
Surrogate: 1,2,3,4,6,7,8-HpCDF-13C			*28.0-143.0*	*78 %*			*10/31/18*	*11/03/18 13:15*	
Surrogate: 1,2,3,4,7,8,9-HpCDF-13C			*26.0-138.0*	*80 %*			*10/31/18*	*11/03/18 13:15*	
Surrogate: 1,2,3,4,7,8-HxCDD-13C			*32.0-141.0*	*81 %*			*10/31/18*	*11/03/18 13:15*	
Surrogate: 1,2,3,4,7,8-HxCDF-13C			*26.0-152.0*	*71 %*			*10/31/18*	*11/03/18 13:15*	
Surrogate: 1,2,3,6,7,8-HxCDD-13C			*28.0-130.0*	*76 %*			*10/31/18*	*11/03/18 13:15*	
Surrogate: 1,2,3,6,7,8-HxCDF-13C			*26.0-123.0*	*72 %*			*10/31/18*	*11/03/18 13:15*	
Surrogate: 1,2,3,7,8,9-HxCDF-13C			*29.0-147.0*	*71 %*			*10/31/18*	*11/03/18 13:15*	
Surrogate: 1,2,3,7,8-PeCDD-13C			*25.0-181.0*	*102 %*			*10/31/18*	*11/03/18 13:15*	
Surrogate: 1,2,3,7,8-PeCDF-13C			*24.0-185.0*	*75 %*			*10/31/18*	*11/03/18 13:15*	
Surrogate: 2,3,4,6,7,8-HxCDF-13C			*28.0-136.0*	*73 %*			*10/31/18*	*11/03/18 13:15*	
Surrogate: 2,3,4,7,8-PeCDF-13C			*21.0-178.0*	*83 %*			*10/31/18*	*11/03/18 13:15*	
Surrogate: 2,3,7,8-TCDD-13C			*25.0-164.0*	*72 %*			*10/31/18*	*11/03/18 13:15*	
Surrogate: 2,3,7,8-TCDF-13C			*24.0-169.0*	*67 %*			*10/31/18*	*11/03/18 13:15*	
Surrogate: OCDD-13C			*17.0-157.0*	*69 %*			*10/31/18*	*11/03/18 13:15*	

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Cory Koons, Laboratory Manager

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1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-7

8102623-06 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)									
Acetone	ND		ug/kg dry	11.1	11.1	1	10/30/18	10/30/18 19:10	GM
tert-Amyl alcohol (TAA)	ND		ug/kg dry	55.6	55.6	1	10/30/18	10/30/18 19:10	GM
tert-Amyl methyl ether (TAME)	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Benzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Bromobenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Bromochloromethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Bromodichloromethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Bromoform	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Bromomethane	ND		ug/kg dry	5.6	5.6	1	10/30/18	10/30/18 19:10	GM
tert-Butanol (TBA)	ND		ug/kg dry	55.6	55.6	1	10/30/18	10/30/18 19:10	GM
2-Butanone (MEK)	ND		ug/kg dry	11.1	11.1	1	10/30/18	10/30/18 19:10	GM
n-Butylbenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
sec-Butylbenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
tert-Butylbenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Carbon disulfide	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Carbon tetrachloride	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Chlorobenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Chloroethane	ND		ug/kg dry	5.6	5.6	1	10/30/18	10/30/18 19:10	GM
Chloroform	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Chloromethane	ND		ug/kg dry	5.6	5.6	1	10/30/18	10/30/18 19:10	GM
2-Chlorotoluene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
4-Chlorotoluene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
1,2-Dibromo-3-chloropropane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Dibromochloromethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
1,2-Dibromoethane (EDB)	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Dibromomethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
1,2-Dichlorobenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
1,3-Dichlorobenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
1,4-Dichlorobenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Dichlorodifluoromethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
1,1-Dichloroethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
1,2-Dichloroethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
1,1-Dichloroethene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM

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Cory Koons, Laboratory Manager

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-7

8102623-06 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
cis-1,2-Dichloroethene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
trans-1,2-Dichloroethene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Dichlorofluoromethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
1,2-Dichloropropane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
1,3-Dichloropropane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
2,2-Dichloropropane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
1,1-Dichloropropene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
cis-1,3-Dichloropropene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
trans-1,3-Dichloropropene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Diisopropyl ether (DIPE)	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Ethyl tert-butyl ether (ETBE)	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Ethylbenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Hexachlorobutadiene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
2-Hexanone	ND		ug/kg dry	11.1	11.1	1	10/30/18	10/30/18 19:10	GM
Isopropylbenzene (Cumene)	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
4-Isopropyltoluene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
4-Methyl-2-pentanone	ND		ug/kg dry	11.1	11.1	1	10/30/18	10/30/18 19:10	GM
Methylene chloride	ND		ug/kg dry	22.2	22.2	1	10/30/18	10/30/18 19:10	GM
Naphthalene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
n-Propylbenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Styrene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
1,1,1,2-Tetrachloroethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
1,1,2,2-Tetrachloroethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Tetrachloroethene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Toluene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
1,2,3-Trichlorobenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
1,2,4-Trichlorobenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
1,1,1-Trichloroethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
1,1,2-Trichloroethane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Trichloroethene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Trichlorofluoromethane (Freon 11)	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
1,2,3-Trichloropropane	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM

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Cory Koons, Laboratory Manager

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-7

8102623-06 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
1,2,4-Trimethylbenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
1,3,5-Trimethylbenzene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Vinyl chloride	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
o-Xylene	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
m- & p-Xylenes	ND		ug/kg dry	5.6	2.2	1	10/30/18	10/30/18 19:10	GM
Surrogate: 1,2-Dichloroethane-d4			*70-130*	*97 %*		*10/30/18*		*10/30/18 19:10*	
Surrogate: Toluene-d8			*75-120*	*88 %*		*10/30/18*		*10/30/18 19:10*	
Surrogate: 4-Bromofluorobenzene			*65-120*	*101 %*		*10/30/18*		*10/30/18 19:10*	
SEMIVOLATILE ORGANICS BY EPA METHOD 3540/8270D (GC/MS)									
Acenaphthene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Acenaphthylene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Anthracene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Benzo[a]anthracene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Benzo[b]fluoranthene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Benzo[k]fluoranthene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Benzo[ghi]perylene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Benzo[a]pyrene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
4-Bromophenyl phenyl ether	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Butyl benzyl phthalate	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Carbazole	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
4-Chloro-3-methylphenol	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
4-Chloroaniline	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Bis(2-chloroethoxy)methane	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Bis(2-chloroethyl) ether	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
2,2'-Oxybis(1-Chloropropane)	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
2-Chloronaphthalene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
2-Chlorophenol	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
4-Chlorophenyl phenyl ether	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Chrysene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Di-n-butyl phthalate	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Di-n-octyl phthalate	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Dibenzo[a,h]anthracene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Dibenzofuran	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-7

8102623-06 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
SEMIVOLATILE ORGANICS BY EPA METHOD 3540/8270D (GC/MS) (continued)									
1,2-Dichlorobenzene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
1,3-Dichlorobenzene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
1,4-Dichlorobenzene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
3,3-Dichlorobenzidine	ND		ug/kg dry	556	556	1	11/02/18	11/05/18 13:46	WB
2,4-Dichlorophenol	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Diethyl phthalate	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Dimethyl phthalate	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
2,4-Dimethylphenol	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
2-Methyl-4,6-dinitrophenol	ND		ug/kg dry	1390	1390	1	11/02/18	11/05/18 13:46	WB
2,4-Dinitrophenol	ND		ug/kg dry	1390	1390	1	11/02/18	11/05/18 13:46	WB
2,4-Dinitrotoluene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
2,6-Dinitrotoluene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Bis(2-ethylhexyl) phthalate	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Fluoranthene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Fluorene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Hexachlorobenzene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Hexachlorobutadiene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Hexachlorocyclopentadiene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Hexachloroethane	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Indeno[1,2,3-cd]pyrene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Isophorone	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
2-Methylnaphthalene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
3&4-Methylphenol	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
2-Methylphenol	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
N-Nitroso-di-n-propylamine	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
N-Nitrosodiphenylamine	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Naphthalene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
2-Nitroaniline	ND		ug/kg dry	1390	1390	1	11/02/18	11/05/18 13:46	WB
3-Nitroaniline	ND		ug/kg dry	1390	1390	1	11/02/18	11/05/18 13:46	WB
4-Nitroaniline	ND		ug/kg dry	1390	1390	1	11/02/18	11/05/18 13:46	WB
Nitrobenzene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
2-Nitrophenol	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
4-Nitrophenol	ND		ug/kg dry	1390	1390	1	11/02/18	11/05/18 13:46	WB

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-7

8102623-06 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
SEMIVOLATILE ORGANICS BY EPA METHOD 3540/8270D (GC/MS) (continued)									
Pentachlorophenol	ND		ug/kg dry	1390	1390	1	11/02/18	11/05/18 13:46	WB
Phenanthrene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Phenol	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Pyrene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
1,2,4-Trichlorobenzene	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
2,4,5-Trichlorophenol	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
2,4,6-Trichlorophenol	ND		ug/kg dry	278	111	1	11/02/18	11/05/18 13:46	WB
Surrogate: 2-Fluorophenol			*50.4-106.9*	*59 %*	*11/02/18*		*11/05/18 13:46*		
Surrogate: Phenol-d5			*57.1-102.9*	*63 %*	*11/02/18*		*11/05/18 13:46*		
Surrogate: Nitrobenzene-d5			*65.4-105.8*	*61 %*	*11/02/18*		*11/05/18 13:46*		*S-BN*
Surrogate: 2,4,6-Tribromophenol			*40.2-120.7*	*73 %*	*11/02/18*		*11/05/18 13:46*		
Surrogate: 2-Fluorobiphenyl			*59.7-107.6*	*63 %*	*11/02/18*		*11/05/18 13:46*		
Surrogate: Terphenyl-d14			*70-131*	*92 %*	*11/02/18*		*11/05/18 13:46*		
GASOLINE RANGE ORGANICS BY EPA 5030/8015C									
Gasoline-Range Organics	ND		mg/kg dry	0.11	0.11	1	10/31/18	10/31/18 17:01	GM
DIESEL RANGE ORGANICS BY EPA 3540/8015C									
Diesel-Range Organics	ND		mg/kg dry	8.9	8.9	1	11/01/18	11/03/18 01:50	SJA
Surrogate: o-Terphenyl			*70-130*	*86 %*	*11/01/18*		*11/03/18 01:50*		
PERCENT SOLIDS BY ASTM D2216-05									
Percent Solids	**90**		%			1	11/05/18	11/06/18 10:02	KD
POLYCHLORINATED BIPHENYLS BY EPA 3540/8082 (GC/ECD)									
Aroclor-1016	ND		ug/kg dry	92.2	92.2	1	11/02/18	11/06/18 06:29	SJA
Aroclor-1221	ND		ug/kg dry	189	189	1	11/02/18	11/06/18 06:29	SJA
Aroclor-1232	ND		ug/kg dry	92.2	92.2	1	11/02/18	11/06/18 06:29	SJA
Aroclor-1242	ND		ug/kg dry	92.2	92.2	1	11/02/18	11/06/18 06:29	SJA
Aroclor-1248	ND		ug/kg dry	92.2	92.2	1	11/02/18	11/06/18 06:29	SJA
Aroclor-1254	ND		ug/kg dry	92.2	92.2	1	11/02/18	11/06/18 06:29	SJA
Aroclor-1260	ND		ug/kg dry	92.2	92.2	1	11/02/18	11/06/18 06:29	SJA
Aroclor-1262	ND		ug/kg dry	92.2	92.2	1	11/02/18	11/06/18 06:29	SJA
Aroclor-1268	ND		ug/kg dry	92.2	92.2	1	11/02/18	11/06/18 06:29	SJA
Surrogate: Tetrachloro-m-xylene			*40-150*	*101 %*	*11/02/18*		*11/06/18 06:29*		
Surrogate: Decachlorobiphenyl			*40-150*	*79 %*	*11/02/18*		*11/06/18 06:29*		

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Cory Koons, Laboratory Manager

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Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-7

8102623-06 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS BY EPA 3050B/6020A									
Antimony	ND		mg/kg dry	0.278	0.278	1	10/29/18	10/31/18 21:14	CMK
Arsenic	**2.19**		mg/kg dry	0.278	0.278	1	10/29/18	10/31/18 21:14	CMK
Beryllium	ND		mg/kg dry	0.278	0.278	1	10/29/18	10/31/18 21:14	CMK
Cadmium	ND		mg/kg dry	0.278	0.278	1	10/29/18	10/31/18 21:14	CMK
Chromium	**14.3**		mg/kg dry	0.278	0.278	1	10/29/18	10/31/18 21:14	CMK
Copper	**3.36**		mg/kg dry	0.278	0.278	1	10/29/18	10/31/18 21:14	CMK
Lead	**5.58**		mg/kg dry	0.278	0.278	1	10/29/18	10/31/18 21:14	CMK
Mercury	ND		mg/kg dry	0.0139	0.0139	1	10/29/18	10/31/18 21:14	CMK
Nickel	**1.88**		mg/kg dry	0.278	0.278	1	10/29/18	10/31/18 21:14	CMK
Selenium	**0.505**		mg/kg dry	0.278	0.278	1	10/29/18	10/31/18 21:14	CMK
Silver	ND		mg/kg dry	0.278	0.278	1	10/29/18	10/31/18 21:14	CMK
Thallium	ND		mg/kg dry	0.278	0.278	1	10/29/18	10/31/18 21:14	CMK
Zinc	**3.88**		mg/kg dry	1.39	1.39	1	10/29/18	10/31/18 21:14	CMK
TCLP VOLATILE ORGANICS BY EPA METHODS 1311/8260B (GC/MS)									
Benzene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 23:58	GM
2-Butanone (MEK)	ND		ug/L	50.0	50.0	5	11/03/18	11/03/18 23:58	GM
Carbon tetrachloride	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 23:58	GM
Chlorobenzene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 23:58	GM
Chloroform	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 23:58	GM
1,4-Dichlorobenzene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 23:58	GM
1,2-Dichloroethane	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 23:58	GM
1,1-Dichloroethene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 23:58	GM
Tetrachloroethene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 23:58	GM
Trichloroethene	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 23:58	GM
Vinyl chloride	ND		ug/L	25.0	25.0	5	11/03/18	11/03/18 23:58	GM
Surrogate: 1,2-Dichloroethane-d4			*70-121*	*98 %*			*11/03/18*	*11/03/18 23:58*	
Surrogate: Toluene-d8			*84-138*	*98 %*			*11/03/18*	*11/03/18 23:58*	
Surrogate: 4-Bromofluorobenzene			*59-113*	*103 %*			*11/03/18*	*11/03/18 23:58*	

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-7

8102623-06 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
TCLP SEMIVOLATILE ORGANICS BY EPA METHODS 1311/8270D (GC/MS)									
1,4-Dichlorobenzene	ND		ug/L	25.0	25.0	1	10/30/18	10/31/18 16:43	WB
2,4-Dinitrotoluene	ND		ug/L	25.0	25.0	1	10/30/18	10/31/18 16:43	WB
Hexachlorobenzene	ND		ug/L	25.0	25.0	1	10/30/18	10/31/18 16:43	WB
Hexachlorobutadiene	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 16:43	WB
Hexachloroethane	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 16:43	WB
3&4-Methylphenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 16:43	WB
2-Methylphenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 16:43	WB
Nitrobenzene	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 16:43	WB
Pentachlorophenol	ND		ug/L	125	125	1	10/30/18	10/31/18 16:43	WB
Pyridine	ND		ug/L	125	125	1	10/30/18	10/31/18 16:43	WB
2,4,5-Trichlorophenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 16:43	WB
2,4,6-Trichlorophenol	ND		ug/L	50.0	50.0	1	10/30/18	10/31/18 16:43	WB
Surrogate: 2-Fluorophenol			*23-121*	*30 %*		*10/30/18*		*10/31/18 16:43*	
Surrogate: Phenol-d5			*24-113*	*26 %*		*10/30/18*		*10/31/18 16:43*	
Surrogate: Nitrobenzene-d5			*23-120*	*37 %*		*10/30/18*		*10/31/18 16:43*	
Surrogate: 2,4,6-Tribromophenol			*19-122*	*54 %*		*10/30/18*		*10/31/18 16:43*	
Surrogate: 2-Fluorobiphenyl			*30-115*	*38 %*		*10/30/18*		*10/31/18 16:43*	
Surrogate: Terphenyl-d14			*18-137*	*95 %*		*10/30/18*		*10/31/18 16:43*	
TCLP CHLORINATED PESTICIDES BY EPA METHODS 1311/8081 (GC/ECD)									
alpha-Chlordane	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 18:52	SJA
gamma-Chlordane	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 18:52	SJA
Endrin	ND		ug/L	0.500	0.500	1	10/31/18	11/05/18 18:52	SJA
Heptachlor	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 18:52	SJA
Heptachlor epoxide	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 18:52	SJA
Lindane (gamma-BHC)	ND		ug/L	0.250	0.250	1	10/31/18	11/05/18 18:52	SJA
Methoxychlor	ND		ug/L	2.50	2.50	1	10/31/18	11/05/18 18:52	SJA
Toxaphene	ND		ug/L	1.00	1.00	1	10/31/18	11/05/18 18:52	SJA
Surrogate: Tetrachloro-m-xylene			*50-150*	*58 %*		*10/31/18*		*11/05/18 18:52*	
Surrogate: Decachlorobiphenyl			*50-150*	*107 %*		*10/31/18*		*11/05/18 18:52*	

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-7

8102623-06 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
TCLP CHLORINATED HERBICIDES BY EPA METHOD 1311/8151A (GC/ECD)									
2,4-D	ND		mg/L	0.0800	0.0800	1	10/29/18	11/05/18 18:47	SJA
2,4,5-TP (Silvex)	ND		mg/L	0.0800	0.0800	1	10/29/18	11/05/18 18:47	SJA
Surrogate: DCAA			*20-150*	*100 %*	*10/29/18*		*11/05/18 18:47*		
TCLP METALS BY EPA METHODS 1311/3010A/6020A (ICP-MS)									
Arsenic	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:32	CMK
Barium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:32	CMK
Cadmium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:32	CMK
Chromium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:32	CMK
Lead	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:32	CMK
Mercury	ND		mg/L	0.0100	0.0100	1	11/01/18	11/01/18 23:32	CMK
Selenium	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:32	CMK
Silver	ND		mg/L	0.500	0.500	1	11/01/18	11/01/18 23:32	CMK
EPA 7199 Performed at Pace Analytical Services, Inc. - Ormond Beach Lab									
Hexavalent Chromium	ND		ug/kg dry	306	306	1	10/26/18		PN
EPA 9012 Performed at Pace Analytical Services, Inc. - Ormond Beach Lab									
Cyanide	ND		mg/kg dry	0.32	0.18	1	11/06/18	11/06/18 19:37	JDW
Dioxins and Furans by Isotope Dilution HRGC/HRMS Performed at PACE-MN									
1,2,3,4,6,7,8-HpCDD	**9.2**		ng/Kg	5.0	0.35	1	10/31/18	11/03/18 14:00	JRH
1,2,3,4,6,7,8-HpCDF	ND		ng/Kg	5.0	0.16	1	10/31/18	11/03/18 14:00	JRH
1,2,3,4,7,8,9-HpCDF	ND		ng/Kg	5.0	0.28	1	10/31/18	11/03/18 14:00	JRH
1,2,3,4,7,8-HxCDD	ND		ng/Kg	5.0	0.13	1	10/31/18	11/03/18 14:00	JRH
1,2,3,4,7,8-HxCDF	ND		ng/Kg	5.0	0.099	1	10/31/18	11/03/18 14:00	JRH
1,2,3,6,7,8-HxCDD	ND		ng/Kg	5.0	0.14	1	10/31/18	11/03/18 14:00	JRH
1,2,3,6,7,8-HxCDF	ND		ng/Kg	5.0	0.086	1	10/31/18	11/03/18 14:00	JRH
1,2,3,7,8,9-HxCDD	ND		ng/Kg	5.0	0.14	1	10/31/18	11/03/18 14:00	JRH
1,2,3,7,8,9-HxCDF	ND		ng/Kg	5.0	0.19	1	10/31/18	11/03/18 14:00	JRH
1,2,3,7,8-PeCDD	ND		ng/Kg	5.0	0.14	1	10/31/18	11/03/18 14:00	JRH
1,2,3,7,8-PeCDF	ND		ng/Kg	5.0	0.17	1	10/31/18	11/03/18 14:00	JRH
2,3,4,6,7,8-HxCDF	ND		ng/Kg	5.0	0.045	1	10/31/18	11/03/18 14:00	JRH
2,3,4,7,8-PeCDF	ND		ng/Kg	5.0	0.060	1	10/31/18	11/03/18 14:00	JRH
2,3,7,8-TCDD	ND		ng/Kg	1.0	0.23	1	10/31/18	11/03/18 14:00	JRH
2,3,7,8-TCDF	ND		ng/Kg	1.0	0.13	1	10/31/18	11/03/18 14:00	JRH

