

Phase II Environmental Site Assessment

Field Street I and II
Field Street and E. Grand Boulevard
Detroit, Michigan

Field Street III Limited Dividend Housing Association
LLC

May 5, 2020

ASTI ENVIRONMENTAL



Phase II Environmental Site Assessment

Field Street I & II Field Street and E. Grand Boulevard Detroit, Michigan

May 5, 2020

Prepared For:


Field Street III Limited Dividend Housing Association LLC
32600 Telegraph Road, Suite 102
Bingham Farms, MI 48025
and
Michigan State Housing Development Authority
735 E. Michigan Avenue
Lansing, Michigan 48912

Report Prepared By:

ASTI Environmental
10448 Citation Drive, Suite 100
Brighton, Michigan 48116
(810) 225-2800


ASTI Project No. 1-11284

Report Prepared by:



Jeremy Efros, EP, CPG
Environmental Geologist

Report Reviewed by:



Brian Kuberski, EP
Group Leader



TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
Title Page	i
Table of Contents	ii
1.0 Introduction	1
2.0 Purpose and Subject Property History and Information	3
2.1 Purpose	3
2.2 Historic Uses of the Subject Property	4
2.3 Current Uses of the Subject Property	4
2.4 Existing Infrastructure Features	4
3.0 Geophysical Survey and Test Pit Investigation	5
4.0 Soil Boring Locations	6
5.0 Sample Collection Procedures	8
6.0 Soil and Groundwater Characteristics	11
6.1 Soil	11
6.2 Groundwater	11
7.0 Pathway Evaluation	12
8.0 Analytical Results	13
9.0 Conclusions And Recommendations	15

FIGURES

- 1 Site Location Map
- 2A Soil Boring Location Map
- 2B Soil Boring Location Map

TABLES

- 1 Summary of Soil Sample Analytical Results

ATTACHMENTS

- A Geophysical Survey Report
- B Soil Boring Logs
- C Laboratory Analytical Reports and Chain-of-Custody Documentation

1.0 INTRODUCTION

ASTI Environmental (ASTI) was retained by Field Street III Limited Dividend Housing Association (LDHA) LLC to conduct a Phase II Environmental Site Assessment (ESA) of multiple parcels located on Field Street and E. Grand Boulevard in Detroit, Wayne County, Michigan (Subject Property). This Limited Phase II ESA was prepared for the benefit of Field Street III LDHA LLC and the Michigan State Housing Development Authority (MSHDA) and ASTI acknowledges that said parties may rely upon the contents and conclusions presented in this report. The Subject Property consists of 19 parcels comprising 4.7 acres of land. The Parcel information including associated addresses is as follows:

Parcel Identification Field Street I			
Parcel No.	Acreage	Unit Addresses	
15007487-8	0.34	1005 and 1007	Field Street
15007484-6	0.62	1023, 1025, 1027, 1029, & 1031	Field Street
15007482-3	0.41	1045, 1047, 1049, & 1051	Field Street
15007481	0.21	1065 & 1067	Field Street
15007479-80	0.41	1083, 1085, 1091, & 1093	Field Street
15007478	0.21	1103	Field Street
15007534	0.27	240, 244, 246, & 250	E. Grand Blvd

Parcel Identification Field Street II			
Parcel No.	Acreage	Unit Addresses	
17013513	0.11	1014 & 1016	Field Street
17013520-1	0.2	1070 & 1074	Field Street
17013523-4	0.17	1090 & 1094	Field Street
17013525-7	0.26	1100, 1104, & 1108	Field Street
17013536-7	0.17	1448 & 1452	Field Street
17013538	0.09	1458	Field Street
17013539-40	0.26	1462, 1470, & 1474	Field Street
15007472	0.31	1481 & 1485	Field Street
15007471	0.21	1491 & 1495	Field Street

Parcel Identification			
Field Street II - Hamilton House			
Parcel No.	Acreage	Unit Addresses	
15007531	0.18	232	E. Grand Blvd Apts. 101, 102, 201, 202 & B
15007532	0.18	236 & 238	E. Grand Blvd
15007533	0.09	242 & 248	E. Grand Blvd

A Site Location Map is provided as Figure 1. The Subject Property parcel boundaries are depicted on Figures 2A and 2B. The Phase II ESA was conducted in accordance with ASTI's Scope of Work to Conduct a Phase II ESA of Field Street I, II, & III, Field Street and East Grand Boulevard, Detroit, Michigan dated March 26, 2020 that was approved by MSHDA.

2.0 PURPOSE AND SUBJECT PROPERTY HISTORY AND INFORMATION

2.1 Purpose

A Phase I ESA of the Subject Property was completed by ASTI on November 13, 2019. The Phase I ESA identified the following recognized environmental conditions (RECs) with respect to the Subject Property:

- The suspected former onsite use of a 1,000-gallon UST at 1470 Field Street is representative of a REC. The fate of the UST is unknown and it common for USTs to have been orphaned in place.
- Use of the south adjoining site for suspected dry cleaning at 7335 and 7345 E. Lafayette Avenue is representative of a REC. Dry cleaning solvents are commonly mismanaged, and these locations are in close proximity to the Subject Property.
- Use of the west adjoining site for suspect dry cleaning at 1122 Field Street (SEC Field & Agnes) is representative of a REC. Dry cleaning solvents are commonly mismanaged, and this location is in close proximity to the Subject Property.
- The west adjoining BEA site named Adult Well-Bring Services is representative of a REC. BEAs represent known releases. ASTI does not know the nature or extent of the release.
- The east adjoining BEA site named 1013 & 1017 Sheridan is representative of a REC. BEAs represent known releases. ASTI does not know the nature or extent of the release.

Additionally, ASTI identified the following significant data gap:

- At this site, there is no available information about the source of the backfill at historical developments. It is suspected that demolition debris would have been used as part of the backfilling process.

The purpose of the Phase II ESA was to assess if impacts have occurred on the Subject Property from these RECs and/or significant data gap.

2.2 Historic Uses of the Subject Property

Based on the Phase I ESA research, the Subject Property was developed in the late 1800s and early 1900s with numerous residential buildings (dwellings, flats, and apartments) and associated outbuildings. One of the outbuildings at 7259 E. Lafayette was identified as a store and identified a CYS Printing Co. Home-based businesses (e.g., doctor, dentist, roofing, electrician, and painter) were identified amongst residential developments.

A majority of the buildings were demolished in the 1970s and 1980s. In the 1990s, additional buildings were removed, and a series of townhomes were constructed. Home-based businesses (e.g., Scott's Cleaning Co., Wizdom Magazine, Drivers Hammers & Tools) were identified within the residential units.

2.3 Current Uses of the Subject Property

The Subject Property is developed for residential usage. Each Subject Property parcel is developed with at least one residential structure with the exception of parcel 15007478 (1103 Field Street), which is vacant grass covered land.

2.4 Existing Infrastructure Features

The Subject Property parcels are developed with 2-story residential apartments or townhouses except for parcel 15007478 (1103 Field Street), which is vacant land. The square footages for the buildings range from 2,160 to 4,526 square feet and the buildings have concrete foundations with varying construction. The buildings contain basements. The Subject Property is supplied potable water from the Detroit Water and Sewerage Department. Electrical and natural gas services are provided by DTE Energy.

3.0 GEOPHYSICAL SURVEY AND TEST PIT INVESTIGATION

A combined electromagnetic induction (EM) and ground penetrating radar (GPR) geophysical survey was conducted on April 6, 2020 by Geophysical Imaging, Inc. (GII) under the supervision of ASTI. The purpose of the geophysical survey was to determine if an abandoned UST was present on 1470 Field Street. The survey was completed over the exterior portions of 1470 Field Street. The EM survey identified one strong in-phase ('metal') anomaly that was interpreted to be a potential UST on the western portion of the 1470 Field Street parcel. GII ran one GPR linescan over the EM anomaly, which resulted in a hyperbolic reflection indicative of a cylindrical-shaped object. The geophysical anomaly was therefore interpreted to be a potential UST. A copy of the Geophysical Survey Report is provided as Attachment A.

On April 9, 2020, ASTI supervised the completion of a test pit excavation in the location of the geophysical anomaly. The test pit was conducted by ERG Environmental Services using a mini excavator. A four-foot diameter UST with an estimated length of 10-12 feet was uncovered approximately three feet below ground surface (bgs). The UST contained a concrete filled manway that sat overtop of the center of the UST and extended up to six inches bgs. Portions of the UST were not uncovered during the completion of the test pit excavation to avoid damaging portions of the landscaping. The UST was filled with water to approximately 3 feet above the UST bottom. No petroleum odors or oil was noted on the water. Based on the parcel history, the UST was likely used for storing heating oil for a former apartment building. The approximate location of the UST is depicted on Figure 2A.