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Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

P-7

8102623-06 (Soil)
Sample Date: 10/26/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
Dioxins and Furans by Isotope Dilution HRGC/HRMS Performed at PACE-MN (continued)									
OCDD	**930**		ng/Kg	10	0.65	1	10/31/18	11/03/18 14:00	JRH
OCDF	ND		ng/Kg	10	0.50	1	10/31/18	11/03/18 14:00	JRH
Total HpCDD	**19**		ng/Kg	5.0	0.35	1	10/31/18	11/03/18 14:00	JRH
Total HpCDF	ND		ng/Kg	5.0	0.22	1	10/31/18	11/03/18 14:00	JRH
Total HxCDD	ND		ng/Kg	5.0	0.14	1	10/31/18	11/03/18 14:00	JRH
Total HxCDF	ND		ng/Kg	5.0	0.11	1	10/31/18	11/03/18 14:00	JRH
Total PeCDD	ND		ng/Kg	5.0	0.14	1	10/31/18	11/03/18 14:00	JRH
Total PeCDF	ND		ng/Kg	5.0	0.11	1	10/31/18	11/03/18 14:00	JRH
Total TCDD	ND		ng/Kg	1.0	0.23	1	10/31/18	11/03/18 14:00	JRH
Total TCDF	ND		ng/Kg	1.0	0.13	1	10/31/18	11/03/18 14:00	JRH

Surrogate: 1,2,3,4,6,7,8-HpCDD-13C	*23.0-140.0*	*104 %*	*10/31/18*	*11/03/18 14:00*
Surrogate: 1,2,3,4,6,7,8-HpCDF-13C	*28.0-143.0*	*102 %*	*10/31/18*	*11/03/18 14:00*
Surrogate: 1,2,3,4,7,8,9-HpCDF-13C	*26.0-138.0*	*90 %*	*10/31/18*	*11/03/18 14:00*
Surrogate: 1,2,3,4,7,8-HxCDD-13C	*32.0-141.0*	*109 %*	*10/31/18*	*11/03/18 14:00*
Surrogate: 1,2,3,4,7,8-HxCDF-13C	*26.0-152.0*	*94 %*	*10/31/18*	*11/03/18 14:00*
Surrogate: 1,2,3,6,7,8-HxCDD-13C	*28.0-130.0*	*105 %*	*10/31/18*	*11/03/18 14:00*
Surrogate: 1,2,3,6,7,8-HxCDF-13C	*26.0-123.0*	*102 %*	*10/31/18*	*11/03/18 14:00*
Surrogate: 1,2,3,7,8,9-HxCDF-13C	*29.0-147.0*	*68 %*	*10/31/18*	*11/03/18 14:00*
Surrogate: 1,2,3,7,8-PeCDD-13C	*25.0-181.0*	*99 %*	*10/31/18*	*11/03/18 14:00*
Surrogate: 1,2,3,7,8-PeCDF-13C	*24.0-185.0*	*75 %*	*10/31/18*	*11/03/18 14:00*
Surrogate: 2,3,4,6,7,8-HxCDF-13C	*28.0-136.0*	*87 %*	*10/31/18*	*11/03/18 14:00*
Surrogate: 2,3,4,7,8-PeCDF-13C	*21.0-178.0*	*82 %*	*10/31/18*	*11/03/18 14:00*
Surrogate: 2,3,7,8-TCDD-13C	*25.0-164.0*	*65 %*	*10/31/18*	*11/03/18 14:00*
Surrogate: 2,3,7,8-TCDF-13C	*24.0-169.0*	*65 %*	*10/31/18*	*11/03/18 14:00*
Surrogate: OCDD-13C	*17.0-157.0*	*79 %*	*10/31/18*	*11/03/18 14:00*

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Analytical Results

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Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

Maryland Spectral Services does not maintain certification for the following analytical parameters:

Maryland Spectral Services

Matrix , Method , Analyte

Soil | 8270 (TCLP) | 1,4-Dichlorobenzene
Soil | 8270 (TCLP) | 2,4-Dinitrotoluene
Soil | 8270 (TCLP) | Hexachlorobenzene
Soil | 8270 (TCLP) | Hexachlorobutadiene
Soil | 8270 (TCLP) | Hexachloroethane
Soil | 8270 (TCLP) | 3&4-Methylphenol
Soil | 8270 (TCLP) | 2-Methylphenol
Soil | 8270 (TCLP) | Nitrobenzene
Soil | 8270 (TCLP) | Pentachlorophenol
Soil | 8270 (TCLP) | Pyridine
Soil | 8270 (TCLP) | 2,4,5-Trichlorophenol
Soil | 8270 (TCLP) | 2,4,6-Trichlorophenol
Soil | 8260 (TCLP) | Benzene
Soil | 8260 (TCLP) | 2-Butanone (MEK)
Soil | 8260 (TCLP) | Carbon tetrachloride
Soil | 8260 (TCLP) | Chlorobenzene
Soil | 8260 (TCLP) | Chloroform
Soil | 8260 (TCLP) | 1,4-Dichlorobenzene
Soil | 8260 (TCLP) | 1,2-Dichloroethane
Soil | 8260 (TCLP) | 1,1-Dichloroethene
Soil | 8260 (TCLP) | Tetrachloroethene
Soil | 8260 (TCLP) | Trichloroethene
Soil | 8260 (TCLP) | Vinyl chloride
Soil | 8260 (Full List) | Hexachlorobutadiene
Soil | 8151 (TCLP) | 2,4-D
Soil | 8151 (TCLP) | 2,4,5-TP (Silvex)
Soil | 6020 (RCRA8 TCLP) | Arsenic
Soil | 6020 (RCRA8 TCLP) | Barium
Soil | 6020 (RCRA8 TCLP) | Cadmium
Soil | 6020 (RCRA8 TCLP) | Chromium
Soil | 6020 (RCRA8 TCLP) | Lead
Soil | 6020 (RCRA8 TCLP) | Mercury
Soil | 6020 (RCRA8 TCLP) | Selenium
Soil | 6020 (RCRA8 TCLP) | Silver
Soil | 6020 (PP Metals Total) | Antimony
Soil | 6020 (PP Metals Total) | Arsenic
Soil | 6020 (PP Metals Total) | Beryllium
Soil | 6020 (PP Metals Total) | Cadmium
Soil | 6020 (PP Metals Total) | Chromium
Soil | 6020 (PP Metals Total) | Copper
Soil | 6020 (PP Metals Total) | Lead
Soil | 6020 (PP Metals Total) | Mercury
Soil | 6020 (PP Metals Total) | Nickel
Soil | 6020 (PP Metals Total) | Selenium
Soil | 6020 (PP Metals Total) | Silver
Soil | 6020 (PP Metals Total) | Thallium
Soil | 6020 (PP Metals Total) | Zinc

Matrix , Method , Analyte

Water | 8081 (TCLP) | alpha-Chlordane
Water | 8081 (TCLP) | gamma-Chlordane
Water | 8081 (TCLP) | Endrin
Water | 8081 (TCLP) | Heptachlor
Water | 8081 (TCLP) | Heptachlor epoxide
Water | 8081 (TCLP) | Lindane (gamma-BHC)
Water | 8081 (TCLP) | Methoxychlor
Water | 8081 (TCLP) | Toxaphene

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Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Robert Pushman

Reported:
11/13/18 09:49

Notes and Definitions

U	[Undefined]
S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
S-FAIL	Surrogate recovery was outside of established QC limits
S-BN	Base/Neutral surrogate recovery outside of control limits. The data was accepted based on valid recovery of remaining two base/neutral surrogates.
S-AC	Acid surrogate recovery outside of control limits. The data was accepted based on valid recovery of remaining two acid surrogates.
S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.
J(M1)	[Undefined]
J	Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).
I	Interference
E	PCDE Interference
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
%-Solids	Percent Solids is a supportive test and as such does not require accredidation

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Cory Koons, Laboratory Manager

All analyses performed at Maryland Spectral Services included in the report are TNI certified except as indicated at the end of the report

CHAIN-OF-CUSTODY RECORD

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410–247–7600 • Fax 410–247–7602
labman@mdspectral.com

Matrix Codes: NW (non-potable water) PW (potable water)

Company Name:	Project Manager:
HCEA	Same
Project Name: (801) St. Elizabeths 801 Shelter	Project ID: 18[redacted]344B
Sampler(s): Rob Pushman	P.O. Number: TBD

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	Dioxins-Furans 1613	6020-PP Metals	Hex. Chromium	TPH DRO	TPH GRO	PCBs 8260 V.O.	8270 Semi V.O	Total Cyanide	Full TCLP	Preservative: 1+1 HCl, H_2SO_4, Methanol, $Na_2S_2O_3$, $NaHCO_3$	Field pH, Residual Chlorine, QC Request, Trip Blank, Field Blank	MSS Lab ID
P-2	10/25	10:10		X		7												8102623-01
P-3	"	11:45		"		6												-02
P-4	"	1:40		"		6												-03
P-5	10/26	8:30		"		6												-04
P-6	"	9:45		"		6												-05
P-7	"	10:50		"		6												-06

Relinquished by: (Signature) / (Printed)	Date/Time	Received by: (Signature) / (Printed)	Relinquished by: (Signature) / (Printed)	Date/Time	Received by: (Signature) / (Printed)
Rob Pushman	10/26 14:00	Adrian Moran			
Relinquished by: (Signature) / (Printed)	Date/Time	Received by Lab: (Signature) / (Printed)			

Turn Around Time:
- ☑ Normal (7 day)
- ☐ 5 day
- ☐ 4 day
- ☐ 3 day
- ☐ Rush (2 day)
- ☐ Next Day
- ☐ Other: _____
- ☐ Specific Due Date: _____

Lab Use:
Temp: 6.0 °C
- ☑ Received on Ice
- ☐ Received same day
- ☐ Preservation Appropriate

Delivery Method:
- ☐ Courier
- ☐ Client
- ☐ UPS
- ☐ FedEx
- ☐ USPS
- ☐ Other: _____

Special Instructions/QC Requirements & Comments:

Sample Disposal:
- ☐ Return to Client
- ☐ Disposal by lab
- ☐ Archive for _____ days

MSS-F001-002

SUBCONTRACT ORDER
Maryland Spectral Services

8102623

SENDING LABORATORY:

Maryland Spectral Services
1500 Caton Center Dr. Suite G
Halethorpe, MD 21227
Phone: 410.247.7600
Project Manager: Cory Koons
Reports Email: Reporting@mdspectral.com

RECEIVING LABORATORY:

Pace Labs-Mn
1700 Elm Street SE
Minneapolis, MN 55414
Phone :(612) 607-1700
Fax:

WO# : 10453390

10453390

Due 4:00 PM 11/06/18

				Laboratory ID	Comments
Sample ID: 8102623-01	**P-2**	**Soil**	**Sampled:10/25/18 10:10**	001	
1613 (Dioxins Full List)					
Containers Supplied: Glass Jar, 4 oz (G)					
Sample ID: 8102623-02	**P-3**	**Soil**	**Sampled:10/25/18 11:45**	002	
1613 (Dioxins Full List)					
Containers Supplied: Glass Jar, 4 oz (F)					
Sample ID: 8102623-03	**P-4**	**Soil**	**Sampled:10/25/18 13:40**	003	
1613 (Dioxins Full List)					
Containers Supplied: Glass Jar, 4 oz (F)					
Sample ID: 8102623-04	**P-5**	**Soil**	**Sampled:10/26/18 08:30**	004	
1613 (Dioxins Full List)					
Containers Supplied: Glass Jar, 4 oz (F)					

Relinquished By	10/26/18 1632 Date	David L Hillegas/Pace Received By	10/26/18 1632 Date
David L Hillegas/Pace Relinquished By	10/26/18 1830 Date	Pace - PACE Received By	10/27/18 9:40 Date

T=2.3

SUBCONTRACT ORDER
Maryland Spectral Services

8102623

Due 4:00 PM 11/06/18

				Laboratory ID	Comments
Sample ID: 8102623-05	**P-6**	**Soil**	**Sampled:10/26/18 09:45**	005	
1613 (Dioxins Full List)					
Containers Supplied:					
Glass Jar, 4 oz (F)					
Sample ID: 8102623-06	**P-7**	**Soil**	**Sampled:10/26/18 10:50**	006	
1613 (Dioxins Full List)					
Containers Supplied:					
Glass Jar, 4 oz (F)					

Released By	Date	Received By	Date
[illegible]	10/20 hr 1632	David F Nellegan/Pace	10/20/18 1632
David F Nellegan/Pace	10/20/18 1830	Pace-PACE	10/27/18 9:46

Released By / Date / Received By / Date

T = 2.3

WO# : 35427074

35427074

SUBCONTRACT ORDER
Maryland Spectral Services

8102623

SENDING LABORATORY:

Maryland Spectral Services
1500 Caton Center Dr. Suite G
Halethorpe, MD 21227
Phone: 410.247.7600
Project Manager: Cory Koons

Reports Email: Reporting@mdspectral.com

RECEIVING LABORATORY:

Pace Labs-FL
8 East Tower Circle
Ormond Beach, FL 32174
Phone :(386) 672-5668
Fax:

Due 4:00 PM 11/06/18

				Laboratory ID	Comments
Sample ID: 8102623-01	**P-2**	**Soil**	**Sampled:10/25/18 10:10**		
7199-(Chromium6)	Cyanide (Total)				
Containers Supplied: Glass Jar, 4 oz (F)					
Sample ID: 8102623-02	**P-3**	**Soil**	**Sampled:10/25/18 11:45**		
7199-(Chromium6)	Cyanide (Total)				
Containers Supplied: Glass Jar, 4 oz (E)					
Sample ID: 8102623-03	**P-4**	**Soil**	**Sampled:10/25/18 13:40**		
7199-(Chromium6)	Cyanide (Total)				
Containers Supplied: Glass Jar, 4 oz (E)					
Sample ID: 8102623-04	**P-5**	**Soil**	**Sampled:10/26/18 08:30**		
7199-(Chromium6)	Cyanide (Total)				
Containers Supplied: Glass Jar, 4 oz (E)					

Released By	10/26/18 1032 Date	Received By	10/26/18 1635 Date
Released By	10/26/18 1830 Date	Received By	10/29/18 1045 Date

1.4/T338

WO#: 35427074

PM: TSR Due Date: 11/05/18
CLIENT: MASPSE

SUBCONTRACT ORDER
Maryland Spectral Services

8102623

Due 4:00 PM 11/06/18

				Laboratory ID	Comments
Sample ID: 8102623-05	**P-6**	**Soil**	**Sampled:10/26/18 09:45**		
7199-(Chromium6)	Cyanide (Total)				
Containers Supplied:					
Glass Jar, 4 oz (E)					
Sample ID: 8102623-06	**P-7**	**Soil**	**Sampled:10/26/18 10:50**		
7199-(Chromium6)	Cyanide (Total)				
Containers Supplied:					
Glass Jar, 4 oz (E)					

Released By	Date	Received By	Date
[signature]	10/26/18 1032	[signature]	10/26/18 1637
[signature]	10/26/18 1530		

Maryland spectral Services

Analytical Chemistry Services

ACCREDITED IN ACCORDANCE WITH nelac

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

29 October 2018

Gina Galimberti
HILLIS-CARNES ENGINEERING ASSOCIATES
10975 Guilford Rd
Annapolis Junction, MD 20701

RE: St. Elizabeths 801 Shelter

Enclosed are the results of analyses for samples received by the laboratory on 10/26/18 14:00.

Maryland Spectral Services, Inc. is a TNI 2009 Standard accredited laboratory and as such, all analyses performed at Maryland Spectral Services included in this report are 2009 TNI certified except as indicated at the end of this report. Please visit our website at www.mdspectral.com for a complete listing of our TNI 2009 Standard accreditations.

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

Sincerely,

Rabecka Koons
Quality Assurance Officer

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Gina Galimberti

Reported:
10/29/18 17:07

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
G-1		8102622-01	Vapor	10/25/18 15:05	10/26/18 14:00
G-21		8102622-02	Vapor	10/25/18 15:10	10/26/18 14:00

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Rabecka Koons, Quality Assurance Officer

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1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Gina Galimberti

Reported:
10/29/18 17:07

G-1

8102622-01 (Vapor)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD TO-15 (GC/MS)									
Acetone	ND		ug/m³	9.60	9.60	4	10/26/18	10/26/18 15:55	WB
Benzene	**2.30**	J	ug/m³	2.56	0.64	4	10/26/18	10/26/18 15:55	WB
Benzyl chloride	ND		ug/m³	4.00	1.00	4	10/26/18	10/26/18 15:55	WB
Bromodichloromethane	ND		ug/m³	5.20	1.30	4	10/26/18	10/26/18 15:55	WB
Bromoform	ND		ug/m³	8.40	2.10	4	10/26/18	10/26/18 15:55	WB
Bromomethane	ND		ug/m³	3.12	0.78	4	10/26/18	10/26/18 15:55	WB
1,3-Butadiene	ND		ug/m³	1.76	1.76	4	10/26/18	10/26/18 15:55	WB
Carbon disulfide	**20.3**		ug/m³	2.48	0.62	4	10/26/18	10/26/18 15:55	WB
Carbon tetrachloride	ND		ug/m³	5.20	1.30	4	10/26/18	10/26/18 15:55	WB
Chlorobenzene	ND		ug/m³	3.68	0.92	4	10/26/18	10/26/18 15:55	WB
Chloroethane	ND		ug/m³	2.12	1.06	4	10/26/18	10/26/18 15:55	WB
Chloroform	ND		ug/m³	3.88	0.97	4	10/26/18	10/26/18 15:55	WB
Chloromethane	**0.83**	J	ug/m³	1.64	0.41	4	10/26/18	10/26/18 15:55	WB
3-Chloropropene	ND		ug/m³	2.52	0.63	4	10/26/18	10/26/18 15:55	WB
Cyclohexane	**115**		ug/m³	2.76	0.69	4	10/26/18	10/26/18 15:55	WB
Dibromochloromethane	ND		ug/m³	5.20	1.30	4	10/26/18	10/26/18 15:55	WB
1,2-Dibromoethane (EDB)	ND		ug/m³	5.60	1.40	4	10/26/18	10/26/18 15:55	WB
1,2-Dichlorobenzene	ND		ug/m³	4.80	1.20	4	10/26/18	10/26/18 15:55	WB
1,3-Dichlorobenzene	ND		ug/m³	4.80	1.20	4	10/26/18	10/26/18 15:55	WB
1,4-Dichlorobenzene	ND		ug/m³	4.80	1.20	4	10/26/18	10/26/18 15:55	WB
Dichlorodifluoromethane	ND		ug/m³	3.96	3.96	4	10/26/18	10/26/18 15:55	WB
1,1-Dichloroethane	ND		ug/m³	3.24	0.81	4	10/26/18	10/26/18 15:55	WB
1,2-Dichloroethane	ND		ug/m³	3.24	0.81	4	10/26/18	10/26/18 15:55	WB
1,1-Dichloroethene	ND		ug/m³	3.16	0.79	4	10/26/18	10/26/18 15:55	WB
cis-1,2-Dichloroethene	ND		ug/m³	3.16	0.79	4	10/26/18	10/26/18 15:55	WB
trans-1,2-Dichloroethene	ND		ug/m³	3.16	0.79	4	10/26/18	10/26/18 15:55	WB
1,2-Dichloropropane	ND		ug/m³	3.68	0.92	4	10/26/18	10/26/18 15:55	WB
cis-1,3-Dichloropropene	ND		ug/m³	3.64	0.91	4	10/26/18	10/26/18 15:55	WB
trans-1,3-Dichloropropene	ND		ug/m³	3.64	0.91	4	10/26/18	10/26/18 15:55	WB
1,4-Dioxane	ND		ug/m³	2.88	0.72	4	10/26/18	10/26/18 15:55	WB
Ethyl acetate	ND		ug/m³	14.4	14.4	4	10/26/18	10/26/18 15:55	WB
Ethylbenzene	ND		ug/m³	3.48	0.87	4	10/26/18	10/26/18 15:55	WB
4-Ethyltoluene	ND		ug/m³	3.92	0.98	4	10/26/18	10/26/18 15:55	WB

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Rabecka Koons, Quality Assurance Officer

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1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Gina Galimberti

Reported:
10/29/18 17:07

G-1

8102622-01 (Vapor)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD TO-15 (GC/MS) (continued)									
Freon 113	ND		ug/m³	6.00	1.50	4	10/26/18	10/26/18 15:55	WB
Freon 114	ND		ug/m³	5.60	5.60	4	10/26/18	10/26/18 15:55	WB
n-Heptane	**115**		ug/m³	3.28	0.82	4	10/26/18	10/26/18 15:55	WB
Hexachlorobutadiene	ND		ug/m³	8.40	8.40	4	10/26/18	10/26/18 15:55	WB
Hexane	ND		ug/m³	56.0	56.0	4	10/26/18	10/26/18 15:55	WB
2-Hexanone	**90.1**		ug/m³	3.28	0.59	4	10/26/18	10/26/18 15:55	WB
Isopropylbenzene (Cumene)	ND		ug/m³	4.40	1.60	4	10/26/18	10/26/18 15:55	WB
Methyl tert-butyl ether (MTBE)	ND		ug/m³	2.88	0.82	4	10/26/18	10/26/18 15:55	WB
Methylene chloride	ND		ug/m³	72.0	72.0	4	10/26/18	10/26/18 15:55	WB
Methyl ethyl ketone (2-Butanone)	**1460**	E	ug/m³	2.36	1.36	4	10/26/18	10/26/18 15:55	WB
Methyl isobutyl ketone	ND		ug/m³	3.28	0.85	4	10/26/18	10/26/18 15:55	WB
Naphthalene	ND		ug/m³	4.40	2.80	4	10/26/18	10/26/18 15:55	WB
Propene	ND		ug/m³	1.36	1.36	4	10/26/18	10/26/18 15:55	WB
n-Propylbenzene	ND		ug/m³	3.92	1.60	4	10/26/18	10/26/18 15:55	WB
Styrene	ND		ug/m³	3.40	0.59	4	10/26/18	10/26/18 15:55	WB
1,1,2,2-Tetrachloroethane	ND		ug/m³	5.60	1.40	4	10/26/18	10/26/18 15:55	WB
Tetrachloroethene	ND		ug/m³	5.60	2.80	4	10/26/18	10/26/18 15:55	WB
Tetrahydrofuran	ND		ug/m³	2.36	0.59	4	10/26/18	10/26/18 15:55	WB
Toluene	**3.92**		ug/m³	3.00	0.75	4	10/26/18	10/26/18 15:55	WB
1,2,4-Trichlorobenzene	ND		ug/m³	6.00	1.50	4	10/26/18	10/26/18 15:55	WB
1,1,1-Trichloroethane	ND		ug/m³	4.40	1.10	4	10/26/18	10/26/18 15:55	WB
1,1,2-Trichloroethane	ND		ug/m³	4.40	1.10	4	10/26/18	10/26/18 15:55	WB
Trichloroethene	**1.29**	J	ug/m³	4.40	1.10	4	10/26/18	10/26/18 15:55	WB
Trichlorofluoromethane (Freon 11)	ND		ug/m³	4.40	1.10	4	10/26/18	10/26/18 15:55	WB
1,2,4-Trimethylbenzene	ND		ug/m³	3.92	0.98	4	10/26/18	10/26/18 15:55	WB
1,3,5-Trimethylbenzene	ND		ug/m³	3.92	0.98	4	10/26/18	10/26/18 15:55	WB
2,2,4-Trimethylpentane	**247**		ug/m³	3.72	0.93	4	10/26/18	10/26/18 15:55	WB
Vinyl acetate	ND		ug/m³	2.80	2.80	4	10/26/18	10/26/18 15:55	WB
Vinyl bromide	ND		ug/m³	3.48	0.87	4	10/26/18	10/26/18 15:55	WB
Vinyl chloride	**1.12**	J	ug/m³	2.04	0.51	4	10/26/18	10/26/18 15:55	WB
o-Xylene	ND		ug/m³	3.48	0.87	4	10/26/18	10/26/18 15:55	WB
m- & p-Xylenes	ND		ug/m³	6.80	1.70	4	10/26/18	10/26/18 15:55	WB
Surrogate: 4-Bromofluorobenzene			*73-110*	*91 %*			*10/26/18*	*10/26/18 15:55*	

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Rabecka Koons, Quality Assurance Officer

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1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Gina Galimberti

Reported:
10/29/18 17:07

G-21

8102622-02 (Vapor)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD TO-15 (GC/MS)									
Acetone	ND		ug/m³	9.60	9.60	4	10/26/18	10/26/18 16:38	WB
Benzene	**2.30**	J	ug/m³	2.56	0.64	4	10/26/18	10/26/18 16:38	WB
Benzyl chloride	ND		ug/m³	4.00	1.00	4	10/26/18	10/26/18 16:38	WB
Bromodichloromethane	ND		ug/m³	5.20	1.30	4	10/26/18	10/26/18 16:38	WB
Bromoform	ND		ug/m³	8.40	2.10	4	10/26/18	10/26/18 16:38	WB
Bromomethane	ND		ug/m³	3.12	0.78	4	10/26/18	10/26/18 16:38	WB
1,3-Butadiene	ND		ug/m³	1.76	1.76	4	10/26/18	10/26/18 16:38	WB
Carbon disulfide	**6.85**		ug/m³	2.48	0.62	4	10/26/18	10/26/18 16:38	WB
Carbon tetrachloride	ND		ug/m³	5.20	1.30	4	10/26/18	10/26/18 16:38	WB
Chlorobenzene	ND		ug/m³	3.68	0.92	4	10/26/18	10/26/18 16:38	WB
Chloroethane	ND		ug/m³	2.12	1.06	4	10/26/18	10/26/18 16:38	WB
Chloroform	ND		ug/m³	3.88	0.97	4	10/26/18	10/26/18 16:38	WB
Chloromethane	**0.91**	J	ug/m³	1.64	0.41	4	10/26/18	10/26/18 16:38	WB
3-Chloropropene	ND		ug/m³	2.52	0.63	4	10/26/18	10/26/18 16:38	WB
Cyclohexane	**9.09**		ug/m³	2.76	0.69	4	10/26/18	10/26/18 16:38	WB
Dibromochloromethane	ND		ug/m³	5.20	1.30	4	10/26/18	10/26/18 16:38	WB
1,2-Dibromoethane (EDB)	ND		ug/m³	5.60	1.40	4	10/26/18	10/26/18 16:38	WB
1,2-Dichlorobenzene	ND		ug/m³	4.80	1.20	4	10/26/18	10/26/18 16:38	WB
1,3-Dichlorobenzene	ND		ug/m³	4.80	1.20	4	10/26/18	10/26/18 16:38	WB
1,4-Dichlorobenzene	ND		ug/m³	4.80	1.20	4	10/26/18	10/26/18 16:38	WB
Dichlorodifluoromethane	ND		ug/m³	3.96	3.96	4	10/26/18	10/26/18 16:38	WB
1,1-Dichloroethane	ND		ug/m³	3.24	0.81	4	10/26/18	10/26/18 16:38	WB
1,2-Dichloroethane	ND		ug/m³	3.24	0.81	4	10/26/18	10/26/18 16:38	WB
1,1-Dichloroethene	ND		ug/m³	3.16	0.79	4	10/26/18	10/26/18 16:38	WB
cis-1,2-Dichloroethene	ND		ug/m³	3.16	0.79	4	10/26/18	10/26/18 16:38	WB
trans-1,2-Dichloroethene	ND		ug/m³	3.16	0.79	4	10/26/18	10/26/18 16:38	WB
1,2-Dichloropropane	ND		ug/m³	3.68	0.92	4	10/26/18	10/26/18 16:38	WB
cis-1,3-Dichloropropene	ND		ug/m³	3.64	0.91	4	10/26/18	10/26/18 16:38	WB
trans-1,3-Dichloropropene	ND		ug/m³	3.64	0.91	4	10/26/18	10/26/18 16:38	WB
1,4-Dioxane	ND		ug/m³	2.88	0.72	4	10/26/18	10/26/18 16:38	WB
Ethyl acetate	ND		ug/m³	14.4	14.4	4	10/26/18	10/26/18 16:38	WB
Ethylbenzene	ND		ug/m³	3.48	0.87	4	10/26/18	10/26/18 16:38	WB
4-Ethyltoluene	ND		ug/m³	3.92	0.98	4	10/26/18	10/26/18 16:38	WB

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Baltimore MD 21227
410-247-7600
www.mdspectral.com

Analytical Results

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Gina Galimberti

Reported:
10/29/18 17:07

G-21

8102622-02 (Vapor)
Sample Date: 10/25/18

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD TO-15 (GC/MS) (continued)									
Freon 113	ND		ug/m³	6.00	1.50	4	10/26/18	10/26/18 16:38	WB
Freon 114	ND		ug/m³	5.60	5.60	4	10/26/18	10/26/18 16:38	WB
n-Heptane	**3.61**		ug/m³	3.28	0.82	4	10/26/18	10/26/18 16:38	WB
Hexachlorobutadiene	ND		ug/m³	8.40	8.40	4	10/26/18	10/26/18 16:38	WB
Hexane	ND		ug/m³	56.0	56.0	4	10/26/18	10/26/18 16:38	WB
2-Hexanone	**115**		ug/m³	3.28	0.59	4	10/26/18	10/26/18 16:38	WB
Isopropylbenzene (Cumene)	ND		ug/m³	4.40	1.60	4	10/26/18	10/26/18 16:38	WB
Methyl tert-butyl ether (MTBE)	ND		ug/m³	2.88	0.82	4	10/26/18	10/26/18 16:38	WB
Methylene chloride	ND		ug/m³	72.0	72.0	4	10/26/18	10/26/18 16:38	WB
Methyl ethyl ketone (2-Butanone)	**1630**	E	ug/m³	2.36	1.36	4	10/26/18	10/26/18 16:38	WB
Methyl isobutyl ketone	ND		ug/m³	3.28	0.85	4	10/26/18	10/26/18 16:38	WB
Naphthalene	ND		ug/m³	4.40	2.80	4	10/26/18	10/26/18 16:38	WB
Propene	ND		ug/m³	1.36	1.36	4	10/26/18	10/26/18 16:38	WB
n-Propylbenzene	ND		ug/m³	3.92	1.60	4	10/26/18	10/26/18 16:38	WB
Styrene	ND		ug/m³	3.40	0.59	4	10/26/18	10/26/18 16:38	WB
1,1,2,2-Tetrachloroethane	ND		ug/m³	5.60	1.40	4	10/26/18	10/26/18 16:38	WB
Tetrachloroethene	ND		ug/m³	5.60	2.80	4	10/26/18	10/26/18 16:38	WB
Tetrahydrofuran	ND		ug/m³	2.36	0.59	4	10/26/18	10/26/18 16:38	WB
Toluene	**3.17**		ug/m³	3.00	0.75	4	10/26/18	10/26/18 16:38	WB
1,2,4-Trichlorobenzene	ND		ug/m³	6.00	1.50	4	10/26/18	10/26/18 16:38	WB
1,1,1-Trichloroethane	ND		ug/m³	4.40	1.10	4	10/26/18	10/26/18 16:38	WB
1,1,2-Trichloroethane	ND		ug/m³	4.40	1.10	4	10/26/18	10/26/18 16:38	WB
Trichloroethene	ND		ug/m³	4.40	1.10	4	10/26/18	10/26/18 16:38	WB
Trichlorofluoromethane (Freon 11)	ND		ug/m³	4.40	1.10	4	10/26/18	10/26/18 16:38	WB
1,2,4-Trimethylbenzene	ND		ug/m³	3.92	0.98	4	10/26/18	10/26/18 16:38	WB
1,3,5-Trimethylbenzene	ND		ug/m³	3.92	0.98	4	10/26/18	10/26/18 16:38	WB
2,2,4-Trimethylpentane	**389**		ug/m³	3.72	0.93	4	10/26/18	10/26/18 16:38	WB
Vinyl acetate	ND		ug/m³	2.80	2.80	4	10/26/18	10/26/18 16:38	WB
Vinyl bromide	ND		ug/m³	3.48	0.87	4	10/26/18	10/26/18 16:38	WB
Vinyl chloride	**0.51**	J	ug/m³	2.04	0.51	4	10/26/18	10/26/18 16:38	WB
o-Xylene	ND		ug/m³	3.48	0.87	4	10/26/18	10/26/18 16:38	WB
m- & p-Xylenes	ND		ug/m³	6.80	1.70	4	10/26/18	10/26/18 16:38	WB
Surrogate: 4-Bromofluorobenzene			*73-110*	*97 %*			*10/26/18*	*10/26/18 16:38*	

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: St. Elizabeths 801 Shelter

Project Number: St. Elizabeths 801 Shelter Rev2
Project Manager: Gina Galimberti

Reported:
10/29/18 17:07

Notes and Definitions

S-FAIL	Surrogate recovery was outside of established QC limits
J	Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
%-Solids	Percent Solids is a supportive test and as such does not require accredidation

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Air Analysis by TO-15

Chain of Custody

Client Contact Information	Project Manager: Rob Rushmun	Carrier:	1 of 1 COCs
Company: HCEA	Phone:	Samplers Name(s) Sane	Analysis/ Matrix
Address:	Site Contact: same		
City/State/Zip			
Phone:			
FAX:			
Project Name: 801 (see below)	Analysis Turnaround Time		
Site:	Standard (Specify) X		
PO # TBD	Rush (Specify)		

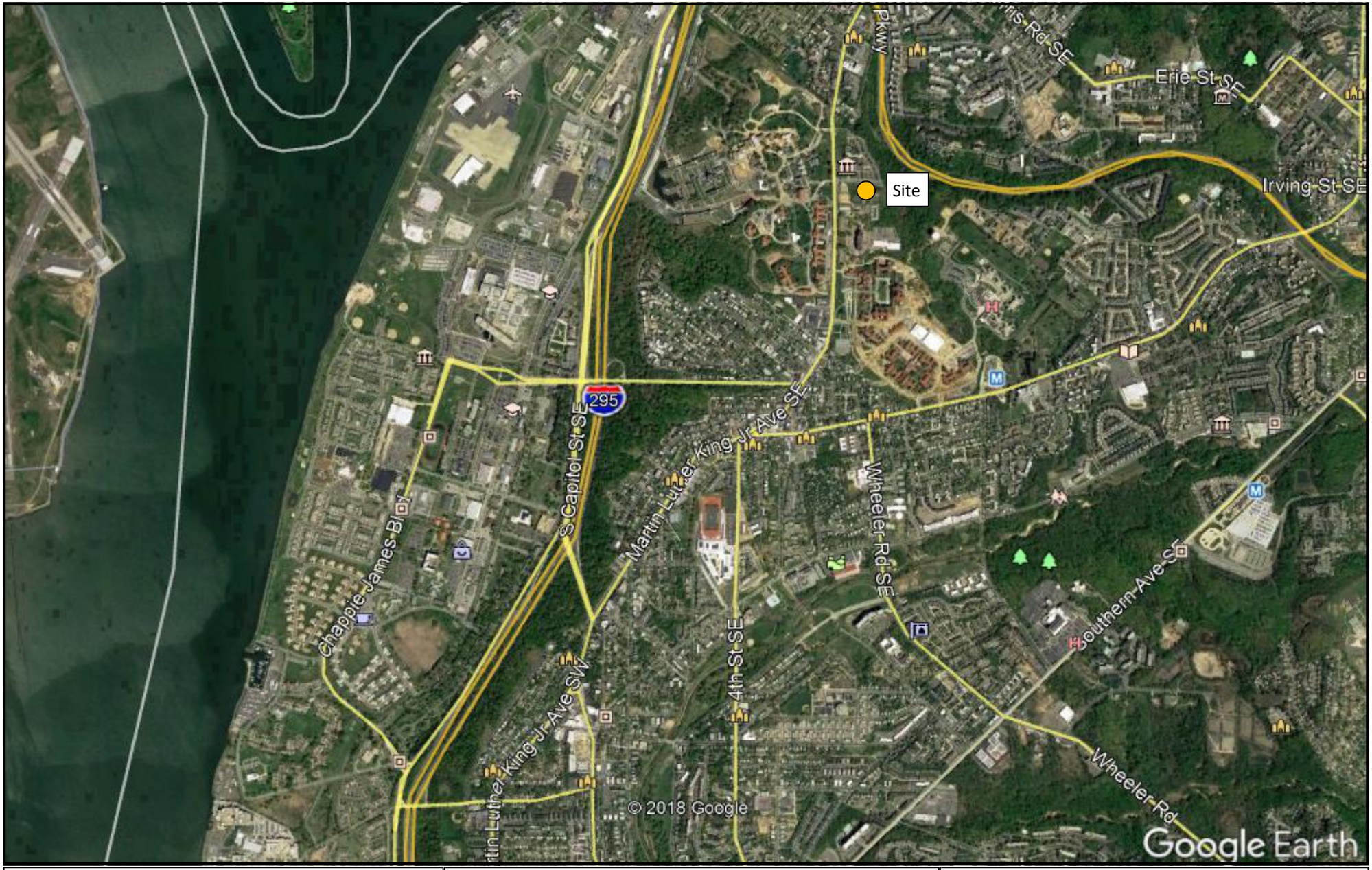
Client Sample ID	Sample Date Start	Time Start (24 hr clock)	Sample Date Stop	Time Stop (24 hr clock)	Canister Pressure in Field ("Hg) (Start)	Canister Pressure in Field ("Hg) (Stop)	Incoming Canister Pressure ("Hg) (Lab)	Sample Regulator ID	Can ID	Can Size (L)	TO-15 FULL LIST	TO-15 ABREVIATED LIST	Indoor / Ambient Air	Soil Gas / Subslab	Comments
G-1	10/25	8:35	10/25	15:05	30	6		S-AB	009		X				8102622-01
G-2	1	8:45	1	15:10	30	5		S-MM	057		X				

Special Instructions/QC Requirements & Comments:

Job name 801 = St. Elizabeth's 801 Shelter

Canisters Shipped by:	Date/Time: 10/26 14:00	Canisters Received by:	Date/Time: 10/26/18 14:00
Samples Relinquished by:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by:	Date/Time:

Appendix B



HILLIS-CARNES

ENGINEERING ASSOCIATES, INC.