4.0 SOIL BORING LOCATIONS

On April 6 and 8, 2020, ASTI supervised the completion of 30 soil borings (SB-1 through SB-30) at the Subject Property using a direct-push Geoprobe® drill rig. The soil borings were advanced to depths ranging from 7.5 to 12 feet bgs. In addition, ASTI installed two soil gas wells (SG-1 and SG-2) at the Subject Property. Sample Location Maps are provided as Figures 2A and 2B. Boring/sample ID, boring/sample locations, and depth were as follows:

Boring/Sample ID	Boring/Sample Location	Depth of Boring
SB-1	On 1014-1016 Field Street parcel regarding the historical dry cleaner and BEA on the eastern-adjointing sites	12 feet
SB-2 and SB-3	On 1070-1074 Field Street parcel regarding backfill from former structures	8 feet
SB-4	On 1090-1094 Field Street parcel regarding backfill from a former structure	8 feet
SB-5, SB-6 & SB-7	On 1100-1108 Field Street parcel regarding backfill from a former structure	8 feet
SB-8	On 1103 Field Street parcel regarding backfill from a former structure	8 feet
SB-9 & SB-10	On 1083-1095 Field Street parcel regarding backfill from a former structure	8 feet
SB-11	On 1067 Field Street parcel regarding backfill from a former structure	12 feet
SB-12, SB-13, & SB-14	On 1047-1065 Field Street parcel regarding backfill from a former structure	8 feet
SB-15	On 1027-1045 Field Street parcel regarding backfill from a former structure	8 feet
SB-16	On 1027-1045 Field Street parcel regarding backfill from a former structure	12 feet
SB-17 & SB-18	On 1005-1007 Field Street parcel regarding backfill from a former structure	8 feet
SB-19	On 240 E. Grand Boulevard parcel regarding backfill from a former structure	8 feet
SB-20	On 244 E. Grand Boulevard parcel regarding backfill from a former structure	8 feet
SB-21	On 246-250 E. Grand Boulevard parcel regarding backfill from a former structure	7.5 feet
SB-22	On 1470-1474 Field Street parcel regarding the geophysical anomaly	12 feet
SB-23	On 1462-1474 Field Street parcel regarding backfill from a former structure	8 feet
SB-24	On 1458 Field Street parcel regarding backfill from a former structure	8 feet
SB-25 & SB-26	On 1448-1452 Field Street parcel regarding backfill from a former structure	8 feet

Boring/Sample ID	Boring/Sample Location	Depth of Boring
SB-27	On 1462-1474 Field Street parcel regarding backfill from a former structure	8 feet
SB-28 & SB-29	On 1481 Field Street parcel regarding the southern-adjointing BEA site	12 feet
SB-30	On 1491-1495 Field Street parcel regarding backfill from a former structure	12 feet
SG-1	On 1014-1016 Field Street parcel regarding the historical dry cleaner on the eastern-adjointing site	8 feet
SG-2	On 1100-1108 Field Street parcel regarding the historical dry cleaner on the northern-adjointing site	8 feet

5.0 SAMPLE COLLECTION PROCEDURES

The soil borings were advanced to depths of 8 or 12 feet bgs using a direct-push Geoprobe® drill rig. Soil was extracted from the ground in pre-cleaned, 4-foot-long, acetate liners. Soil encountered during field activities was identified by ASTI's field personnel, examined for visual and/or olfactory evidence of impact, and screened using a photoionization detector (PID) with notes recorded in a field logbook. Prior to sampling, the PID was calibrated to manufacturer specifications using 100 parts per million (ppm) isobutylene calibration gas. All down-hole equipment was decontaminated using an Alconox® wash and clean water rinse between borings to minimize the risk of cross contamination of samples. ASTI collected one soil sample from each soil boring. The soil samples were collected into laboratory certified clean, unpreserved 8-ounce glass jars and 40-ml glass vials preserved in the field with methanol, placed on ice, and submitted to Fibertec Environmental Services (Fibertec) in Holt, Michigan under standard chain-of-custody procedures.

Three duplicate soil samples, Dup1-S through Dup3-S, were collected from SB-2, SB-14, and SB-23, respectively. In addition, two methanol blank samples were maintained with the samples during sampling and transport. The soil and groundwater samples were analyzed for some combination of volatile organic compounds (VOCs) by US EPA Method 8260D; polynuclear aromatic hydrocarbons (PNAs) by US EPA Method 8270E; and RCRA 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) by US EPA Method 6020A and 7471B.

The exterior soil gas wells were installed using a 1.75-inch long implant with a 0.5-inch vapor screen attached onto 1/4-inch outer diameter Teflon lined tubing. The vapor screens were set to 7.5 feet bgs with the 1/4-inch tubing running up to the surface. The screens were set at 7.5 feet as the buildings contained basements. Six inches of sand was backfilled below the screen to six inches above the screen and the surface opening was sealed with bentonite that was hydrated with laboratory prepared deionized water. After allowing a minimum of 45 minutes for subsurface equilibration, the 1/4-inch outer diameter tubing connected to the soil gas well implant was connected to a regulator set with a maximum flow rate of approximately 200 milliliters per minute. Three volumes of air were purged from the soil gas well SG-2 with

a pump affixed to a helium chamber. During the purge, the well was checked for leaks using helium tracer gas. Note that after purging the tubing and sand pack from soil gas well SG-1, no air could be pulled through the silty clay stratum and therefore no sample was collected from that well. Soil gas samples from soil gas well SG-2, including the duplicate soil gas sample (Dup1-SG), were collected into 1-liter amber bottle-vacs for analysis of VOCs by US EPA Method TO-15. The soil gas well was additionally screened for oxygen and methane using a Landfill Gas Analyzer. No methane was detected in the well. Soil gas sampling forms were filled out during the soil gas sampling activities and are provided in Attachment B.

Sample depth, location rationale, and analysis are provided in the following table.

Boring	Sample Matrix	Sample Depth	Rationale for sample depth	Analysis
SB-1	Soil	7-8'	Area of the clay stratum with silt seams	VOCs, PNAs, & RCRA 8 metals
SB-2	Soil	1-2'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-3	Soil	4.5-5.5'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-4	Soil	1-2'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-5	Soil	1-2'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-6	Soil	1.5-2.5'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-7	Soil	1-2'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-8	Soil	1-2'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-9	Soil	2-3'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-10	Soil	1-2'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-11	Soil	3-3.5'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-12	Soil	1-2'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-13	Soil	1.5-2.5'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-14	Soil	4-5'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-15	Soil	3-4'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-16	Soil	7-8'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-17	Soil	1-2'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-18	Soil	1.5-2.5'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-19	Soil	1-2'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-20	Soil	2-3'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-21	Soil	3-4'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-22	Soil	9-10'	Beneath anticipated depth of UST	VOCs, PNAs, & RCRA 8 metals
SB-23	Soil	2-3'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-24	Soil	1-2'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-25	Soil	1-2'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-26	Soil	3-4'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-27	Soil	0.5-1'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-28	Soil	11-12'	Area of the clay stratum with silt seams	VOCs, PNAs, & RCRA 8 metals

Boring	Sample Matrix	Sample Depth	Rationale for sample depth	Analysis
SB-29	Soil	1-2'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SB-30	Soil	1-2'	Collected within backfill soil	VOCs, PNAs, & RCRA 8 metals
SG-2	Soil Gas	Screen at 7.5'	Representative soil gas sample	TO-15 VOCs

6.0 SOIL AND GROUNDWATER CHARACTERISTICS

The following sections describe the encountered soil and groundwater conditions during the investigation.

6.1 Soil

The general subsurface lithology encountered in soil borings underlying surface cover (asphalt or topsoil) consisted of fill soils comprising sand, silty-sand, or sandy-clay with trace amounts of debris (asphalt, brick, concrete, slag, wood, and cinders), where present, that extended to depths between 1.75 feet and 10.5 feet bgs. The fill materials were underlain by a silty-clay stratum to the explored depth of the borings with the maximum depth of borings at 12 feet bgs. No odors or staining was observed in the soil borings and no VOCs were detected on the PID during screening of the soil cores. Refer to the boring logs included as Attachment B for more details on the encountered stratigraphy.

6.2 Groundwater

Groundwater was encountered in soil borings SB-4, SB-5, SB-11, SB-12, SB-13, and SB-30 at depths between 4.5 and 7 feet bgs in limited quantity. The groundwater was present in discontinuous perched conditions and is not representative of groundwater hydraulically connected in an aquifer.

7.0 PATHWAY EVALUATION

The Michigan Department of Environment, Great Lakes, and Environment (EGLE) Generic Residential Cleanup Criteria (GRCC) used for comparison of the soil analytical for the Subject Property under Part 201 of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as Amended (Part 201) are the drinking water protection (DWP), groundwater surface water interface protection (GSIP), direct contact (DC), and particulate soil inhalation (PSI). The soil volatilization to indoor air inhalation (SVIAI) criterion is not applicable for comparison to the analytical data due to the presence of heterogeneous soil between the vapor source and the buildings. The soil samples were compared to EGLE Draft Site-Specific Volatilization to Indoor Air Criteria (VIAC) using the VIAC calculator available through the EGLE website. The draft VIAC is provided for reference as actual VIAC needs to be obtained through the EGLE. The DWP and GSIP pathways may not be complete at the Subject Property based on the lack of groundwater, connection of municipal source of drinking water, no drinking water or irrigation wells, and no surface water on or near the Subject Property, but are included for comparison for reference.

8.0 ANALYTICAL RESULTS

Soil Analytical

Table 1 presents the laboratory analytical results for the soil samples in comparison to the EGLE Part 201 GRC.

Metals

The laboratory analytical reported the following metals in the samples.

- Arsenic was detected in soil samples SB-1, SB-2, SB-7 through SB-10, SB-16 through SB-26, and SB-28 through SB-30, at concentrations exceeding the GRCC for DC and/or DWP and GSIP.
- Total chromium was reported in soil collected from soil borings SB-1, SB-2, SB-8, SB-24, and SB-29 at concentrations above the GRCC for DWP and/or GSIP.
- Lead was reported in soil samples collected from soil borings SB-5, SB-9, SB-20, SB-23, SB-26, and SB-29 at concentrations exceeding the GRCC for DWP and/or DC.
- Mercury was reported in soil samples collected from soil borings SB-5, SB-9, SB-12, SB-21, SB-26, SB-29, and SB-30 at concentrations exceeding the GRCC for GSIP and draft VIAC.
- Selenium was reported in soil collected from soil borings SB-5, SB-9, SB-18, SB-20, SB-21, SB-26, and SB-29 at concentrations exceeding the GRCC for GSIP.

Soil samples SB-1 (7-8'), SB-22 (9-10'), and SB-28 (11-12') were collected from native materials (silty-clay) with the remainder of the soil samples collected in fill soils. The highest arsenic concentration from these three samples was 8,000 µg/kg in SB-1 (7-8') and the highest chromium (total) concentration in these samples was 19,000 µg/kg in SB-1 (7-8'). Because these soil samples were collected from native soil, the concentrations can be compared to the regional background concentration contained in the Soil Background and Use of the 2005 Michigan Background Soil Survey dated September 2019. The Subject Property is located within the Huron-Erie Glacial Lobe. Following Part 324.20101(e)(ii) of NREPA Act 451 or 1994, the regional background concentration for arsenic in clay in the Huron-Erie Glacial Lobe is 22,800 µg/kg and chromium (total) in clay is 55,600 µg/kg. The concentrations of arsenic and chromium (total) in these samples fall within these regional

background concentrations and therefore does not represent a releases or exceedances of the GRCC.