Site Location Map

St. Elizabeth's Geophysical Testing

Washington, DC

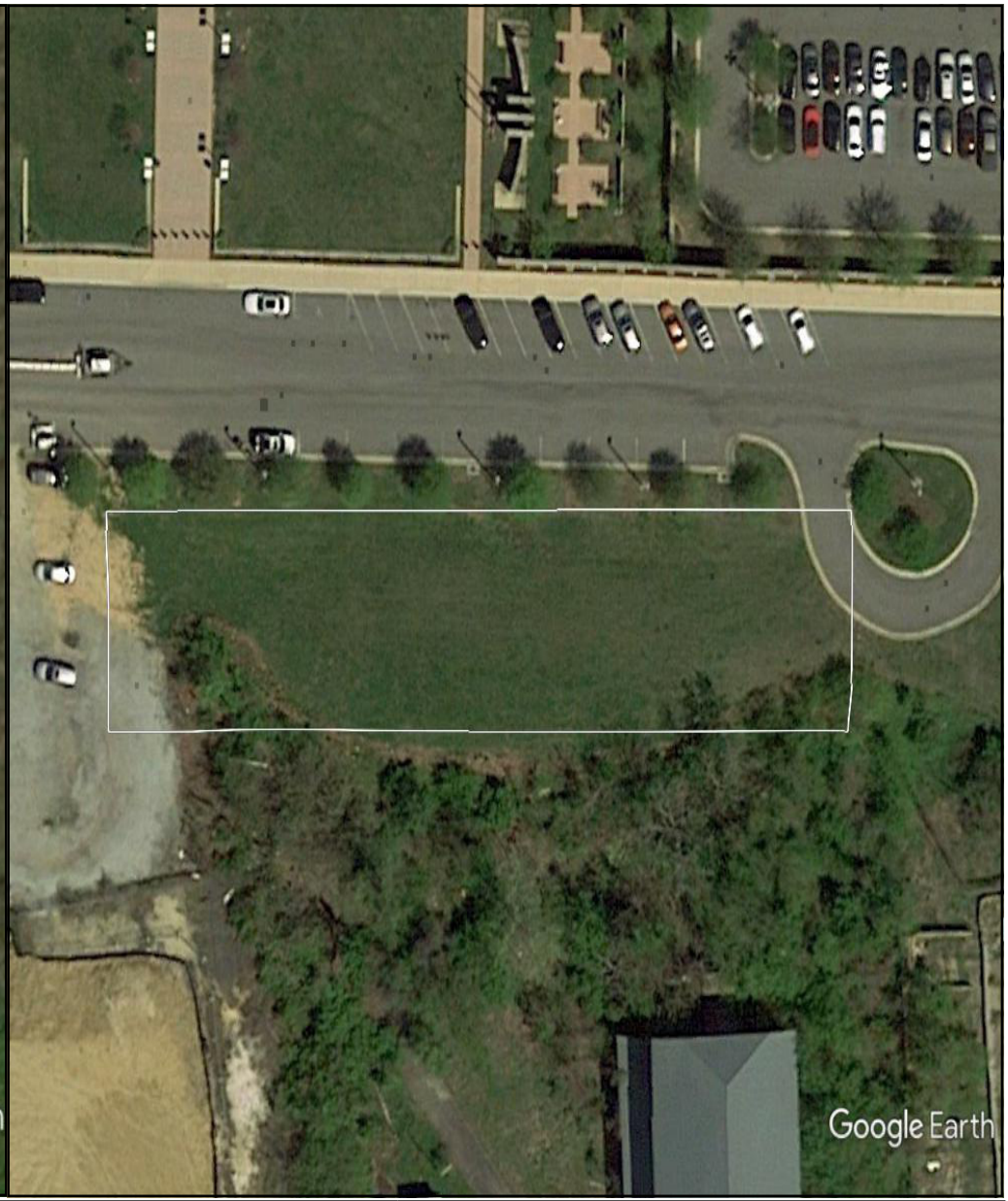
Mapping Source: Google Earth

10228 Governor Lane Boulevard

Williamsport, Maryland

Local 301-582-4662

Fax 301-582-4614



HILLIS-CARNES

ENGINEERING ASSOCIATES, INC.

EM Location Map

St. Elizabeth's Geophysical Testing

Washington, DC.

Mapping Source: Google Earth

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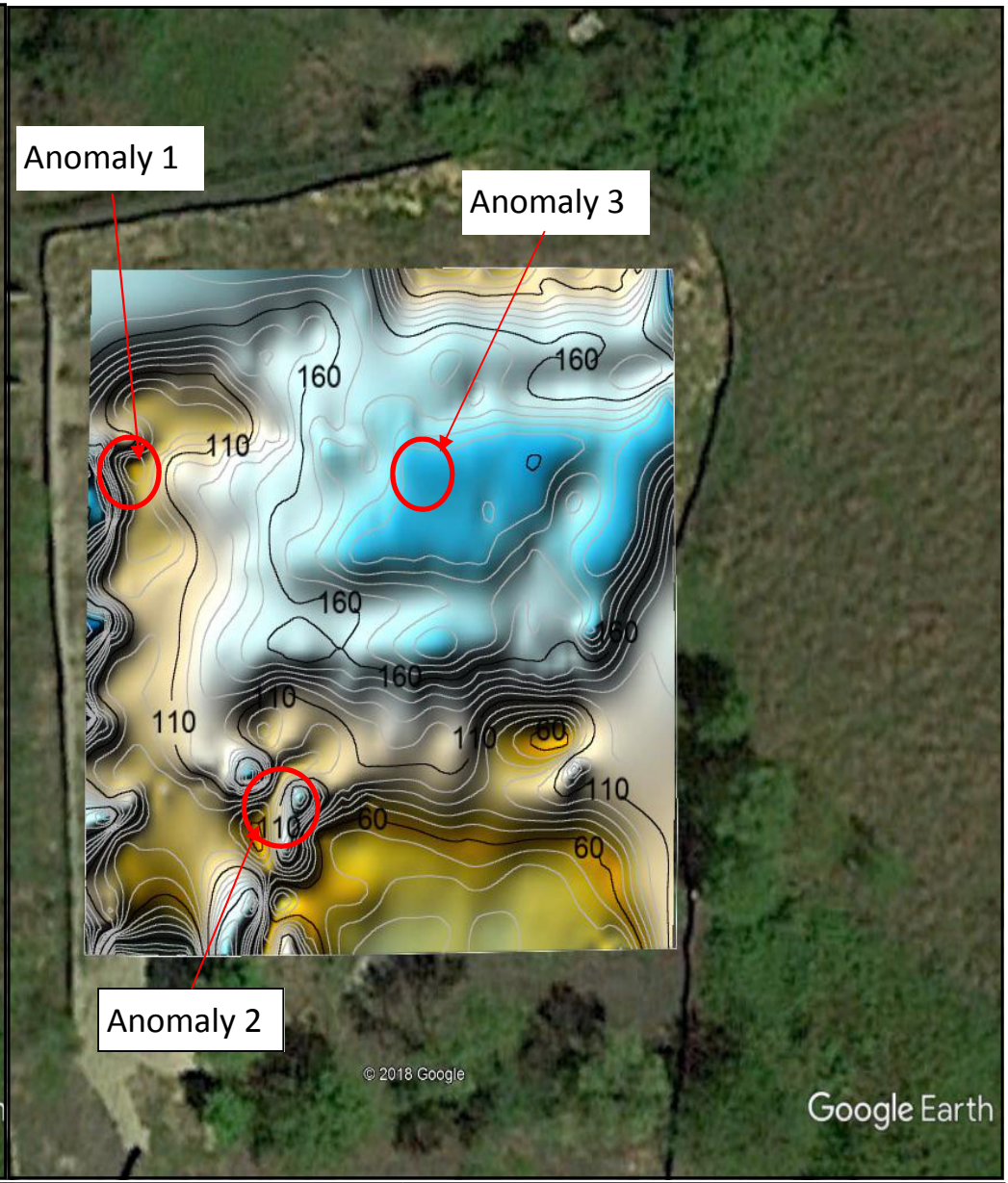

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Apparent Conductivity and

Magnetic Susceptibility Data

St. Elizabeth's Geophysical Testing

Washington, DC.

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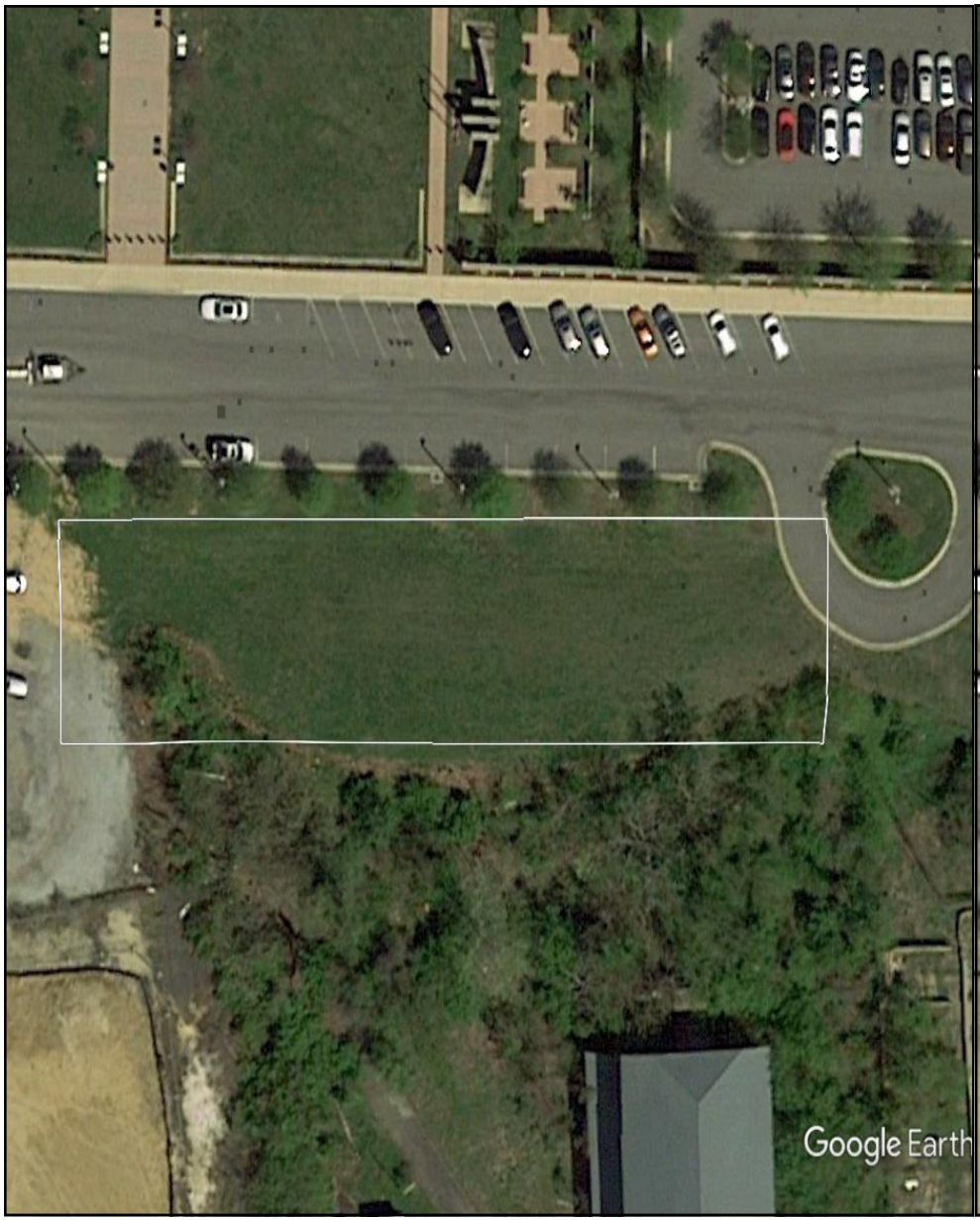

HILLIS-CARNES

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Apparent Conductivity and

Magnetic Susceptibility Data

St. Elizabeth's Geophysical Testing

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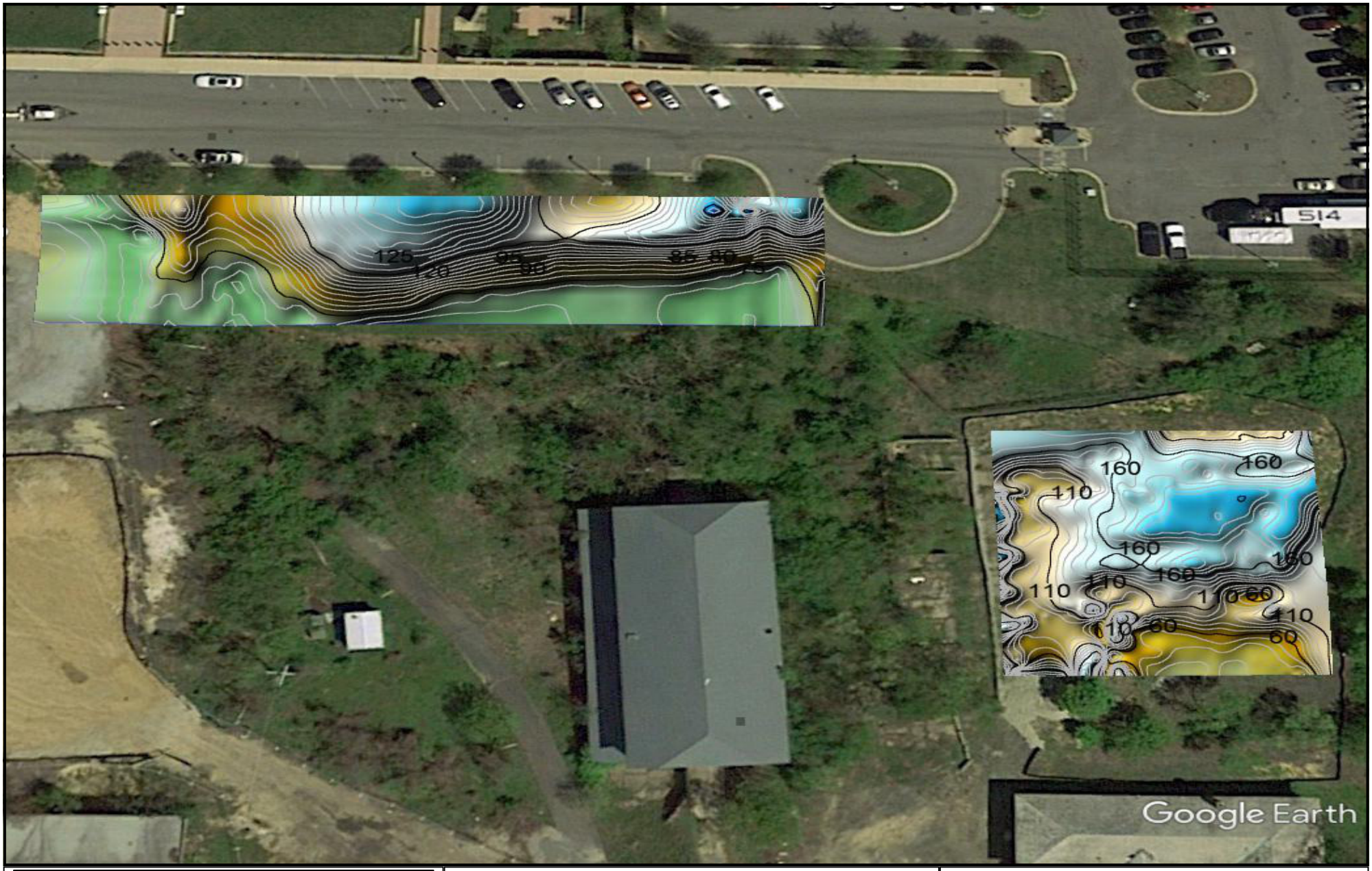

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Apparent Conductivity and

Magnetic Susceptibility Data

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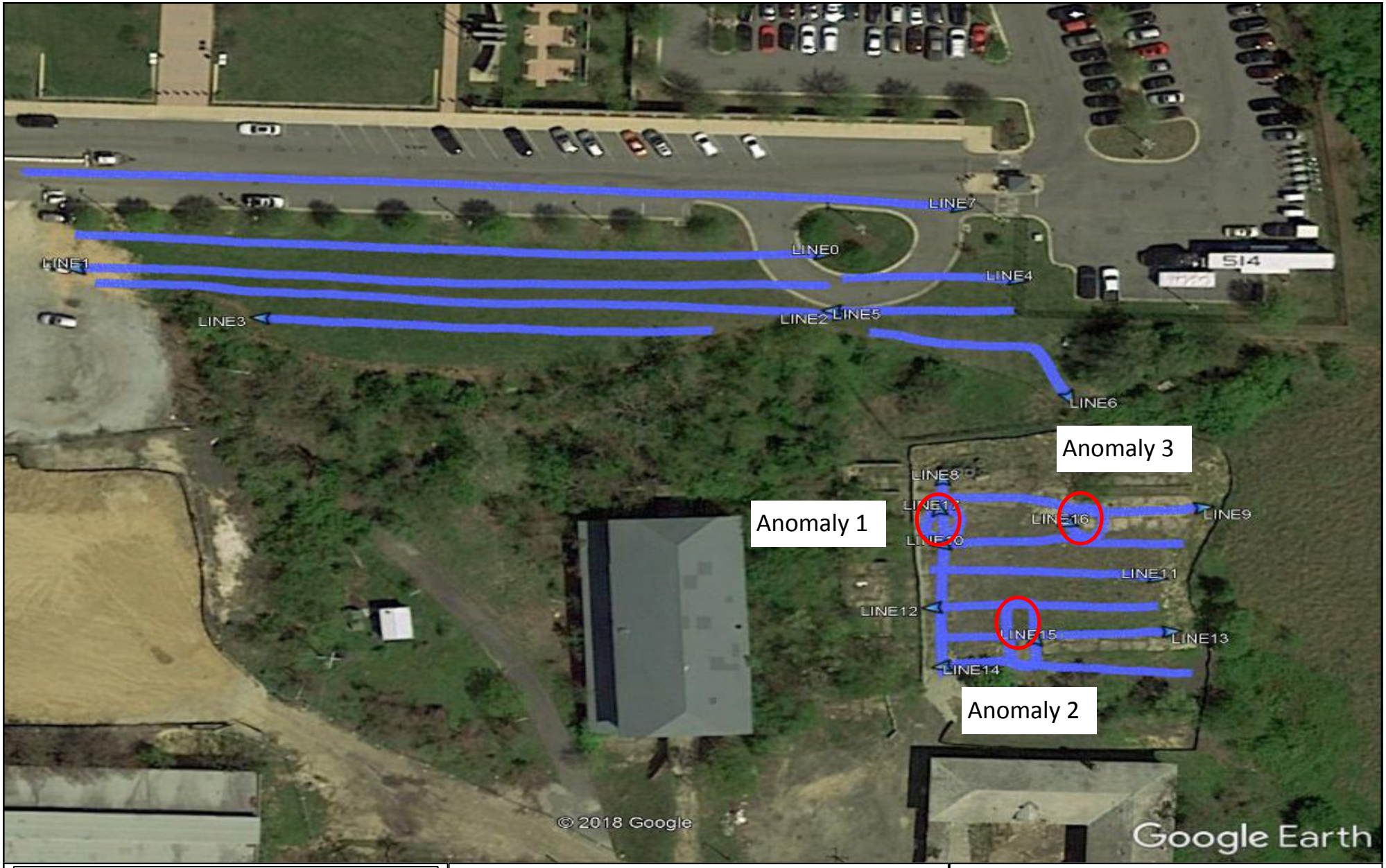

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GPR Line—Site Location Map

St. Elizabeth's Geophysical Testing

Washington, DC.

Mapping Source: Google Earth

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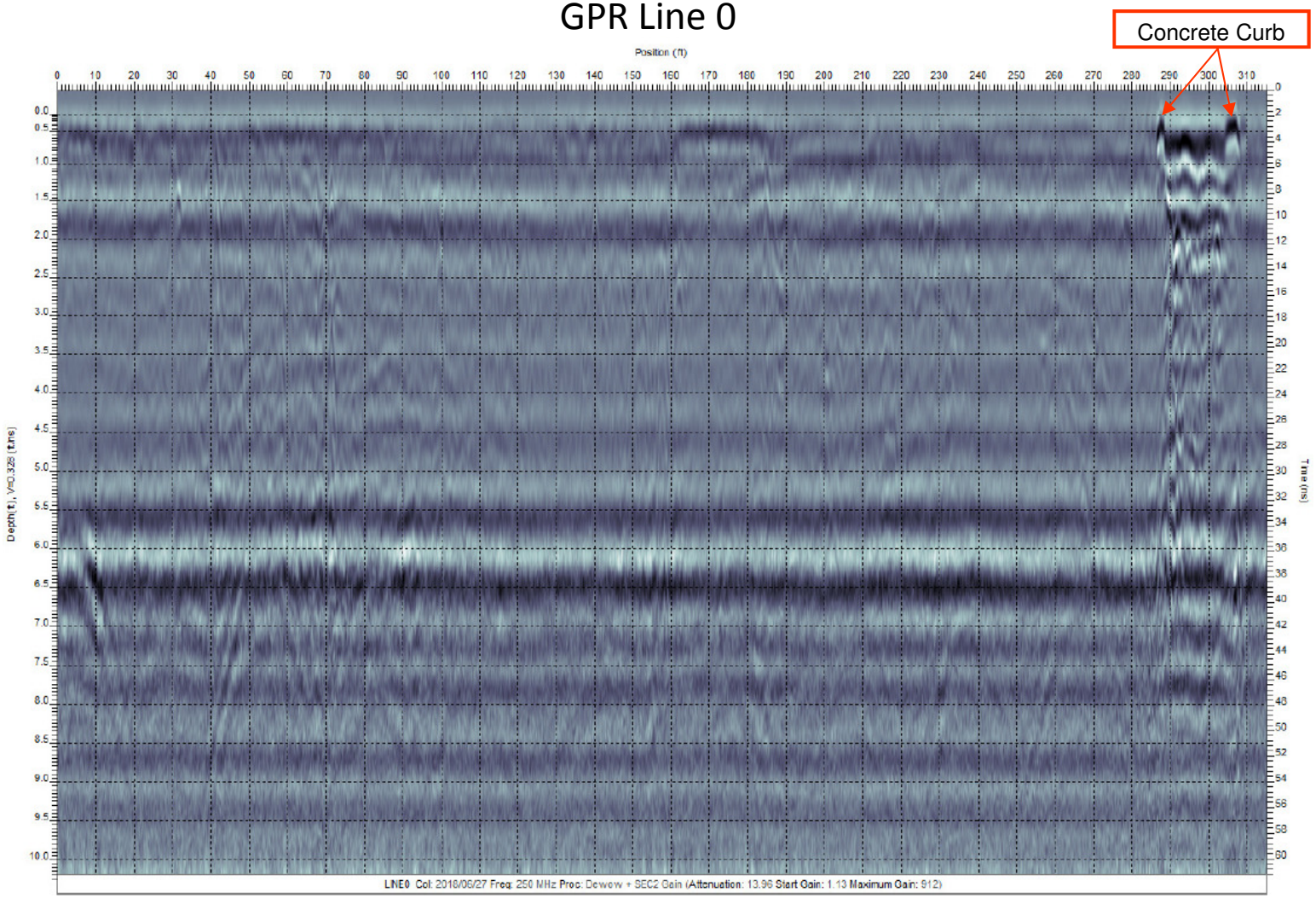
GPR Line 0



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GPR Line Scan

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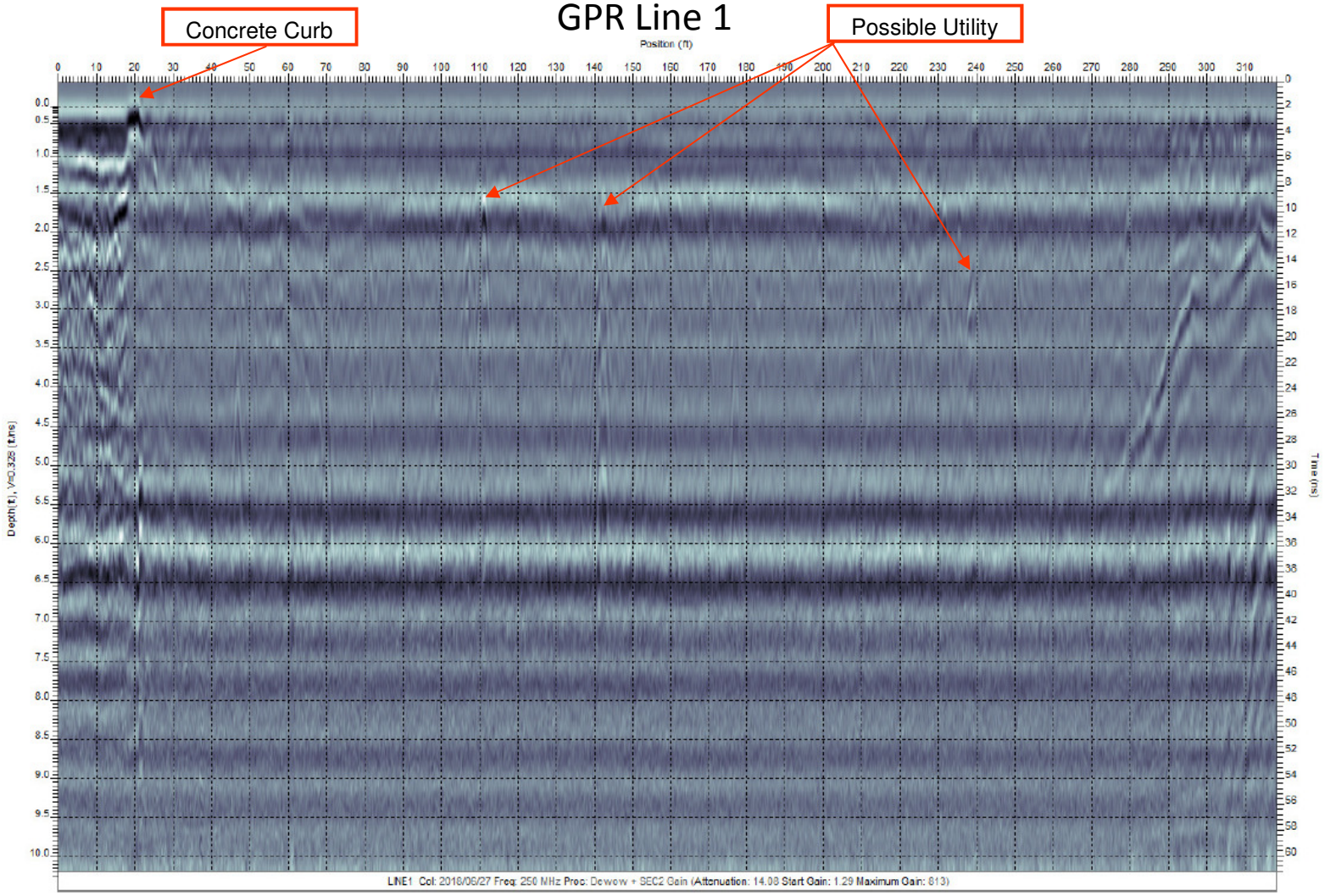
GPR Line 1



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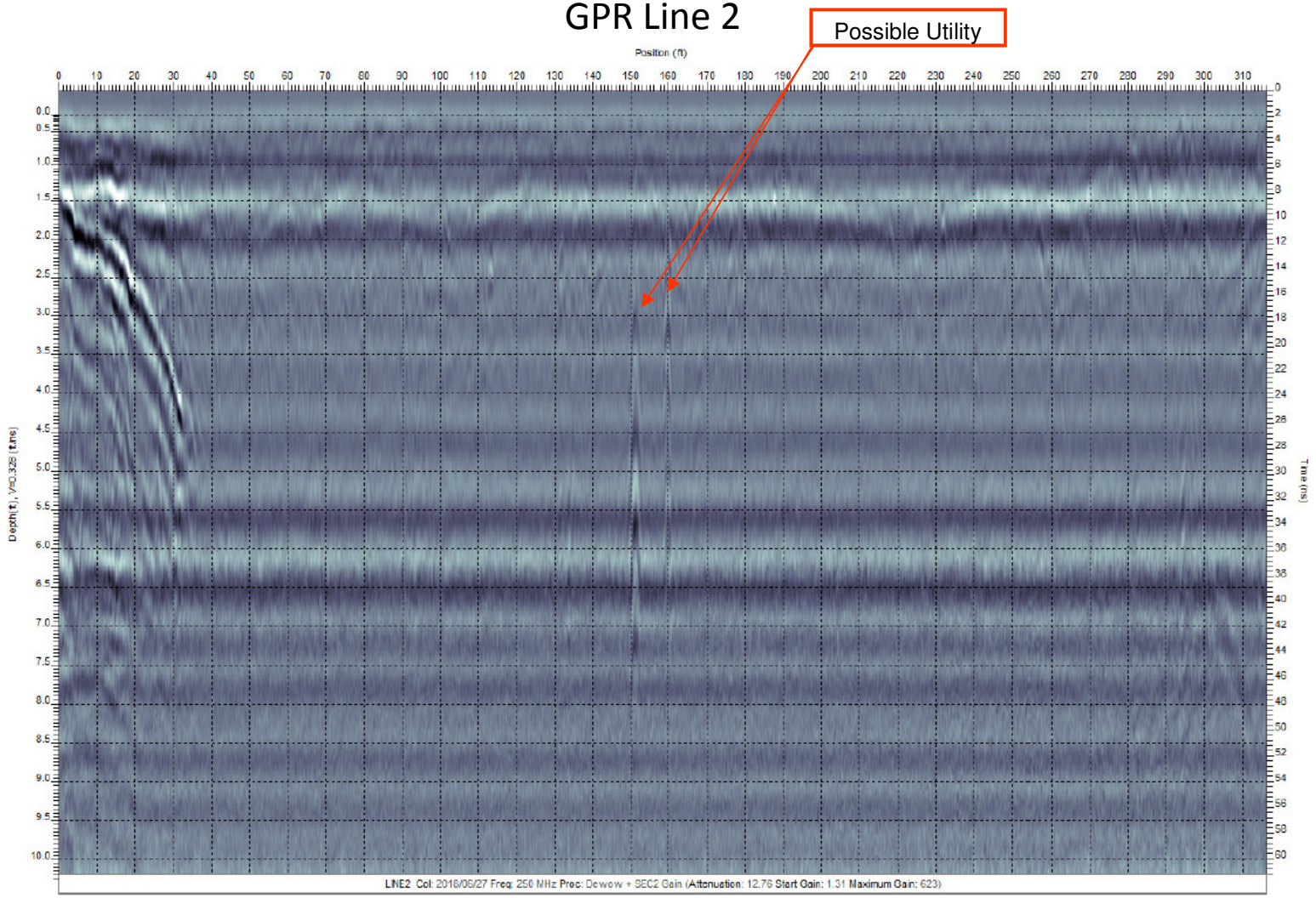
GPR Line 2



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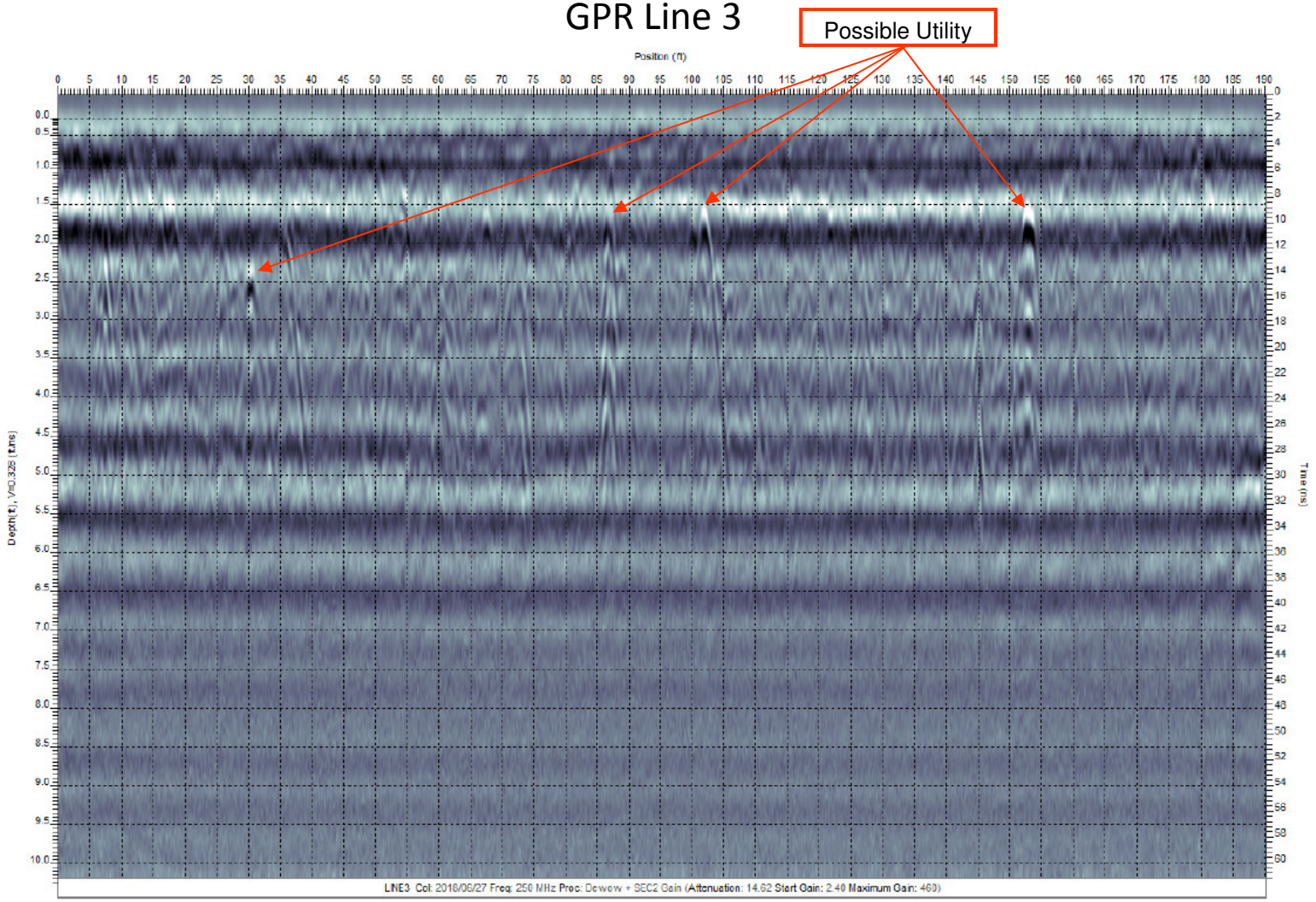
GPR Line 3



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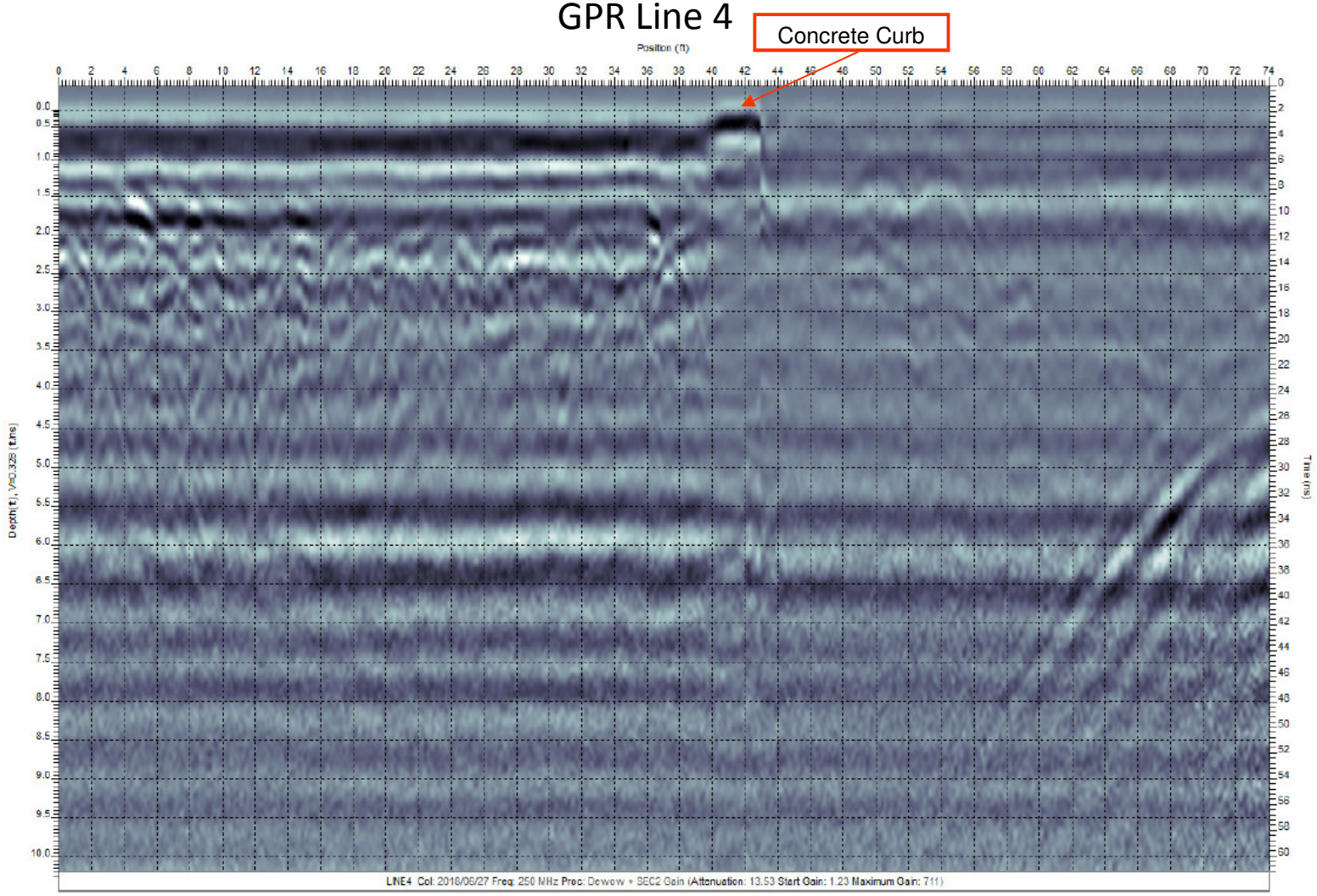