*PNA*s

The PNA benzo(a)pyrene was reported in SB-21 (3-4') at a concentration above the GRCC for DC. In addition, naphthalene was detected in the sample at a concentration exceeding the GRCC for GSIP and above the draft VIAC. Phenanthrene was also detected above the draft VIAC in soil sample SB-21. The PNA phenanthrene was detected in soil sample SB-29 (1-2') at a concentration exceeding the GRCC for GSIP and above the draft VIAC. No other PNAs were detected at concentrations exceeding the GRCC or draft VIAC in the soil samples.

*VOC*s

The VOCs 1,2-dichlorobenzene and naphthalene were detected in soil sample SB-21 (3-4'), but at concentrations below the GRCC. The VOC trichloroethylene was reported in soil sample SB-29 (1-2') at a concentration below the GRCC but above the draft VIAC. No other VOCs were detected in the soil samples.

Soil Gas Analytical

The laboratory analytical report indicated that no VOCs were detected in soil gas sample SG-2 or the associated duplicate sample (Dup1-SG).

The Laboratory Analytical Report and Chain-of-Custody documentation for all media sampled during this Phase II ESA are provided in Attachment C.

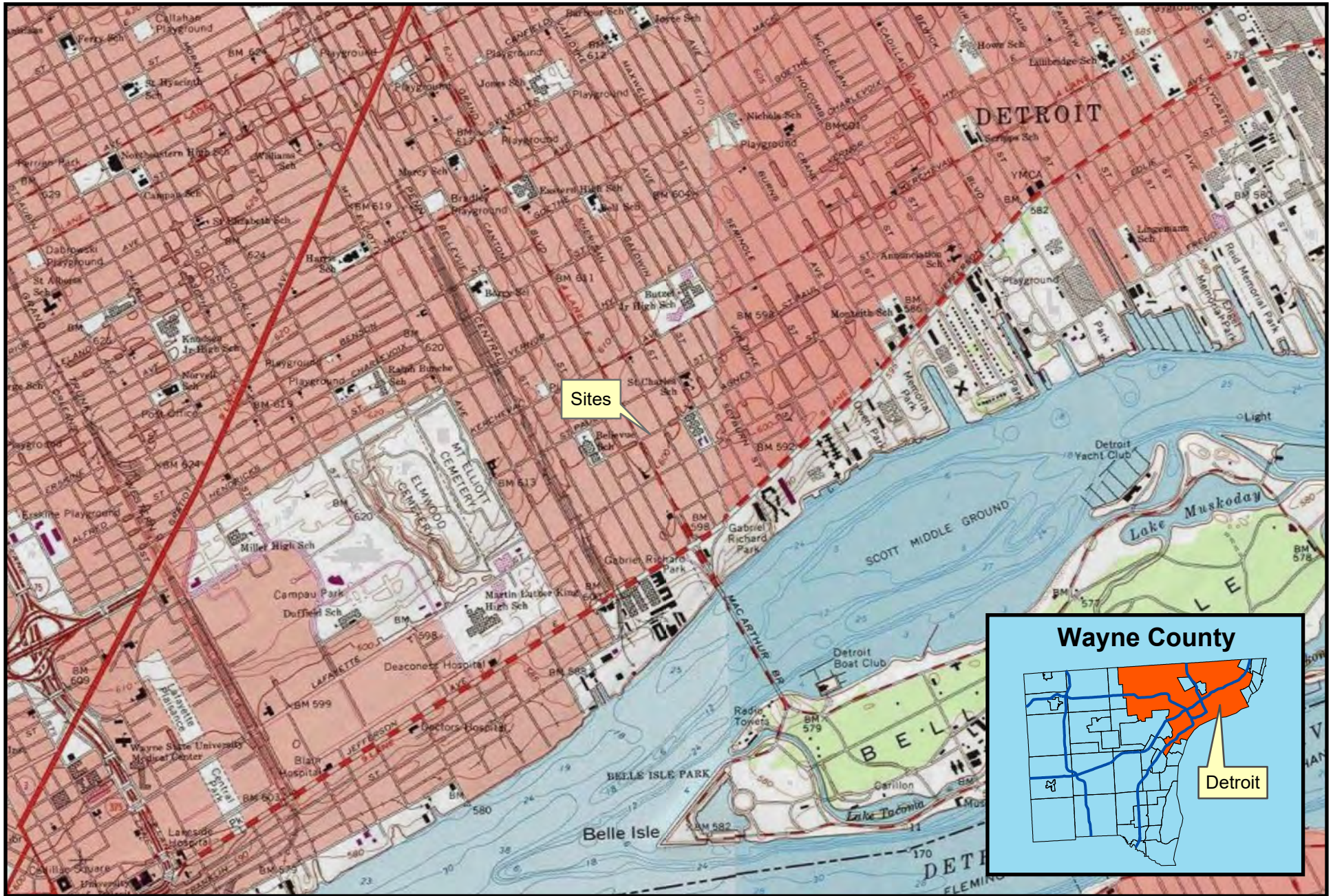
9.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the concentrations of metals, VOCs, and PNAs detected in soil at the Subject Property at concentrations above the GRCC, it is ASTI's opinion that the Subject Property is a "facility" as defined in Part 201 of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as Amended (Part 201). ASTI opines that the data provides sufficient information to support a professional opinion that a release of hazardous substances and/or petroleum products has occurred at the Subject Property with respect to the RECs assessed.

The soil sample results indicate that a potential direct contact and volatilization to indoor air exposure risk is present for the Subject Property and a Response Activity Plan for EGLE approval as part of the MSHDA funding is recommended. Additional sampling for the Response Activity Plan will likely be needed for the design of any mitigation/response activity. ASTI also recommends the completion of Baseline Environmental Assessments for parcels with impacts above the GRCC for submittal to EGLE for statutory liability protection.

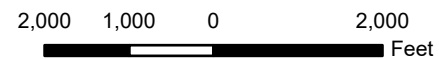
FIGURES

- 1 Site Location Map
- 2A Soil Boring Location Map
- 2B Soil Boring Location Map



Field St. and E. Grand Blvd.

Detroit, MI





LEGEND

- Property Line
- Soil Gas
- ⊗ Soil Boring
- Field Street 1
- Field Street 2
- Geophysical Survey Area
- Underground Storage Tank

GRAPHIC SCALE

1 inch = 50 ft.
Paper Size = (11x17)

Field St. and E. Grand Blvd.

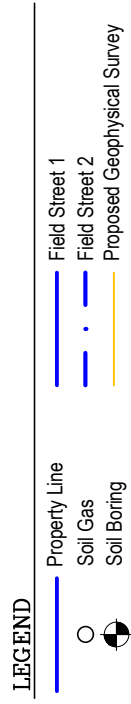
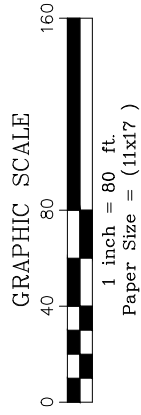
Client: Field Street III LDHA LLC

ASTI Project I-11284, JRN, May 5, 2020

Detroit, MI



Figure 2A - Sample Location Map



Field St. and E. Grand Blvd.

Detroit, MI

Client: Field Street III LDHA LLC

ASTI Project I-11284, JRN, May 5, 2020

Figure 2B - Sample Location Map

TABLES

- 1 Summary of Soil Sample Analytical Results

Table 1 Summary of Soil Sample Analytical Results
 Field Street & Grand Boulevard, Detroit, MI
 ASTI File No. 1-11284

Parameters (µg/kg)	Statewide Default Background Levels*	Residential Drinking Water Protection Criteria*	Groundwater Surface Water Interface Protection Criteria*	Residential Draft Vapor Intrusion Tier 3A Site-Specific Volatilization to Indoor Air Criteria**	Residential Finite Source Volatile Soil Inhalation for 5 Meter Source Thickness	Residential Particulate Soil Inhalation Criteria*	Residential Direct Contact Criteria*	SB-1 (7-8') µg/kg	SB-2 (1-2') µg/kg	Dup1-S SB-2 (1-2') µg/kg	SB-3 (4.5-5.5') µg/kg	SB-4 (1-2') µg/kg	SB-5 (1-2') µg/kg	SB-6 (1.5-2.5') µg/kg	SB-7 (1-2') µg/kg	SB-8 (1-2') µg/kg	SB-9 (2-3') µg/kg	SB-10 (1-2') µg/kg	SB-11 (3-3.5') µg/kg	SB-12 (1-2') µg/kg
Metals																				
Arsenic	5,800	4,600	4,600	NA	NLV	720,000	7,600	8,000**	7,900	7,800	3,500	4,800	5,700	3,700	6,500	8,600	9,700	6,300	5,200	5,200
Barium (B)	75,000	1,300,000	(G)	NA	NLV	330,000,000	37,000,000	66,000	160,000	120,000	93,000	61,000	870,000	58,000	61,000	73,000	250,000	15,000	94,000	120,000
Cadmium	1,200	6,000	(G,X)	NA	NLV	1,700,000	550,000	180	370	280	350	340	1,100	220	260	250	750	97	260	420
Chromium, Total	18,000 (total)	30,000	3,300	NA	NLV	260,000	2,500,000	19,000**	19,000	19,000	8,900	9,500	17,000	9,400	14,000	21,000	18,000	5,200	12,000	10,000
Lead	21,000	700,000	(G,X)	NA	NLV	100,000,000	400,000	15,000	90,000	56,000	300,000	100,000	710,000	100,000	77,000	57,000	780,000	11,000	300,000	110,000
Lead, Coarse Fraction	21,000	700,000	(G,X)	NA	NLV	100,000,000	400,000	~	96,600	~	295,000	221,000	840,000	108,000	101,000	~	1,110,000	~	366,000	140,000
Lead, Fine Fraction	21,000	700,000	(G,X)	NA	NLV	100,000,000	400,000	~	282,000	~	302,000	113,000	1,020,000	125,000	176,000	~	2,750,000	~	249,000	103,000
Lead, Total (Calculated)	21,000	700,000	(G,X)	NA	NLV	100,000,000	400,000	~	104,000	~	296,000	217,000	868,000	109,000	102,000	~	1,180,000	~	352,000	139,000
Mercury, Total	130	1,700	50 (M); 1.2	0.027	52,000	20,000,000	160,000	<50	53	78	120	68	340	100	<50	<50	250	<50	130	170
Selenium (B)	410	4,000	400	NA	NLV	130,000,000	2,600,000	310	260	320	210	270	550	220	<200	250	770	<200	280	210
Silver (B)	1,000	4,500	100 (M); 27	NA	NLV	6,700,000	2,500,000	<100	<100	<100	<100	<100	130	<100	<100	<100	<100	<100	<100	<100
PNAs																				
Acenaphthene	NA	300,000	8,700	20,000	81,000,000	14,000,000,000	41,000,000	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Acenaphthylene	NA	5,900	ID	NA	2,200,000	2,300,000,000	1,600,000	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Anthracene	NA	41,000	ID	NA	1,400,000,000	67,000,000,000	230,000,000	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Benzo(a)anthracene	NA	NLL	NLL	NA	NLV	ID	20,000	<330	<330	<330	<330	360	<330	<330	<330	<330	950	<330	<330	1,600
Benzo(a)pyrene	NA	NLL	NLL	NA	NLV	1,500,000	2,000	<330	<330	<330	<330	380	<330	<330	<330	<330	820	<330	<330	1,200
Benzo(b)fluoranthene	NA	NLL	NLL	NA	ID	ID	20,000	<330	<330	<330	<330	570	<330	<330	<330	<330	1,300	<330	<330	2,100
Benzo(g,h,i)perylene	NA	NLL	NLL	NA	NLV	800,000,000	2,500,000	<330	<330	<330	<330	<330	<330	<330	<330	<330	490	<330	<330	1,100
Benzo(k)fluoranthene	NA	NLL	NLL	NA	NLV	ID	200,000	<330	<330	<330	<330	<330	<330	<330	<330	<330	440	<330	<330	600
Chrysene	NA	NLL	NLL	NA	ID	ID	2,000,000	<330	<330	<330	<330	<330	<330	<330	<330	<330	860	<330	<330	1,300
Dibenzo(a,h)anthracene	NA	NLL	NLL	NA	NLV	ID	2,000	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Fluoranthene	NA	730,000	5,500	NA	740,000,000	9,300,000,000	46,000,000	<330	430	410	<330	770	560	<330	400	<330	1,600	<330	<330	3,500
Indeno(1,2,3-cd)pyrene	NA	NLL	NLL	NA	NLV	ID	20,000	<330	<330	<330	<330	<330	<330	<330	<330	<330	570	<330	<330	1,100
2-Methylnaphthalene	NA	57,000	4,200	1,700	1,500,000	670,000,000	8,100,000	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Naphthalene	NA	35,000	730	67	300,000	200,000,000	16,000,000	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Phenanthrene	NA	56,000	2,100	1,700	160,000	6,700,000	1,600,000	<330	<330	350	<330	400	390	<330	<330	<330	1,000	<330	<330	1,000
Pyrene	NA	480,000	ID	NA	650,000,000	6,700,000,000	29,000,000	<330	380	380	<330	660	490	<330	330	<330	1,500	<330	<330	2,700
Remaining PNAs	CS	CS	CS	CS	CS	CS	CS	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
VOCs																				
1,2-Dichlorobenzene	NA	14,000	280	1,500	39,000,000	100,000,000,000	19,000,000 (C)	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Naphthalene	NA	35,000	730	67	300,000	200,000,000	16,000,000	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Trichloroethylene	NA	100	4,000 (X)	0.33	25,000	130,000,000	110,000 (DD)	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Remaining VOCs	CS	CS	CS	CS	CS	CS	CS	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

*Per R299.46, June 25, 2018

** - Draft Site-Specific Residential Tier 3A Volatilization To Indoor Air Criteria obtained from VIAC Calculator.

Actual site-specific criteria will need to be obtained from DEQ

~ Parameter not tested for at his location.

ID-Inadequate data to develop criterion.

NA-Not available.

NLL-Hazardous substance is not likely to leach under most soil conditions.

NLV-Hazardous substance is not likely to volatilize under most conditions.

C-Value presented is a screening level based on the chemical-specific generic soil saturation concentration (Csat)

D-Calculated criterion exceeds 100%, hence it is reduced to 100% or 1.0e+9 ppb.

G-Groundwater Surface Water Interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water.

M-Calculated criterion is below the analytical target detection limit, therefore, the criteria defaults to the target detection limit.

X-The Groundwater Surface Water Interface (GSI) criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source.

DD-Hazardous substance causes developmental effects.

CS- Compound specific

<RL- Below reporting limit

Italicized analytical results exceeded one or more GRCC but the sample was collected in native material and the results were below the regional background level for that media

Table 1 Summary of Soil Sample Analytical Results
 Field Street & Grand Boulevard, Detroit, MI
 ASTI File No. 1-11284

Parameters (µg/kg)	Statewide Default Background Levels*	Residential Drinking Water Protection Criteria*	Groundwater Surface Water Interface Protection Criteria*	Residential Draft Vapor Intrusion Tier 3A Site-Specific Volatilization to Indoor Air Criteria**	Residential Finite Source Volatile Soil Inhalation for 5 Meter Source Thickness	Residential Particulate Soil Inhalation Criteria*	Residential Direct Contact Criteria*	SB-13 (1.5-2.5') 4/6/2020 µg/kg	SB-14 (4-5') 4/6/2020 µg/kg	Dup2-S SB-14 (4-5') 4/6/2020 µg/kg	SB-15 (3-4') 4/6/2020 µg/kg	SB-16 (7-8') 4/6/2020 µg/kg	SB-17 (1-2') 4/6/2020 µg/kg	SB-18 (1.5-2.5') 4/6/2020 µg/kg	SB-19 (1-2') 4/6/2020 µg/kg	SB-20 (2-3') 4/6/2020 µg/kg	SB-21 (3-4') 4/6/2020 µg/kg	Meth Blank 4/6/2020 µg/kg	SB-22 (9-10') 4/8/2020 µg/kg	SB-23 (2-3') 4/8/2020 µg/kg
Metals																				
Arsenic	5,800	4,600	4,600	NA	NLV	720,000	7,600	5,400	2,600	2,600	5,400	6,000	6,800	6,800	6,200	8,500	12,000	~	7,600**	9,100
Barium (B)	75,000	1,300,000	(G)	NA	NLV	330,000,000	37,000,000	97,000	39,000	31,000	54,000	78,000	65,000	70,000	69,000	81,000	64,000	~	53,000	140,000
Cadmium	1,200	6,000	(G,X)	NA	NLV	1,700,000	550,000	310	150	97	300	400	210	390	380	1,900	410	~	190	440
Chromium, Total	18,000 (total)	30,000	3,300	NA	NLV	260,000	2,500,000	15,000	6,200	6,000	14,000	15,000	17,000	14,000	12,000	13,000	14,000	~	18,000	15,000
Lead	21,000	700,000	(G,X)	NA	NLV	100,000,000	400,000	77,000	25,000	16,000	55,000	80,000	28,000	110,000	120,000	350,000	73,000	~	8,400	89,000
Lead, Coarse Fraction	21,000	700,000	(G,X)	NA	NLV	100,000,000	400,000	117,000	~	~	~	76,200	~	176,000	134,000	317,000	~	~	~	289,000
Lead, Fine Fraction	21,000	700,000	(G,X)	NA	NLV	100,000,000	400,000	292,000	~	~	~	145,000	~	263,000	93,100	482,000	~	~	~	884,000
Lead, Total (Calculated)	21,000	700,000	(G,X)	NA	NLV	100,000,000	400,000	127,000	~	~	~	79,200	~	182,000	132,000	322,000	~	~	~	307,000
Mercury, Total	130	1,700	50 (M); 1.2	0.027	52,000	20,000,000	160,000	<50	54	51	<50	120	130	88	110	120	200	~	<50	120
Selenium (B)	410	4,000	400	NA	NLV	130,000,000	2,600,000	210	<200	<200	<200	390	<200	520	240	500	950	~	<200	220
Silver (B)	1,000	4,500	100 (M); 27	NA	NLV	6,700,000	2,500,000	<100	<100	<100	<100	<100	<100	<100	<100	190	<100	~	<100	<100
PNAs																				
Acenaphthene	NA	300,000	8,700	20,000	81,000,000	14,000,000,000	41,000,000	<330	<330	<330	<330	<330	<330	<330	<330	<330	360	~	<330	<330
Acenaphthylene	NA	5,900	ID	NA	2,200,000	2,300,000,000	1,600,000	<330	<330	<330	<330	<330	<330	<330	<330	<330	350	~	<330	<330
Anthracene	NA	41,000	ID	NA	1,400,000,000	67,000,000,000	230,000,000	<330	<330	<330	<330	<330	<330	<330	<330	<330	790	~	<330	<330
Benzo(a)anthracene	NA	NLL	NLL	NA	NLV	ID	20,000	470	<330	<330	450	<330	370	350	560	700	2,500	~	<330	570
Benzo(a)pyrene	NA	NLL	NLL	NA	NLV	1,500,000	2,000	350	<330	<330	400	<330	<330	<330	460	480	2,600	~	<330	360
Benzo(b)fluoranthene	NA	NLL	NLL	NA	ID	ID	20,000	510	360	<330	560	<330	370	400	660	730	4,000	~	<330	540
Benzo(g,h,i)perylene	NA	NLL	NLL	NA	NLV	800,000,000	2,500,000	<330	<330	<330	<330	<330	<330	<330	<330	430	2,000	~	<330	<330
Benzo(k)fluoranthene	NA	NLL	NLL	NA	NLV	ID	200,000	<330	<330	<330	<330	<330	<330	<330	<330	<330	1,100	~	<330	<330
Chrysene	NA	NLL	NLL	NA	ID	ID	2,000,000	360	<330	<330	390	<330	<330	<330	490	490	2,300	~	<330	400
Dibenzo(a,h)anthracene	NA	NLL	NLL	NA	NLV	ID	2,000	<330	<330	<330	<330	<330	<330	<330	<330	<330	510	~	<330	<330
Fluoranthene	NA	730,000	5,500	NA	740,000,000	9,300,000,000	46,000,000	640	620	<330	860	<330	500	470	1,100	960	4,000	~	<330	810
Indeno(1,2,3-cd)pyrene	NA	NLL	NLL	NA	NLV	ID	20,000	<330	<330	<330	<330	<330	<330	<330	<330	440	2,200	~	<330	<330
2-Methylnaphthalene	NA	57,000	4,200	1,700	1,500,000	670,000,000	8,100,000	<330	<330	<330	<330	<330	<330	<330	<330	<330	540	~	<330	<330
Naphthalene	NA	35,000	730	67	300,000	200,000,000	16,000,000	<330	<330	<330	<330	<330	<330	<330	<330	<330	1,600	~	<330	<330
Phenanthrene	NA	56,000	2,100	1,700	160,000	6,700,000	1,600,000	<330	<330	<330	540	<330	<330	<330	660	500	2,000	~	<330	850
Pyrene	NA	480,000	ID	NA	650,000,000	6,700,000,000	29,000,000	590	560	<330	840	<330	440	440	1,200	860	3,400	~	<330	820
Remaining PNAs	CS	CS	CS	CS	CS	CS	CS	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	~	<RL	<RL
VOCs																				
1,2-Dichlorobenzene	NA	14,000	280	1,500	39,000,000	100,000,000,000	19,000,000 (C)	<100	<100	<100	<100	<100	<100	<100	<100	<100	260	<100	<100	<100
Naphthalene	NA	35,000	730	67	300,000	200,000,000	16,000,000	<330	<330	<330	<330	<330	<330	<330	<330	<330	720	<330	<330	<330
Trichloroethylene	NA	100	4,000 (X)	0.33	25,000	130,000,000	110,000 (DD)	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Remaining VOCs	CS	CS	CS	CS	CS	CS	CS	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