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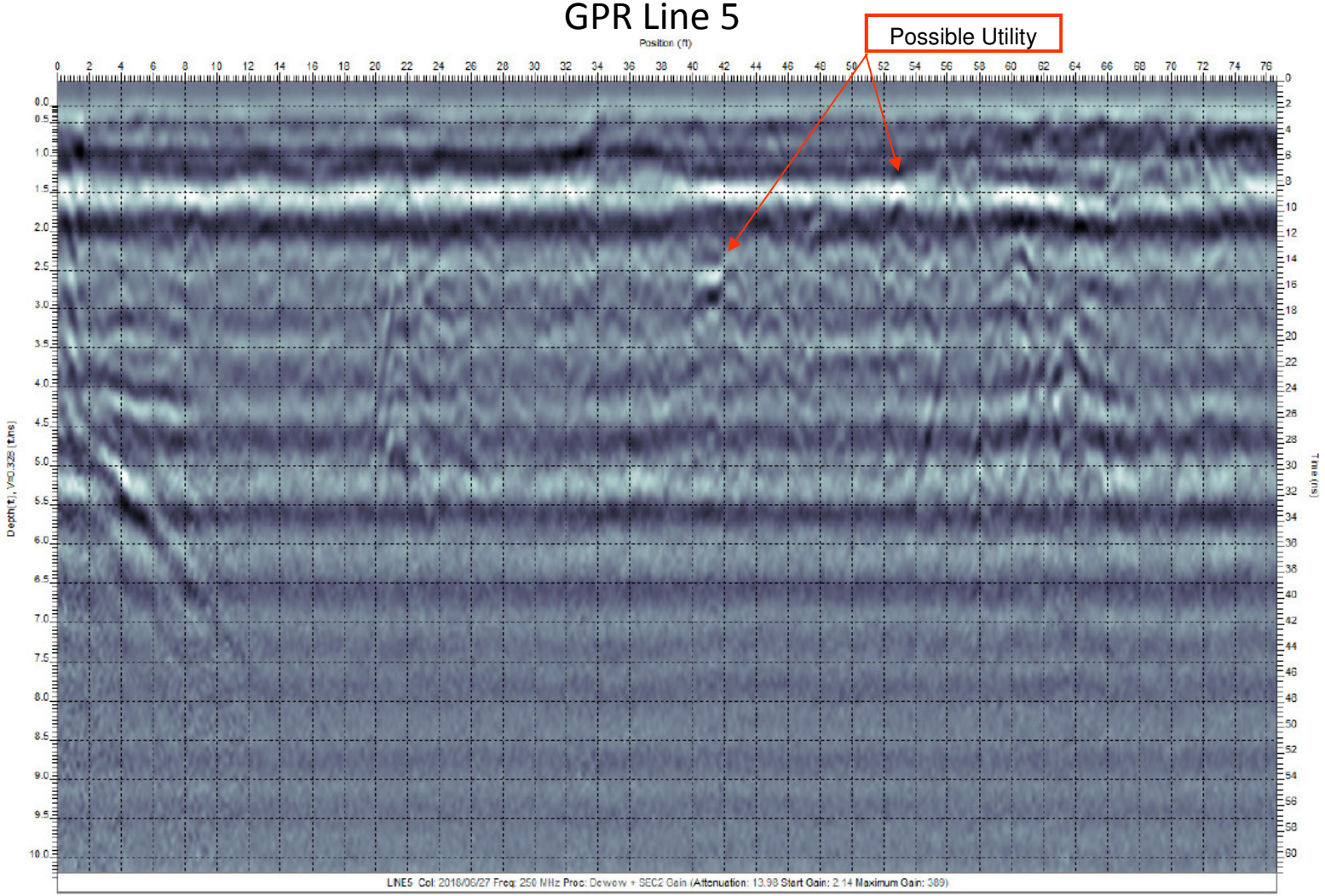
GPR Line 5



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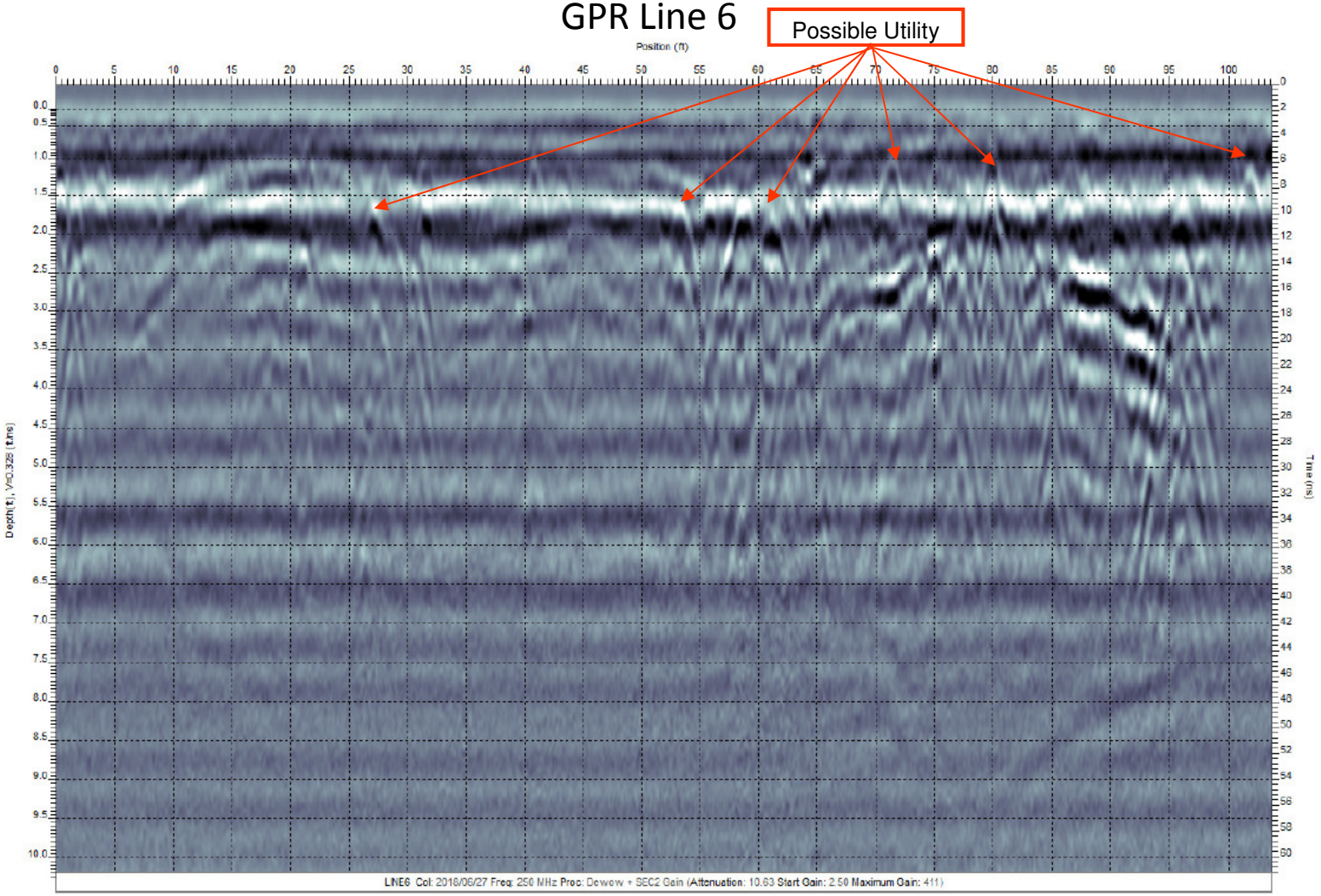
GPR Line 6



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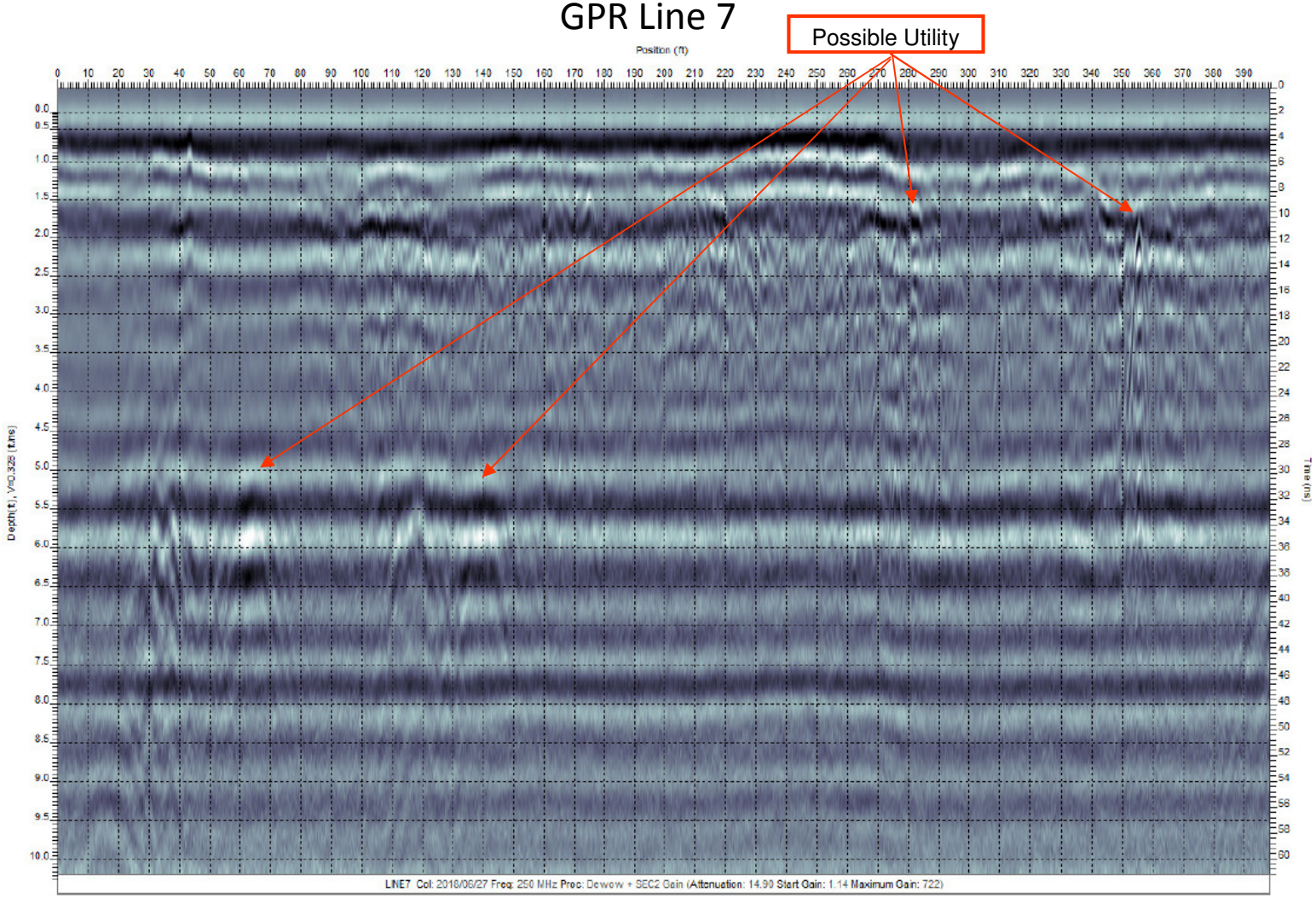
GPR Line 7



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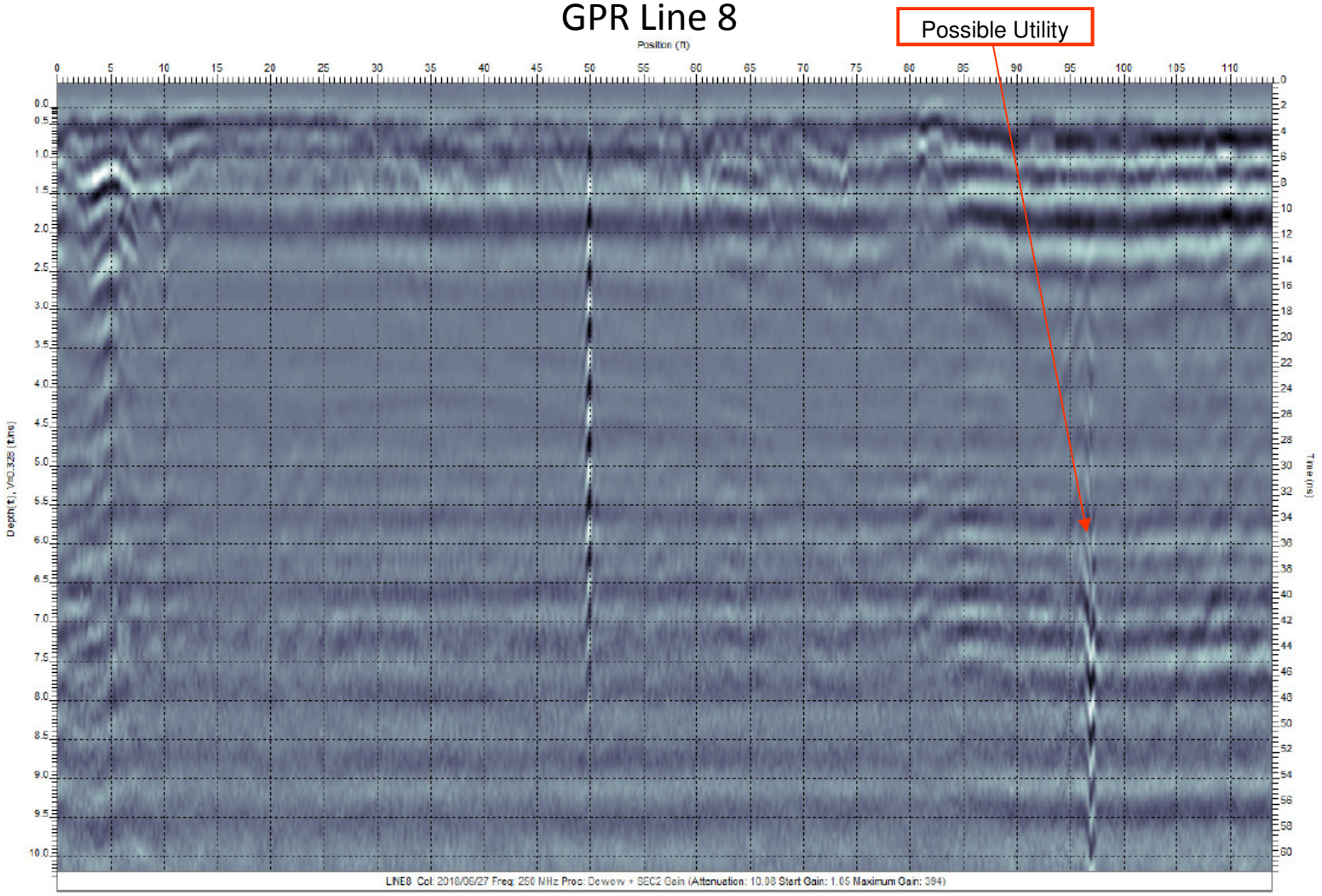
GPR Line 8



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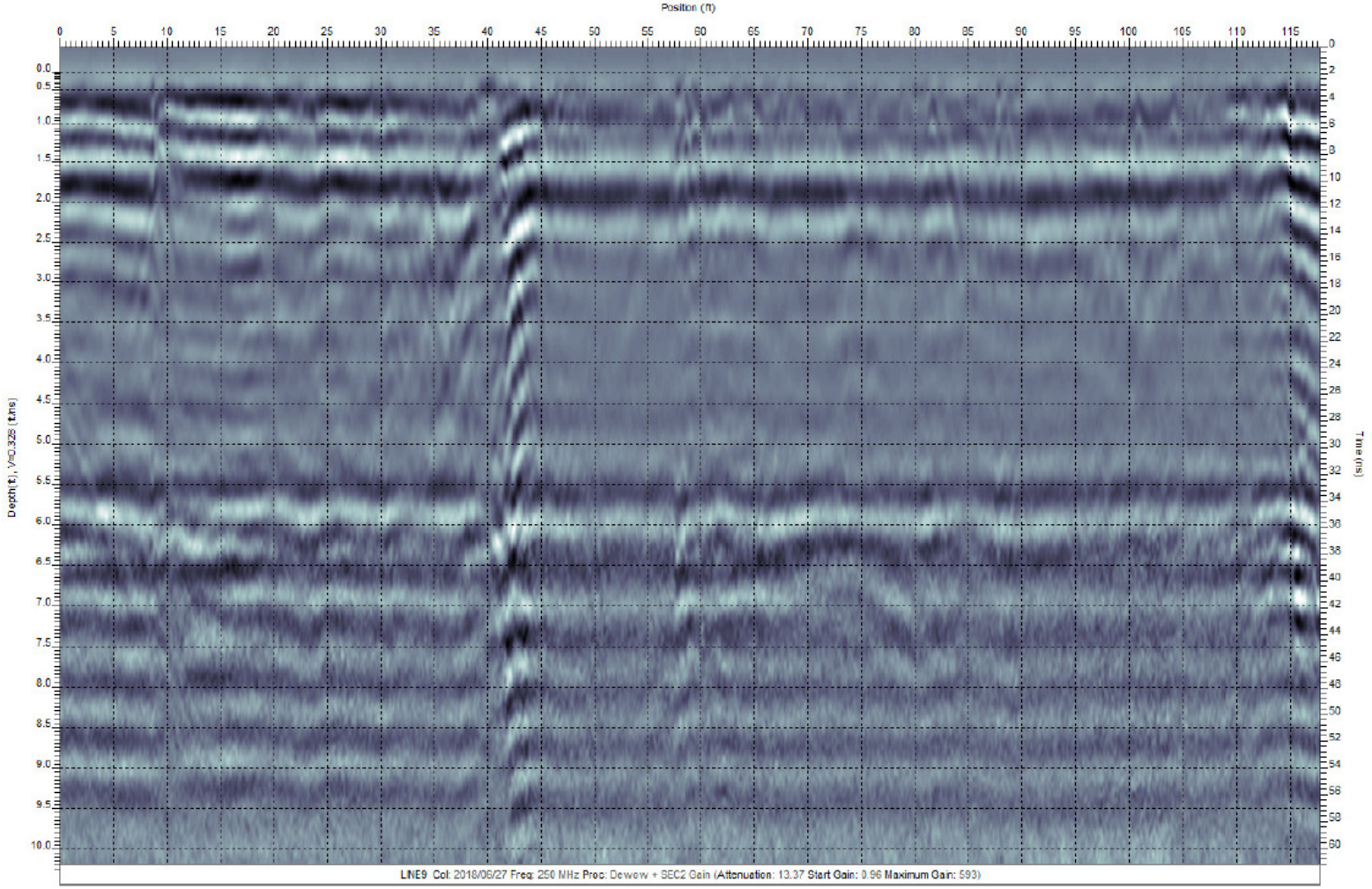
GPR Line 9