*Per R299.46, June 25, 2018

** - Draft Site-Specific Residential Tier 3A Volatilization To Indoor Air Criteria obtained from VIAC Calculator.

Actual site-specific criteria will need to be obtained from DEQ

~ Parameter not tested for at his location.

ID-Inadequate data to develop criterion.

NA-Not available.

NLL-Hazardous substance is not likely to leach under most soil conditions.

NLV-Hazardous substance is not likely to volatilize under most conditions.

C-Value presented is a screening level based on the chemical-specific generic soil saturation concentration (Csat)

D-Calculated criterion exceeds 100%, hence it is reduced to 100% or 1.0e+9 ppb.

G-Groundwater Surface Water Interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water.

M-Calculated criterion is below the analytical target detection limit, therefore, the criteria defaults to the target detection limit.

X-The Groundwater Surface Water Interface (GSI) criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source.

DD-Hazardous substance causes developmental effects.

CS- Compound specific

<RL- Below reporting limit

Italicized analytical results exceeded one or more GRCC but the sample was collected in native material and the results were below the regional background level for that media

Table 1 Summary of Soil Sample Analytical Results
 Field Street & Grand Boulevard, Detroit, MI
 ASTI File No. 1-11284

Parameters (µg/kg)	Statewide Default Background Levels*	Residential Drinking Water Protection Criteria*	Groundwater Surface Water Interface Protection Criteria*	Residential Draft Vapor Intrusion Tier 3A Site-Specific Volatilization to Indoor Air Criteria**	Residential Finite Source Volatile Soil Inhalation for 5 Meter Source Thickness	Residential Particulate Soil Inhalation Criteria*	Residential Direct Contact Criteria*	Dup3-S SB-23 (2-3) µg/kg	SB-24 (1-2') 4/8/2020 µg/kg	SB-25 (1-2') 4/8/2020 µg/kg	SB-26 (3-4') 4/8/2020 µg/kg	SB-27 (0.5-1') 4/8/2020 µg/kg	SB-28 (11-12') 4/8/2020 µg/kg	SB-29 (1-2') 4/8/2020 µg/kg	SB-30 (1-2') 4/8/2020 µg/kg	Meth Blank 4/8/2020 µg/kg
Metals																
Arsenic	5,800	4,600	4,600	NA	NLV	720,000	7,600	6,100	7,600	7,300	7,500	4,900	6,400**	8,400	18,000	~
Barium (B)	75,000	1,300,000	(G)	NA	NLV	330,000,000	37,000,000	130,000	93,000	73,000	140,000	32,000	61,000	150,000	85,000	~
Cadmium	1,200	6,000	(G,X)	NA	NLV	1,700,000	550,000	530	330	290	760	200	170	1,100	400	~
Chromium, Total	18,000 (total)	30,000	3,300	NA	NLV	260,000	2,500,000	11,000	20,000	15,000	13,000	9,000	18,000	34,000	18,000	~
Lead	21,000	700,000	(G,X)	NA	NLV	100,000,000	400,000	150,000	140,000	85,000	370,000	45,000	8,400	270,000	110,000	~
Lead, Coarse Fraction	21,000	700,000	(G,X)	NA	NLV	100,000,000	400,000	~	203,000	101,000	360,000	~	~	336,000	129,000	~
Lead, Fine Fraction	21,000	700,000	(G,X)	NA	NLV	100,000,000	400,000	~	254,000	102,000	434,000	~	~	451,000	179,000	~
Lead, Total (Calculated)	21,000	700,000	(G,X)	NA	NLV	100,000,000	400,000	~	204,000	101,000	367,000	~	~	339,000	131,000	~
Mercury, Total	130	1,700	50 (M); 1.2	0.027	52,000	20,000,000	160,000	71	71	87	260	58	<50	290	220	~
Selenium (B)	410	4,000	400	NA	NLV	130,000,000	2,600,000	270	260	380	750	<200	<200	560	330	~
Silver (B)	1,000	4,500	100 (M); 27	NA	NLV	6,700,000	2,500,000	<100	<100	<100	180	<100	<100	160	<100	~
PNAs																
Acenaphthene	NA	300,000	8,700	20,000	81,000,000	14,000,000,000	41,000,000	<330	<330	<330	<330	<330	<330	<330	<330	~
Acenaphthylene	NA	5,900	ID	NA	2,200,000	2,300,000,000	1,600,000	<330	<330	<330	<330	<330	<330	<330	<330	~
Anthracene	NA	41,000	ID	NA	1,400,000,000	67,000,000,000	230,000,000	<330	<330	<330	<330	<330	<330	540	<330	~
Benzo(a)anthracene	NA	NLL	NLL	NA	NLV	ID	20,000	1,200	<330	<330	<330	<330	<330	1,800	<330	~
Benzo(a)pyrene	NA	NLL	NLL	NA	NLV	1,500,000	2,000	1,000	<330	<330	<330	<330	<330	1,700	<330	~
Benzo(b)fluoranthene	NA	NLL	NLL	NA	ID	ID	20,000	1,400	<330	<330	390	<330	<330	2,500	<330	~
Benzo(g,h,i)perylene	NA	NLL	NLL	NA	NLV	800,000,000	2,500,000	780	<330	<330	<330	<330	<330	1,100	<330	~
Benzo(k)fluoranthene	NA	NLL	NLL	NA	NLV	ID	200,000	490	<330	<330	<330	<330	<330	900	<330	~
Chrysene	NA	NLL	NLL	NA	ID	ID	2,000,000	930	<330	<330	<330	<330	<330	1,600	<330	~
Dibenzo(a,h)anthracene	NA	NLL	NLL	NA	NLV	ID	2,000	<330	<330	<330	<330	<330	<330	<330	<330	~
Fluoranthene	NA	730,000	5,500	NA	740,000,000	9,300,000,000	46,000,000	1,800	390	380	480	<330	<330	3,700	<330	~
Indeno(1,2,3-cd)pyrene	NA	NLL	NLL	NA	NLV	ID	20,000	810	<330	<330	<330	<330	<330	1,300	<330	~
2-Methylnaphthalene	NA	57,000	4,200	1,700	1,500,000	670,000,000	8,100,000	<330	<330	<330	<330	<330	<330	<330	<330	~
Naphthalene	NA	35,000	730	67	300,000	200,000,000	16,000,000	<330	<330	<330	<330	<330	<330	<330	<330	~
Phenanthrene	NA	56,000	2,100	1,700	160,000	6,700,000	1,600,000	920	<330	<330	<330	<330	<330	2,200	<330	~
Pyrene	NA	480,000	ID	NA	650,000,000	6,700,000,000	29,000,000	1,800	360	340	440	<330	<330	3,300	<330	~
Remaining PNAs	CS	CS	CS	CS	CS	CS	CS	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	~
VOCs																
1,2-Dichlorobenzene	NA	14,000	280	1,500	39,000,000	100,000,000,000	19,000,000 (C)	<100	<100	<100	<100	<100	<100	<100	<100	<100
Naphthalene	NA	35,000	730	67	300,000	200,000,000	16,000,000	<330	<330	<330	<330	<330	<330	<330	<330	<330
Trichloroethylene	NA	100	4,000 (X)	0.33	25,000	130,000,000	110,000 (DD)	<50	<50	<50	<50	<50	<50	61	<50	<50
Remaining VOCs	CS	CS	CS	CS	CS	CS	CS	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL

*Per R299.46, June 25, 2018

** - Draft Site-Specific Residential Tier 3A Volatilization To Indoor Air Criteria obtained from VIAC Calculator.

Actual site-specific criteria will need to be obtained from DEQ

~ Parameter not tested for at his location.

ID-Inadequate data to develop criterion.

NA-Not available.

NLL-Hazardous substance is not likely to leach under most soil conditions.

NLV-Hazardous substance is not likely to volatilize under most conditions.

C-Value presented is a screening level based on the chemical-specific generic soil saturation concentration (Csat)

D-Calculated criterion exceeds 100%, hence it is reduced to 100% or 1.0e+9 ppb.

G-Groundwater Surface Water Interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water.

M-Calculated criterion is below the analytical target detection limit, therefore, the criteria defaults to the target detection limit.

X-The Groundwater Surface Water Interface (GSI) criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source.

DD-Hazardous substance causes developmental effects.

CS- Compound specific

<RL- Below reporting limit

Italicized analytical results exceeded one or more GRCC but the sample was collected in native material and the results were below the regional background level for that media

ATTACHMENTS

Attachment A

Geophysical Survey Report



Geophysical Imaging, Inc.
3765 Timber Valley Dr
Maumee, OH 43537
Phone/fax: (419) 868-2902

April 9, 2020

GII Project No. 20-891

Mr. Brian Kuberski
Project Manager
ASTI Environmental
10448 Citation Dr., Suite 100
Brighton, Michigan 48116

**Geophysical Survey Report
1470 and 1474 Field Street
Detroit, Michigan**

Dear Mr. Kuberski:

This letter report summarizes the results and interpretations of the geophysical survey performed for ASTI Environmental (ASTI) by Geophysical Imaging, Inc. (GII) at the above-referenced site. The purpose of the survey was to detect if abandoned underground storage tanks (USTs) are present at the site.

Project Background

According to ASTI, a UST was historical present at the site. The status of potential UST is unknown.

Field Activities and Data Processing

On April 6, 2020, a combined electromagnetic induction (EM) and ground-penetrating radar (GPR) survey was conducted by GII at the site in the area designated by ASTI. Figure 1 depicts the approximate area surveyed and the general site features. The EM survey was performed in “continuous survey” mode along 2.5-foot spaced transects. GII used a GSSI EMP-400 multi-frequency EM profiler with integrated GPS. Two EM exploration frequencies (9,000 Hz and 12,000 Hz) were selected for the site. Prior to the EM survey, field, operator, and zero in-phase calibrations were performed at the site. In “continuous survey” mode, data are acquired at a fixed time interval while the operator walks along a survey line at a steady pace. Both in-phase (metal sensitive) and quadrature (terrain conductivity) measurements were acquired during the EM survey. These measurements were automatically stored in a wireless data logger, and later



downloaded to a computer for subsequent processing. Two software packages were utilized to define suspect areas, MagMap (supplied by E.G. & G. Geometrics) and SURFER (developed by Golden Software). Selected EM measurement contour maps are presented on Figures 2 and 3.

The GPR survey was performed along 5-foot spaced profiles. GII used a GSSI SIR-3000 GPR system with a 400-megahertz (MHz) dipole antenna mounted on a wheeled cart to scan the survey area. Several test scans were completed to observe the overall GPR responses to setup survey parameters prior to the GPR survey. A survey wheel was used to acquire distance-based data at the density of 18 scans per foot. Anomalous reflective objects/structures were noted and marked on the ground surface during the data acquisition. Additional linescans were performed to better understand anomalous targets. The GPR data were automatically stored in a data logger, and later downloaded to a computer for subsequent processing. The data processing consisted of Time-Zero Adjustment (time zero of the vertical scale aligned with the surface reflection) and Background Removal (horizontal banding) to the GPR scans. Targeted GPR linescan is presented on Figure 4.

Results and Interpretations

The EM survey identified a strong EM in-phase ('metal') anomaly located at the western portion of the site. One targeted GPR linescan (Linescan A) was performed in the anomaly area. One hyperbolic reflection response was detected on GPR scans. The shape, strength and ring-down of these reflections are similar to the GPR response that is often observed over cylindrical-shaped steel objects such as USTs, large diameter metal pipes or cylindrical-shaped metal containers. Based on the EM and GPR data, this anomaly area was interpreted to represent possible a UST. Other strong EM 'metal' anomalies identified during the survey were most likely associated with the known aboveground interference, such as parked vehicles, condenser, and building, etc.

Survey Methods and Limitations

The EM operates by driving a transmitter coil with an AC current at audio frequencies to generate a sinusoidal time-varying magnetic field. A receiver coil is positioned on or near the surface of the earth some distance away from the transmitter coil. The transmitted time-varying magnetic field generated by the transmitter coil induces secondary currents to flow in the subsurface, which in turn generate a secondary (induced) magnetic field. Both the induced secondary field, along with the primary field, is detected and recorded at the receiver coil.

The EM instruments contain two sets of coils that are located within opposite sides of the tool. One set of coil is used to transmit a primary magnetic field, which generates electrical current in the ground. The created current then generates a secondary magnetic field, which is sensed by the coils in the receiver end of the instrument. Data



is then collected on a control unit indicating the conductivity of the earth. The magnitude of the secondary field is broken into two orthogonal components. The two components of the secondary magnetic field are in-phase (real component) and the quadrature or out-of-phase (imaginary component). For instruments operating within the Low Induction Number (LIN) approximation, the magnitude of the quadrature component of the secondary field is linearly proportional to the apparent conductivity. The in-phase measurement is most sensitive to buried metallic objects and can be used to locate buried steel reinforced structures, UST, large utility pipes, and other metallic targets. In the absence of a highly conductive material (e.g. metallic targets) in the subsurface, the magnitude of the in-phase component is dependent on the magnetic susceptibility of the subsurface. The EMP-400 allows multiple frequency measurements at each survey station. The depth of exploration depends on the operating frequencies, target size and shape, and host-target conductivity. Site conditions that can limit, even preclude EM data interpretation include: urban or developed areas, thunderstorms and nearby metallic objects at or above the ground surface such as parked vehicles near the survey stations, rebar concrete, metal siding, overhead power lines, metal fence/guard rail, and manhole covers, etc. Areas of a site that may be difficult or impossible to survey include: steep slopes, standing water areas, overgrown vegetation areas, and obstructed areas.

GPR operates by transmitting pulses of ultra high frequency radio waves (microwave electromagnetic energy) down into the ground through a transducer or antenna. When the transmitted signal enters the ground, it contacts objects or subsurface strata with different electrical conductivities and dielectric constants. Part of the ground penetrating radar waves reflect off of the object or interface; while the rest of the waves pass through to the next interface. The reflected signals return to the antenna, pass through the antenna, and are received by the digital control unit. The control unit registers the reflections against two-way travel time in nanoseconds (ns) and then amplifies the signals. The output signal voltage peaks are plotted on the GPR profile as different color bands by the digital control unit.

GPR waves with 400 MHz frequency typically can reach depths up to 12 feet below ground surface (bgs) in low conductivity materials such as dry sand or granite. Clays, shale, and other high conductivity materials or materials having high moisture, may attenuate or absorb GPR signals, greatly decreasing the depth of penetration to 3 feet bgs or less. Other site conditions that can limit even preclude GPR data acquisition and interpretation include: surface obstructions, uneven ground surface, standing water, cellular tower, rebar concrete, small or shallow buried objects, and over-grown vegetation, etc.



Conclusions

This geophysical survey has identified one anomaly, which may represent a buried UST. The geophysical results presented herein are interpreted. No warranty, certification, or statement of fact, either expressed or implied, regarding actual subsurface conditions within the surveyed area(s) is contained herein. If uncertainties exist regarding the presence of geophysical anomalies, test pit excavations should be conducted to explore the actual subsurface conditions. No interpretation of subsurface conditions can be made for areas not surveyed or paved with rebar concrete. Please note that the survey data reflect site conditions on the day of the field survey.

GII greatly appreciates this opportunity to provide ASTI with our geophysical survey service. If you have any questions, please contact me at (419) 868-2902.

Sincerely,

Geophysical Imaging, Inc.

A handwritten signature in blue ink, appearing to read "Ming He", is positioned above the printed name.

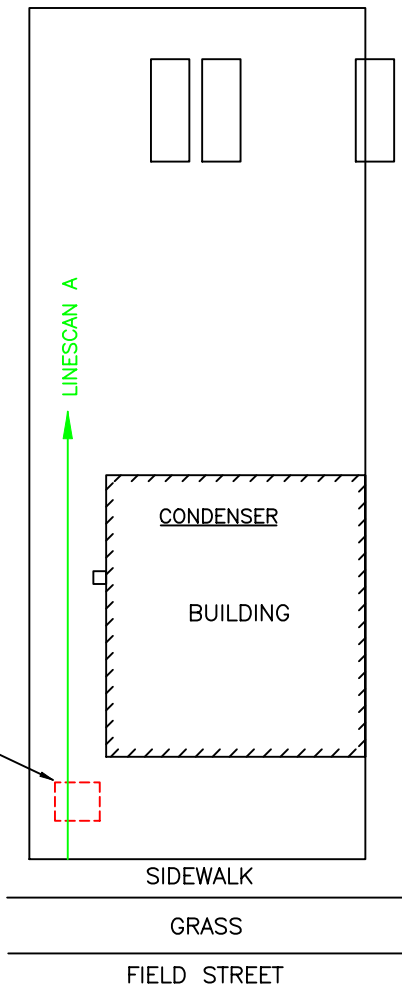
Ming He
President/Geophysicist

Attachments
Figures 1 – 4


F:\GII\PROJECTS\20-891 ASTI DETROIT MI\20-891 ASTI DETROIT MI REPORT.DOC



Hyperbolic reflection response
over strong EM anomaly area,
interpreted possible a UST.