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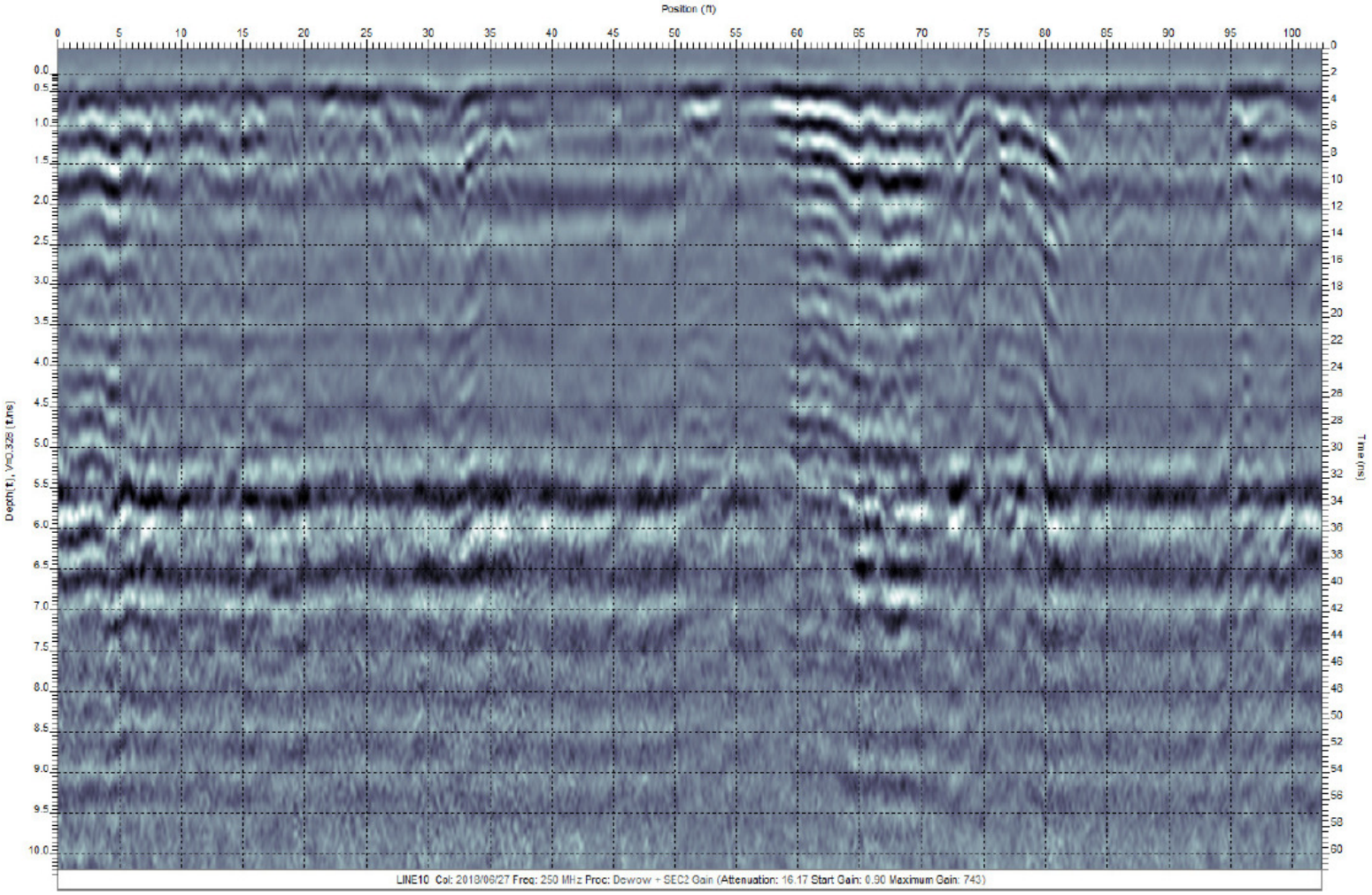
GPR Line 10



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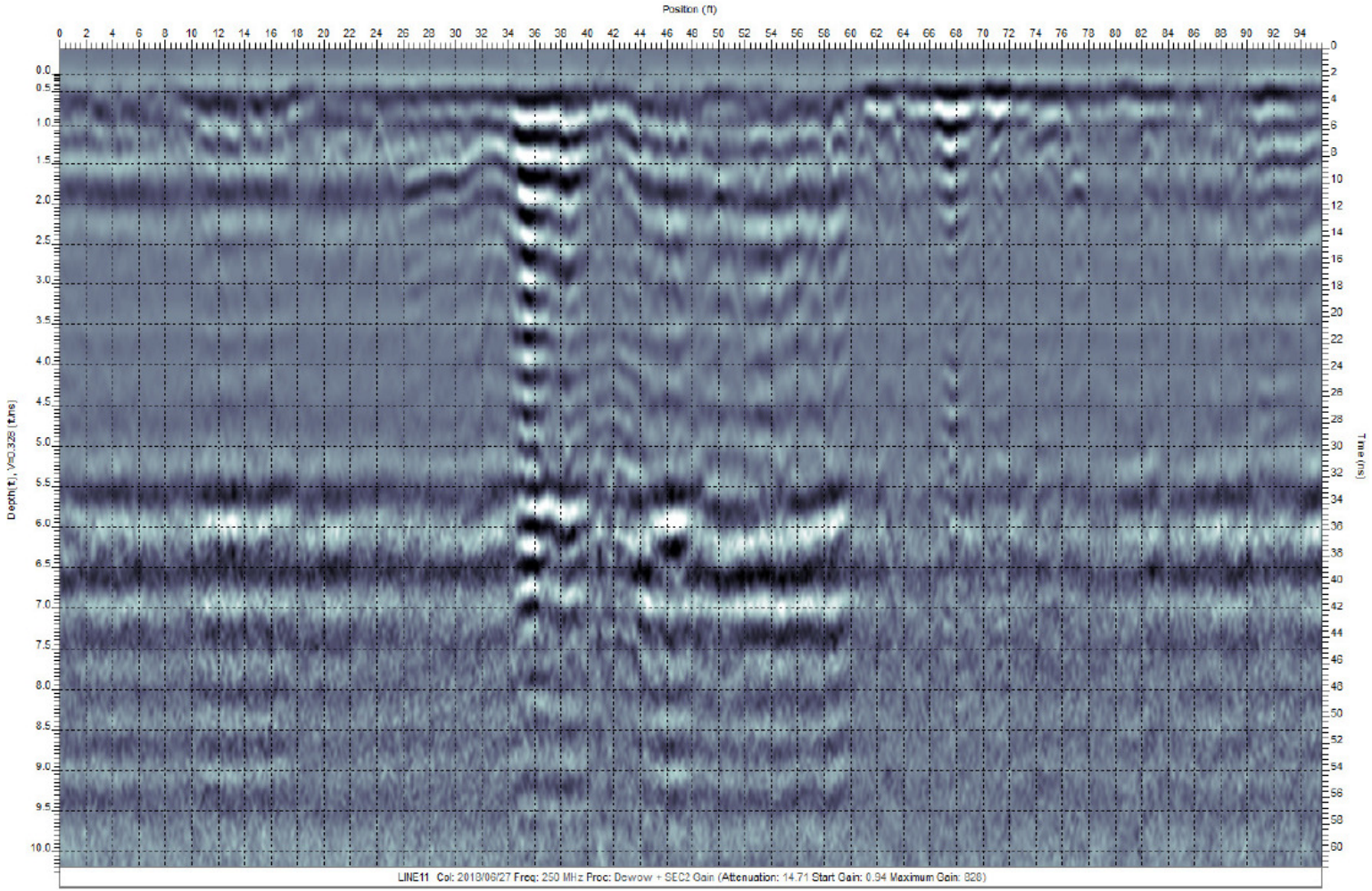
GPR Line 11



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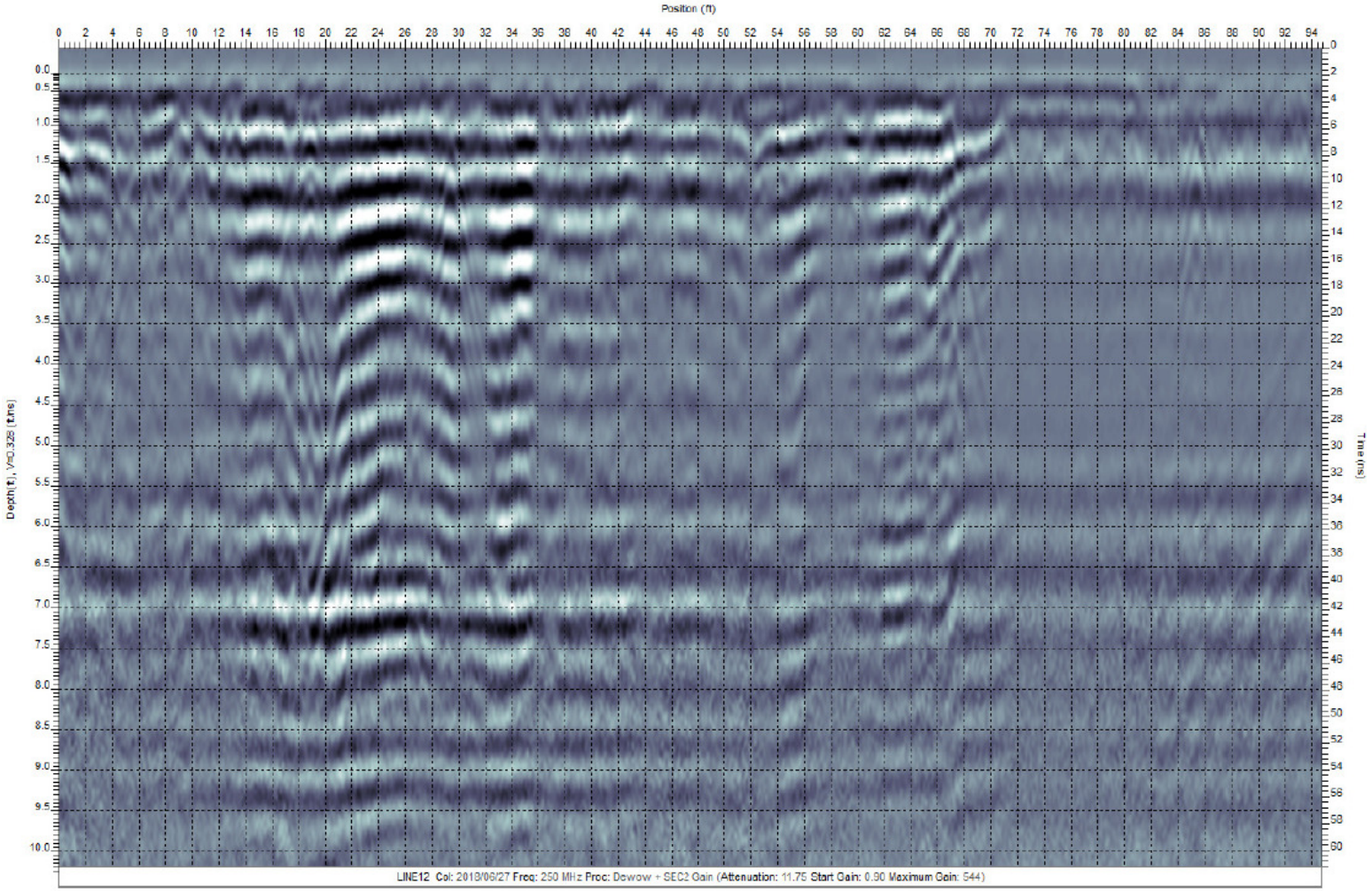
GPR Line 12



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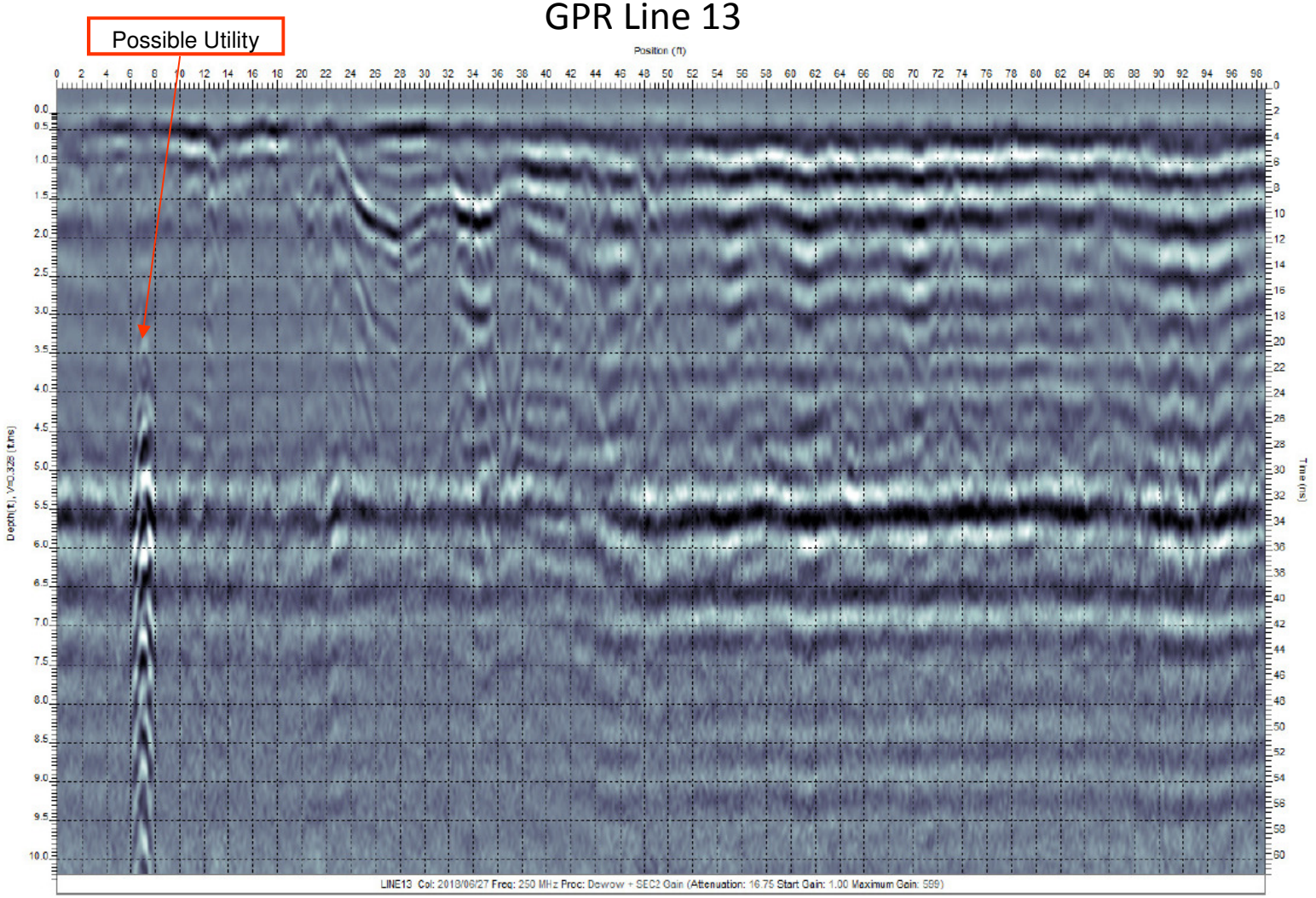
GPR Line 13



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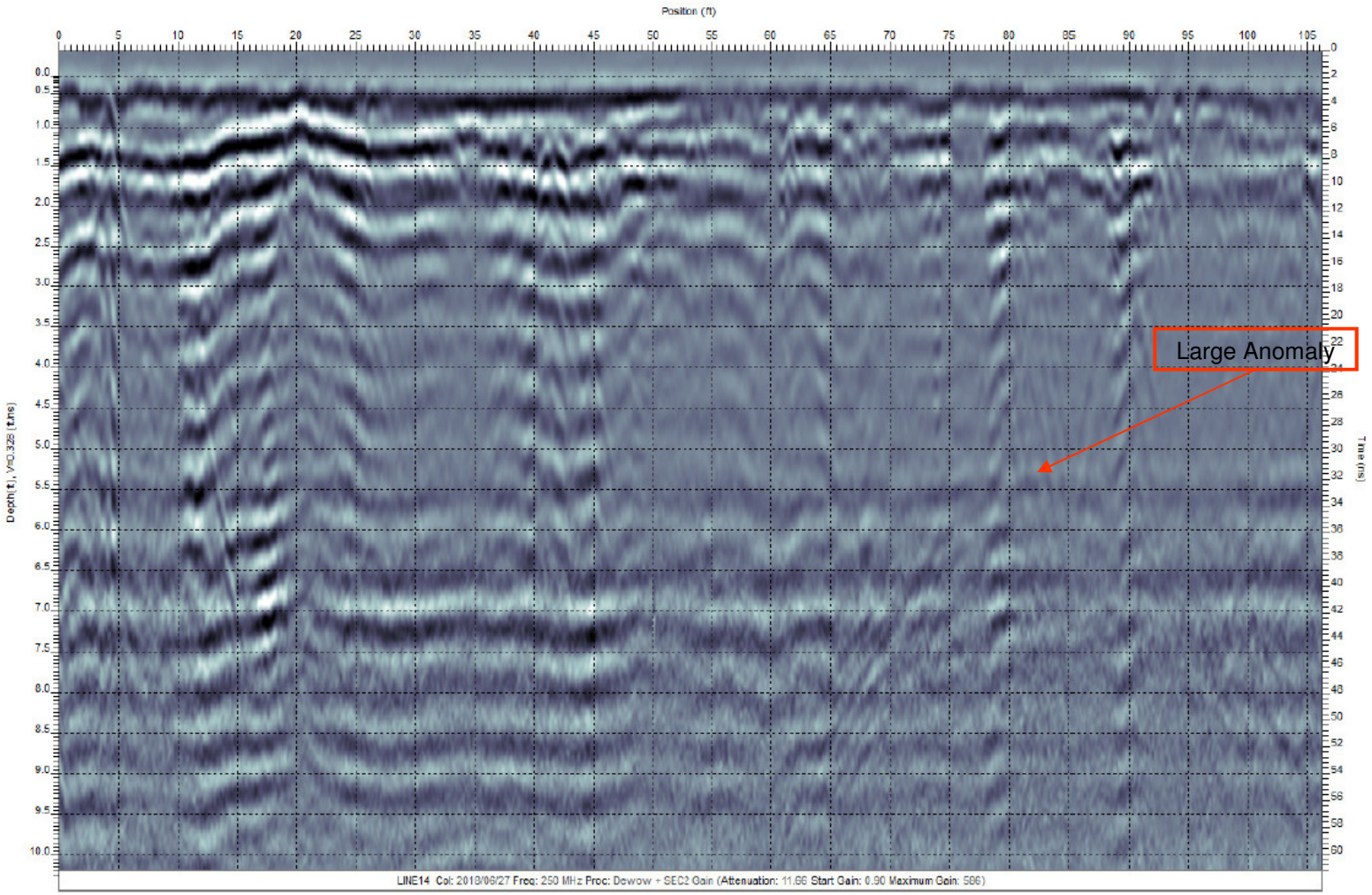
GPR Line 14