LEGEND:

 VEHICLE

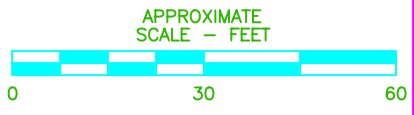


FIGURE 1
 SURVEY DIAGRAM WITH
 GEOPHYSICAL INTERPRETATIONS
 1470 & 1474 FIELD STREET
 DETROIT, MICHIGAN

Client
 ASTI ENVIRONMENTAL
 BRIGHTON, MICHIGAN

GEOPHYSICAL IMAGING, INC.
 3765 TIMBER VALLEY DR
 MAUMEE, OH 43537

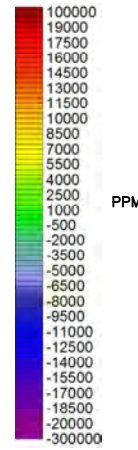
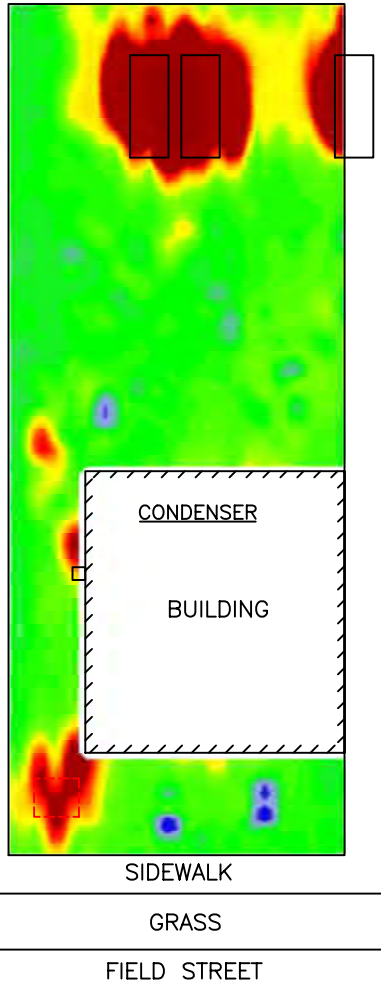
DRAWN MH

CHECKED


DRAWING NAME

19-891Fig1





LEGEND:

 VEHICLE

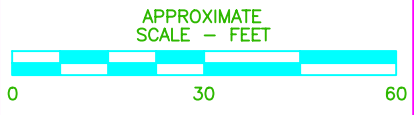


FIGURE 2
EM IN-PHASE (METAL SENSITIVE)
CONTOUR MAP - 9,000 Hz
 1470 & 1474 FIELD STREET
 DETROIT, MICHIGAN

Client
ASTI ENVIRONMENTAL
BRIGHTON, MICHIGAN

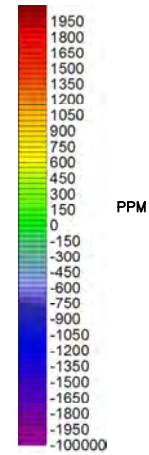
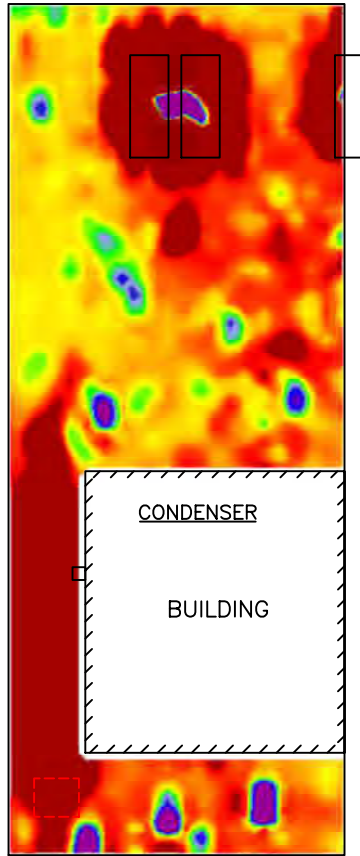
GEOPHYSICAL IMAGING, INC.
 3765 TIMBER VALLEY DR
 MAUMEE, OH 43537

DRAWN MH

CHECKED

DRAWING NAME
19-891Fig2





LEGEND:

 VEHICLE

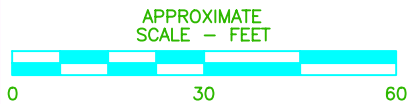


FIGURE 3
EM QUADRATURE (TERRAIN CONDUCTIVITY)
CONTOUR MAP - 9,000 Hz
 1470 & 1474 FIELD STREET
 DETROIT, MICHIGAN

Client
ASTI ENVIRONMENTAL
BRIGHTON, MICHIGAN

GEOPHYSICAL IMAGING, INC.
 3765 TIMBER VALLEY DR
 MAUMEE, OH 43537

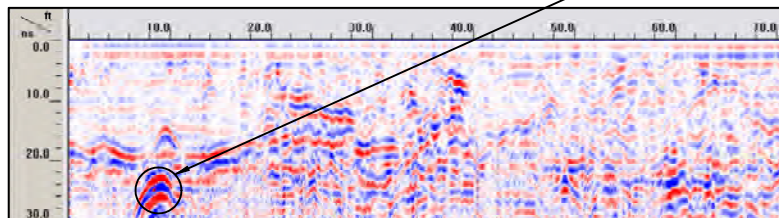
DRAWN MH


CHECKED

DRAWING NAME
 19-891Fig3



LINESCAN A: hyperbolic reflection response over strong EM anomaly area, interpreted possible a UST.



<p style="text-align: center;">FIGURE 4 TARGETED GPR LINESCAN LINESCAN A 1470 & 1474 FIELD STREET DETROIT, MICHIGAN</p>	<p>GEOPHYSICAL IMAGING, INC. 3765 TIMBER VALLEY DR MAUMEE, OH 43537</p>	
<p style="text-align: center;">Client ASTI ENVIRONMENTAL BRIGHTON, MICHIGAN</p>	<p>DRAWN MH</p>	
	<p>CHECKED DRAWING NAME 19-891Fig4</p>	

Attachment B

Soil Boring Logs

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1016 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-1**
 Total Depth: 12' bgs
 Date Completed: 4/6/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	4"	Asphalt	0.0	
4"	1.5'	SAND, fine to very coarse grained, trace gravel, brown, moist, loose (sand)	0.0	
1.5'	8'	SILTY CLAY, trace to some very fine to fine grained sand, trace medium to very coarse grained sand and gravel, occasional silt seams, brown, medium stiff (silty clay)	0.0	Soil at 7-8'
8'	12'	SILTY CLAY, trace to some very fine to fine grained sand, trace medium to very coarse grained sand and gravel, brown, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1070 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-2**
 Total Depth: 8' bgs
 Date Completed: 4/6/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	10"	Topsoil, very fine to medium grained sand, trace to some silt and organics, dark brown, moist, loose (fill)	0.0	
10"	7'	SILTY fine to very coarse grained SAND, some clay, trace brick, glass, concrete, and wood, occasional sand seams, brown, moist, medium dense (fill)	0.0	Soil at 1-2'
7'	8'	SILTY CLAY, trace very fine to medium grained sand and gravel, brown, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1074 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-3**
 Total Depth: 8' bgs
 Date Completed: 4/6/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	6"	Topsoil, silty very fine to medium grained sand, trace organics, brown to dark brown, moist, loose (fill)	0.0	
6"	6'	SAND, very fine to medium grained, trace silt, brick at 5.5' bgs, brown, moist, loose (fill)	0.0	Soil at 4.5-5.5'
6'	8'	SILTY CLAY, trace very fine to coarse grained sand and gravel, grey, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1090 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-4**
 Total Depth: 8' bgs
 Date Completed: 4/6/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): 5' bgs

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	6"	Topsoil, silty very fine to medium grained sand, trace gravel and brick, dark brown, moist, medium dense (fill)	0.0	
6"	2'	SILTY very fine to medium grained SAND, trace gravel, brick, and wood, brown, moist, medium dense (fill)	0.0	Soil at 1-2'
2'	6'	SAND, very fine to fine grained, trace medium grained sand and silt, brown, moist to wet at 5' bgs, loose (fill)	0.0	
6'	8'	SILTY CLAY, trace very fine to coarse grained sand and gravel, grey, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1100 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-5**
 Total Depth: 8' bgs
 Date Completed: 4/6/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): 4.5' bgs

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	10"	Topsoil, very fine to fine grained sand, trace silt and organics, dark brown, moist, loose (fill)	0.0	
10"	3'	SAND, fine to medium grained, trace silt, brick, and asphalt, brown to dark brown, moist, loose (fill)	0.0	Soil at 1-2'
3'	5.5'	SAND, very fine to fine grained, trace silt, brown, moist to wet at 4.5' bgs, loose (fill)	0.0	
5.5'	8'	SILTY CLAY, trace very fine to very coarse grained sand and gravel, grey, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1104 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-6**
 Total Depth: 8' bgs
 Date Completed: 4/6/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	6"	Topsoil, very fine to medium grained sand, trace silt, organics, brick, and asphalt, dark brown, moist, loose (fill)	0.0	
6"	2.5'	SAND, very fine to medium grained, trace to some silt, trace brick, dark brown, moist, loose (fill)	0.0	Soil at 1.5-2.5'
2.5'	6.5'	SAND, very fine to medium grained, trace medium to coarse grained sand, brown, moist, loose (fill)	0.0	
6.5'	8'	SILTY CLAY, trace very fine to very coarse grained sand and gravel, grey, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1108 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-7**
 Total Depth: 8' bgs
 Date Completed: 4/6/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	6"	Topsoil, very fine to medium grained sand, trace silt and organics, dark brown, moist, loose (fill)	0.0	
6"	3.5'	SAND, very fine to medium grained, some silt, trace roots and concrete, brown, moist, loose (fill)	0.0	Soil at 1-2'
3.5'	7.5'	SAND, very fine to medium grained, trace silt, large piece of concrete and wood at 7.5' bgs, brown, moist, loose (fill)	0.0	
7.5'	8'	SILTY CLAY, trace very fine to very coarse grained sand, grey, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1103 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efras