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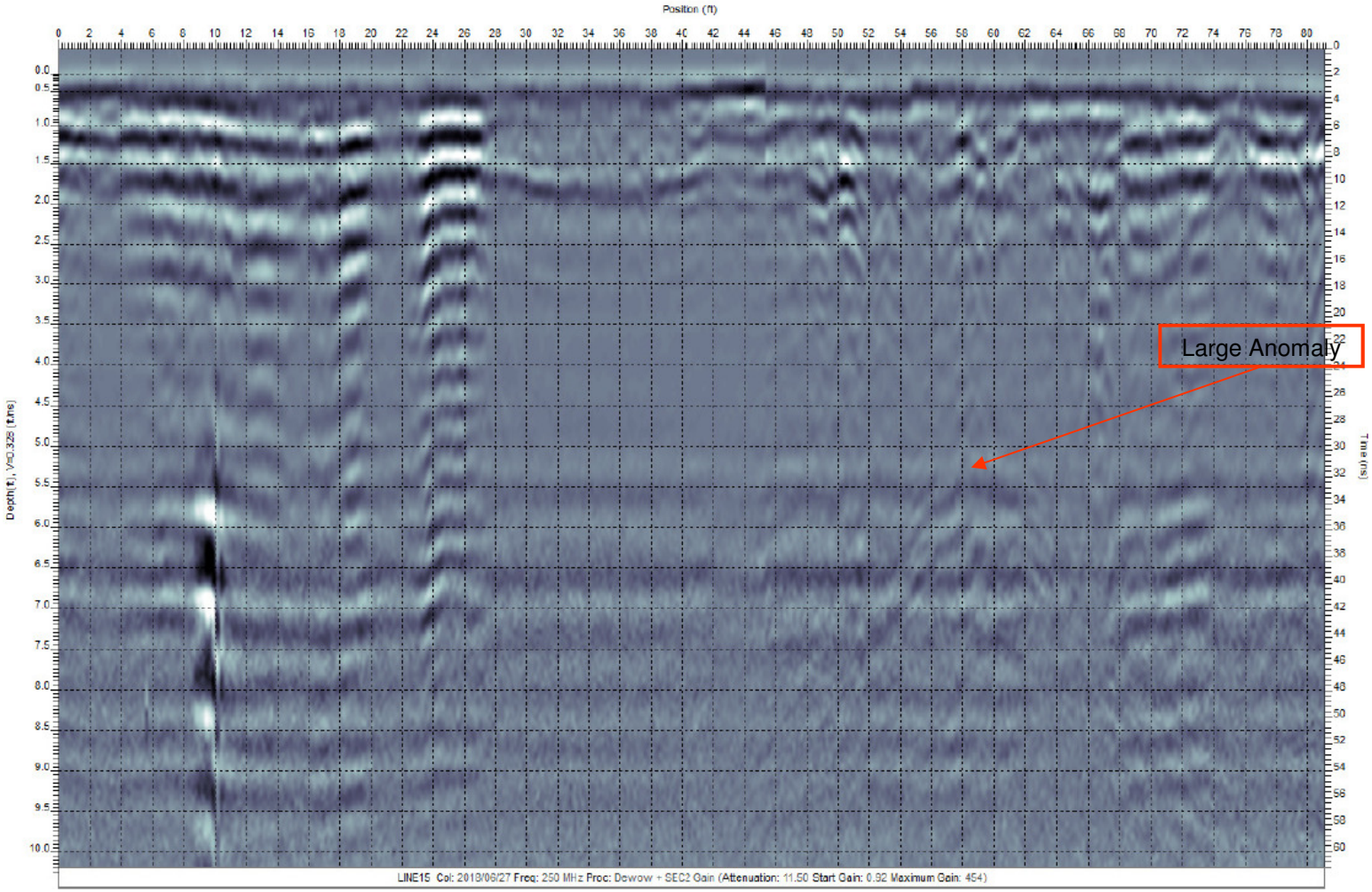
GPR Line 15



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GPR Line Scan

St. Elizabeth's Geophysical Testing

Washington, DC.

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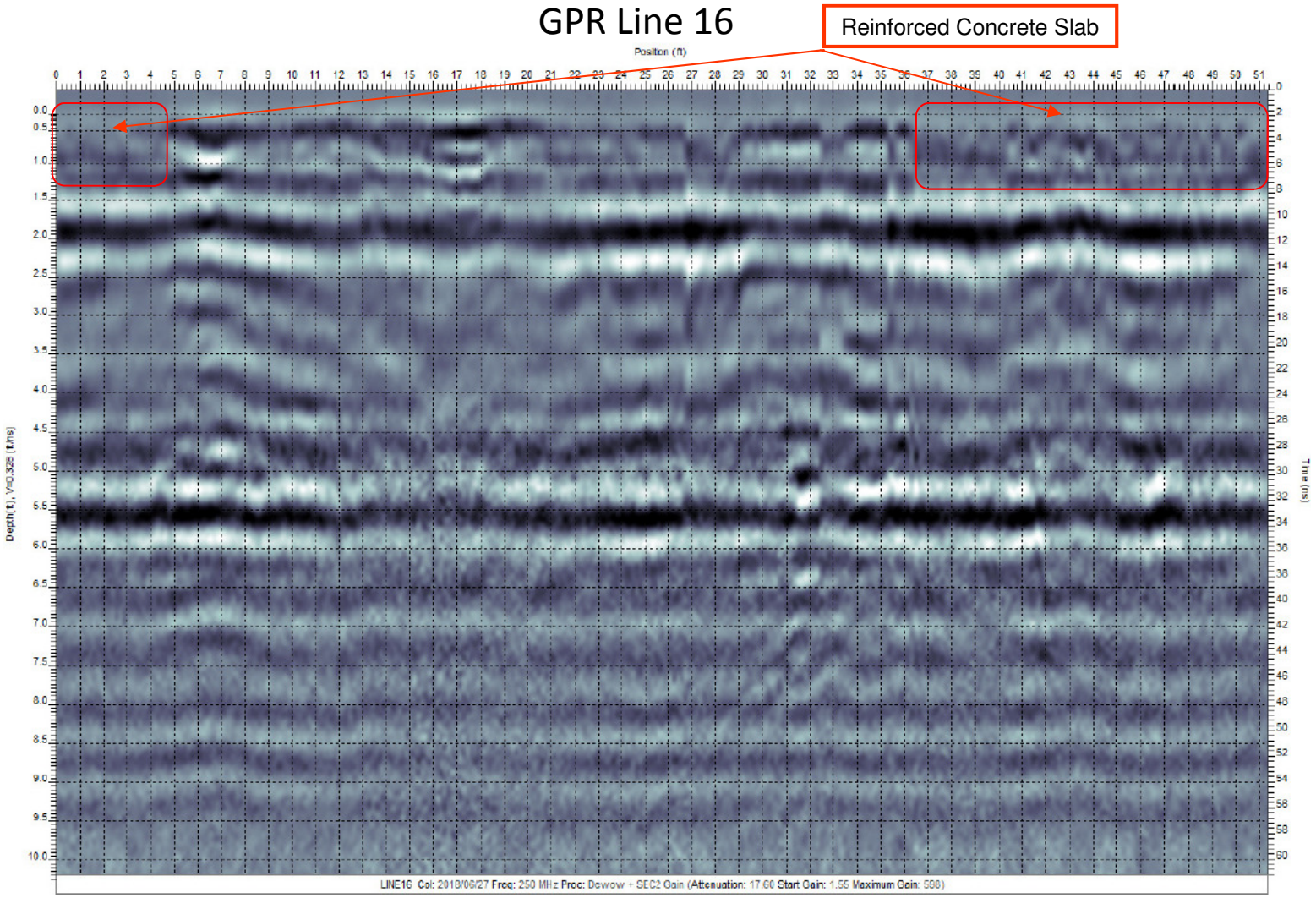
GPR Line 16



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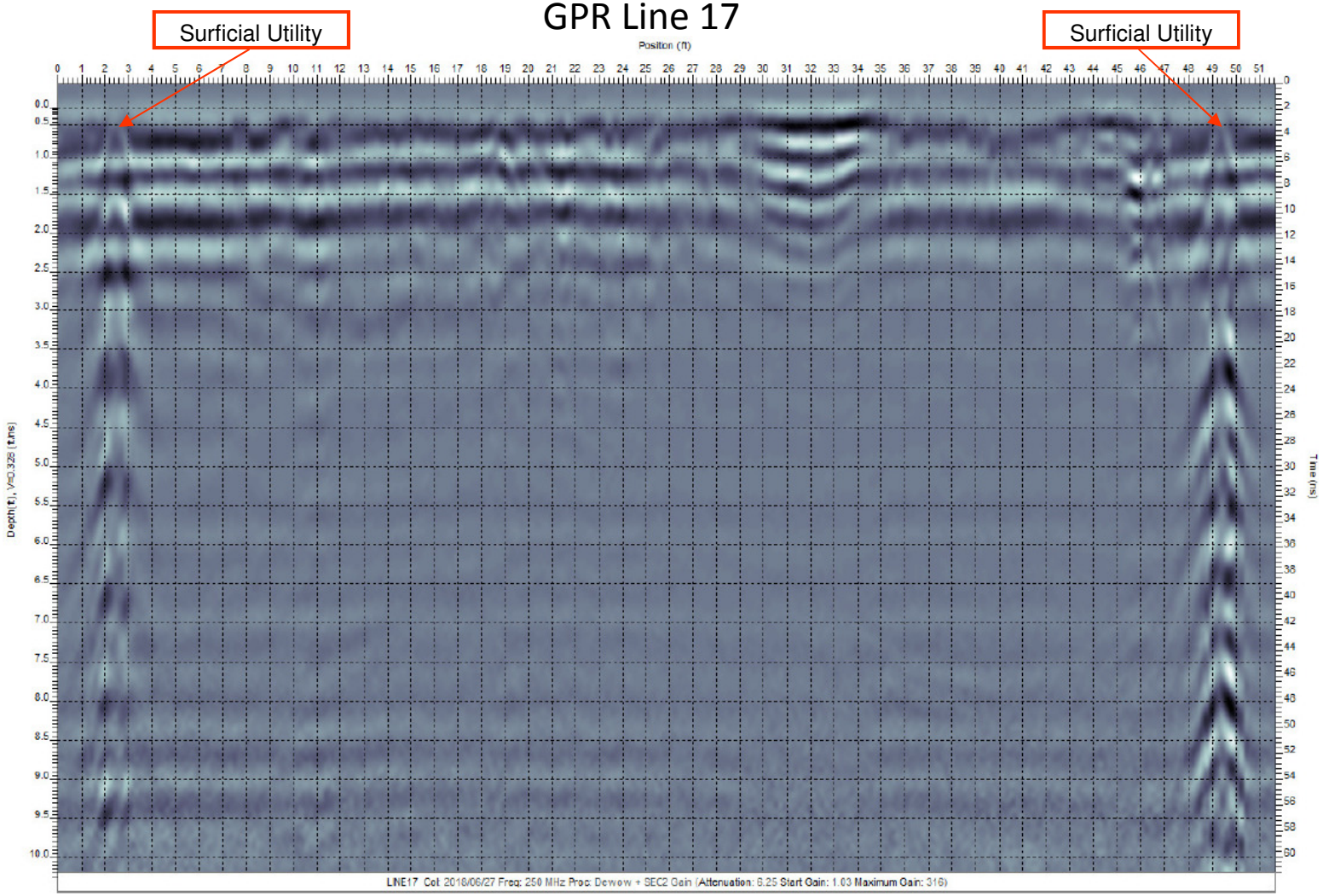
GPR Line 17



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GPR Line Scan

St. Elizabeth's Geophysical Testing

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Appendix C

Soil Laboratory Results Table For St. Elizebeth 801 Shelter

Chemical of Concern & Group	EPA Regional Screening Residential	DC Tier 0 / EPA Regional Screening Industrial	P-2 (15-20 feet bgs)	P-3 (5-10 feet bgs)	P-4 (5-20 feet bgs)	P-5 (10-15 feet bgs)	P-6 (15-20 feet bgs)	P-7 (5-10 feet bgs)
Total Priority Pollutant Metals (mg/Kg)								
Antimony	31.00	470.00	ND	1.29	4.25	ND	ND	ND
Arsenic	0.68	3.00	0.42	**3.73**	**4.2**	**2.54**	**3.13**	**2.19**
Beryllium	570.00	7,400.00	1.05	0.353	0.285	ND	ND	ND
Cadmium	71.00	980.00	ND	3.05	5.61	ND	ND	ND
Chromium	0.3/120000 (hexavalent/Total)	6.3/1800000 (hexavalent/Total)	**4.340**/25.4	ND/171	ND/30.2	ND/16	ND/19.4	ND/14.3
Copper	3,300.00	47,000.00	19.6	183	170	5.13	8.44	3.36
Lead	400.00	800.00	8.43	103	550	5.96	3.83	5.58
Mercury	11.00	46.00	ND	0.473	0.306	ND	ND	ND
Nickel	820.00	11,000.00	5.1	401	28	2.33	5.73	1.88
Selenium	390.00	5,800.00	0.954	1.69	0.878	0.426	ND	0.505
Silver	390.00	5,800.00	ND	23.5	1.14	ND	ND	ND
Thallium	0.78	12.00	ND	ND	ND	ND	ND	ND
Zinc	23,000.00	350,000.00	8.13	439	693	15.4	16	3.88
TCLP Metals (mg/L)								
Barium	100.000	NA/NP	ND	0.731	ND	ND	ND	ND
Lead	5.000	NA/NP	ND	1.46	ND	ND	ND	ND
Petroleum Hydrocarbons (mg/Kg)								
TPH-GRO	100.000	NA/NP	ND	ND	ND	ND	ND	ND
THP-DRO	100.000	NA/NP	ND	**101**	**1390**	ND	ND	ND
Total Semi-Volatile Organic Compounds (mg/Kg)								
Bis(2-ethylhexyl) phthalate	39.000	160.000	ND	0.321	ND	ND	ND	ND
TCLP Semi-Volatile Organic Compounds (mg/L)								
All	NA/NP	NA/NP	ND	ND	ND	ND	ND	ND
Total Cyanide (mg/Kg)								
Cyanide	23.000	150.000	ND	ND	ND	ND	0.420	ND

Soil Laboratory Results Table For St. Elizebeth 801 Shelter

Chemical of Concern & Group	EPA Regional Screening Residential	DC Tier 0 / EPA Regional Screening Industrial	P-2 (15-20 feet bgs)	P-3 (5-10 feet bgs)	P-4 (5-20 feet bgs)	P-5 (10-15 feet bgs)	P-6 (15-20 feet bgs)	P-7 (5-10 feet bgs)
Total Volatile Organic Compounds (mg/Kg)								
All	NA/NP	NA/NP	ND	ND	ND	ND	ND	ND
TCLP Volatile Organic Compounds (mg/L)								
All	NA/NP	NA/NP	ND	ND	ND	ND	ND	ND
Polychlorinated Biphenyls (mg/Kg)								
All	NA/NP	NA/NP	ND	ND	ND	ND	ND	ND
TCLP Pesticides (mg/L)								
All	NA/NP	NA/NP	ND	ND	ND	ND	ND	ND
TCLP Herbicides (mg/L)								
All	NA/NP	NA/NP	ND	ND	ND	ND	ND	ND
Dioxins (pg/g)								
123478-HxCDD	100	470	ND	27	14	ND	ND	ND
123678-HxCDD	100	470	ND	47	25	ND	ND	ND
123789-HxCDD	100	470	ND	36	21	ND	ND	ND
1234678-HpCDD	No Standard	No Standard	ND	390	230	5.6	ND	9.2
12378-PeCDD	No Standard	No Standard	ND	29	12	ND	ND	ND
2378-TCDD	4.8	22.0	ND	**14**	4.5	ND	ND	ND
OCDD	No Standard	No Standard	570	1,300	1,200	740	3,500	930
Total TCDD	No Standard	No Standard	ND	220	77	ND	ND	ND
Total PeCDD	No Standard	No Standard	ND	300	140	ND	ND	ND
Total HxCDD	100	470	ND	**510**	**260**	19	ND	ND
Total HpCDD	No Standard	No Standard	ND	750	420	39	30	19
Furans (pg/g)								
2378-TCDF	73,000,000	1,000,000,000	ND	15	ND	ND	ND	ND
12378-PeCDF	73,000,000	1,000,000,000	ND	21	9.7	ND	ND	ND
23478-PeCDF	73,000,000	1,000,000,000	ND	30	16	ND	ND	ND
123478-HxCDF	73,000,000	1,000,000,000	ND	20	ND	ND	ND	ND
123678-HxCDF	73,000,000	1,000,000,000	ND	32	18	ND	ND	ND

Soil Laboratory Results Table For St. Elizebeth 801 Shelter

Chemical of Concern & Group	EPA Regional Screening Residential	DC Tier 0 / EPA Regional Screening Industrial	P-2 (15-20 feet bgs)	P-3 (5-10 feet bgs)	P-4 (5-20 feet bgs)	P-5 (10-15 feet bgs)	P-6 (15-20 feet bgs)	P-7 (5-10 feet bgs)
234678-HxCDF	73,000,000	1,000,000,000	ND	50	31	ND	ND	ND
123789-HxCDF	73,000,000	1,000,000,000	ND	19	6.4	ND	ND	ND
1234678-HpCDF	73,000,000	1,000,000,000	ND	190	93	ND	ND	ND
1234789-HpCDF	73,000,000	1,000,000,000	ND	21	12	ND	ND	ND
OCDF	73,000,000	1,000,000,000	ND	110	65	ND	ND	ND
Total TCDF	73,000,000	1,000,000,000	ND	370	120	ND	ND	ND
Total PeCDF	73,000,000	1,000,000,000	ND	360	170	ND	ND	ND
Total HxCDF	73,000,000	1,000,000,000	ND	310	160	ND	ND	ND
Total HpCDF	73,000,000	1,000,000,000	ND	260	160	ND	ND	ND

Sample results which exceeded residential standards are bolded.

Notes:

ND = Non Detect
NA/NP = Not applicable/not provided
mg/Kg = milligrams per kilogram
mg/L = milligrams per liter
pg/g - picograms per gram