Boring Data
 Boring ID: **SB-8**
 Total Depth: 8' bgs
 Date Completed: 4/6/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	6"	Topsoil, silty very fine to fine grained sand, trace organics, dark brown, moist, medium dense (fill)	0.0	
6"	2'	SAND, very fine to medium grained, trace asphalt, concrete, and brick, brown, moist, loose (fill)	0.0	Soil at 1-2'
2'	8'	SILTY CLAY, trace very fine to very coarse grained sand, dark brown with grey mottling, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1095 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-9**
 Total Depth: 8' bgs
 Date Completed: 4/6/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	6"	Topsoil, silty very fine to medium grained sand, trace organics, dark brown, moist, loose (fill)	0.0	
6"	4'	SILTY fine to very coarse grained SAND, some clay, trace brick, concrete, and asphalt, occasional sand seams, varigated brown, orange, and black, medium dense (fill)	0.0	Soil at 2-3'
4'	5.5'	SAND, very fine to fine grained, trace medium grained sand and silt, brown, moist, medium dense (fill)	0.0	
5.5'	8'	SILTY CLAY, trace very fine to medium grained sand and gravel, brown, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1085 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-10**
 Total Depth: 8' bgs
 Date Completed: 4/6/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	6"	Topsoil, very fine to medium grained sand, trace silt, dark brown, moist, loose (fill)	0.0	
6"	6'	SAND, fine to medium grained, trace very fine grained sand and silt, brown, moist, loose (fill)	0.0	Soil at 1-2'
6'	8'	SILTY CLAY, trace very fine to coarse grained sand and gravel, grey, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1067 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-11**
 Total Depth: 12' bgs
 Date Completed: 4/6/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): 7.5' bgs

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	4"	Topsoil, very fine to medium grained sand, some silt, trace organics, dark brown, moist, loose (fill)	0.0	Soil at 3-3.5'
4"	2.5'	SAND, very fine to coarse grained sand, trace silt, brick, and concrete, brown, moist, loose (fill)	0.0	
2.5'	3'	SAND, medium to coarse grained, black, moist, loose (fill)	0.0	
3'	3.5'	SAND, very fine to coarse grained sand, trace silt, brick, and concrete, brown, moist, loose (fill)	0.0	
3.5'	4'	Concrete and brick (fill)	0.0	
4'	9'	SAND, fine to medium grained, trace coarse grained sand and silt, brown, moist to wet at 7.75' bgs, loose (fill)	0.0	
9'	12'	SILTY CLAY, trace very fine to medium grained sand, trace gravel, grey, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1065 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-12**
 Total Depth: 8' bgs

Date Completed: 4/6/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): 6.5' bgs

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	8"	Topsoil, very fine to medium grained sand, some silt, trace organics, dark brown, moist, medium dense (fill)	0.0	
8"	6'	SAND, fine to medium grained, trace coarse grained sand, brick, concrete, and asphalt, varigated brown, orange, and black (fill)	0.0	Soil at 1-2'
6'	7'	SAND, fine to very coarse grained, trace gravel and concrete, moist to wet at 6.5' bgs, loose (fill)	0.0	
7'	8'	SILTY CLAY, trace vvery fine to coarse grained sand, grey, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1065 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-13**
 Total Depth: 8' bgs
 Date Completed: 4/6/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): 6' bgs

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	6"	Topsoil, silty very fine sand, trace to some organics, dark brown, moist, loose (fill)	0.0	
6"	2.75'	SAND, fine to medium grained, trace silt, brick, and concrete, occasional silty clay seams, brown, moist, medium dense (fill)	0.0	Soil at 1.5-2.5'
2.75'	3.75'	Brick	0.0	
3.75'	6'	SAND, fine to medium grained, trace silt, brick, and concrete, occasional silty clay seams, brown, moist, medium dense (fill)	0.0	
6'	7'	SAND, fine to coarse grained, brown, wet, loose (fill)	0.0	
7'	8'	SILTY CLAY, trace very fine to coarse grained sand, grey, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1047 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-14**
 Total Depth: 8' bgs
 Date Completed: 4/6/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	6"	Topsoil, very fine to fine grained sand, trace silt, dark brown, moist, loose (fill)	0.0	
6"	5'	SAND, very fine to fine grained, trace medium grained sand, silt, brick, and cinders, variegated brown, orange, and black, moist, loose (fill)	0.0	Soil at 4-5'
5'	6'	SAND, very fine to fine grained, orange, moist, loose (fill)	0.0	
6'	8'	SILTY CLAY, trace very fine to very coarse sand, trace gravel, grey, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1045 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-15**
 Total Depth: 8' bgs
 Date Completed: 4/6/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	10"	Topsoil, very fine to fine grained sand, trace silt, organics, and asphalt, dark brown, moist, loose (fill)	0.0	
10"	3'	SAND, fine to medium grained, light brown, moist, loose (fill)	0.0	
3'	7.5'	SAND, very fine to medium grained, trace to some silt, trace brick and organics, brown, moist, medium dense (fill)	0.0	Soil at 3-4'
7.5'	8'	SILTY CLAY, trace very fine to very coarse grained sand and gravel, grey, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Boring Data	
Boring ID:	SB-16
Total Depth:	12' bgs
Date Completed:	4/6/2020

Proj. Name:	Field Street I & II
Proj. Number:	1-11284

Site Address:	1029 Field Street
	Detroit, Michigan

Drilled by:	ERG
Method:	Direct push probe
Geologist:	Jeremy Efros

MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	6"	Topsoil, very fine to fine grained sand, trace silt and organics, dark brown, moist, loose (fill)	0.0	
6"	6.5'	SAND, fine to medium grained, trace very fine to fine grained sand and silt, light brown, moist, loose (fill)	0.0	
6.5'	8'	CLAYEY SILT, some very fine to medium sand, trace brick and asphalt, medium stiff (fill)	0.0	Soil at 7-8'
8'	12'	SILTY CLAY, trace very fine to medium grained sand, grey, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1007 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-17**
 Total Depth: 8' bgs
 Date Completed: 4/6/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	4"	Topsoil, silty very fine to fine grained sand, trace organics, dark brown, moist, medium dense (fill)	0.0	
4"	4'	SANDY CLAY, some silt, trace brick, glass, concrete, slag, and asphalt, occasional silty clay and sand seams, brown, medium stiff (fill)	0.0	Soil at 1-2'
4'	8'	SANDY CLAY, some silt, brown with grey mottling, stiff (clay loam)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1005 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-18**
 Total Depth: 8' bgs
 Date Completed: 4/6/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	10"	SILTY very fine grained SAND, trace organics, dark brown, moist, medium dense (fill)	0.0	
10"	4.5'	SAND, very fine to medium grained, trace to some silt, trace brick, concrete, and asphalt, occasional sand seams, brown to dark brown, moist, medium dense (fill)	0.0	Soil at 1.5-2.5'
4.5'	8'	SILTY CLAY, trace very fine to very coarse grained sand and gravel, brown with grey mottling, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 240 E. Grand Blvd
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-19**
 Total Depth: 8' bgs
 Date Completed: 4/6/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	2"	Topsoil, silty very fine grained sand, trace organics, dark brown, moist, medium dense (fill)	0.0	
2"	4'	SAND, very fine to medium grained, trace wood, asphalt, and concrete, occasional fine grained sand seams, brown to dark brown, moist, medium dense (fill)	0.0	Soil at 1-2'
4'	5'	SAND, fine to medium grained, trace silt, brown, loose (fill)	0.0	
5'	6.5'	SILTY fine to medium grained SAND, trace brick and asphalt, brown to dark brown, moist, medium dense (fill)	0.0	
6.5'	8'	SILTY CLAY, trace very fine to fine grained sand, occasional cobbles, grey with brown mottling, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 244 E. Grand Blvd
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-20**
 Total Depth: 8' bgs
 Date Completed: 4/6/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	8"	Topsoil, very fine to medium grained sand, some silt, trace organics, dark brown, moist, medium dense (fill)	0.0	
8"	4.5'	SAND, fine to medium grained, trace to some clay, trace gravel, brick, asphalt, and wood, varigated brown, orange, and black, medium dense (fill)	0.0	Soil at 2-3'
4.5'	7'	SAND, very fine to medium grained, trace silt, brown, moist, loose (fill)	0.0	
7'	8'	SILTY CLAY, trace fine to very coarse sand and gravel, grey, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 250 E. Grand Blvd
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-21**
 Total Depth: 7.5' bgs
 Date Completed: 4/6/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	8"	Topsoil, very fine to fine grained sand, trace silt and organics, dark brown, moist, medium dense (fill)	0.0	Soil at 3-4'
8"	1.5'	SAND, fine to medium grained, trace coarse sand, silt, gravel, brick, and concrete, brown, loose (fill)	0.0	
1.5'	2.5'	SILTY CLAY, trace concrete, brown with grey mottling, stiff (fill)	0.0	
2.5'	4'	SAND, fine to coarse grained, trace asphalt, brick, and roots, brown to black, medium dense (fill)	0.0	
4'	5'	SILTY CLAY, trace concrete, brown with grey mottling, stiff (fill)	0.0	
5'	7.5'	SAND, fine to medium grained, trace coarse sand, brick, asphalt, and concrete, brown, moist, loose (fill)	0.0	
		Refusal at 7.5' bgs, End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1474 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-22**
 Total Depth: 12' bgs
 Date Completed: 4/8/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	1'	Topsoil, very fine to fine grained sand, trace to some silt, trace organics, dark brown, moist, medium dense (fill)	0.0	
1'	2.5'	SAND, fine to medium grained, light brown, moist, loose (fill)	0.0	
2.5'	5'	SANDY CLAY, some silt, trace coarse sand, brown, medium stiff (sandy clay)	0.0	
5'	12'	SILTY CLAY, trace very fine to very coarse grained sand and gravel, brown with grey mottling, stiff (silty clay)	0.0	
		End of Boring		Soil at 9-10'

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1474 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-23**
 Total Depth: 8' bgs
 Date Completed: 4/8/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	10"	Topsoil, very fine to fine grained sand, trace silt and organics, dark brown, moist, loose (fill)	0.0	
10"	3.5'	SAND, very fine to medium grained, trace coarse to very coarse grained sand, gravel, brick, and asphalt, varigated orange, brown, and black, loose (fill)	0.0	Soil at 2-3'
3.5'	4'	SILTY CLAY, trace very fine to very coarse grained sand and gravel, brown, stiff (silty clay)	0.0	
4'	6'	SAND, fine to medium grained, trace gravel, brown, moist, medium dense (sand)	0.0	
6'	8'	SILTY CLAY, trace very fine to medium grained sand and gravel, brown, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1462 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-24**
 Total Depth: 8' bgs
 Date Completed: 4/8/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	4"	Topsoil, very fine to fine grained sand, trace clay and organics, dark brown, moist, loose (fill)	0.0	
4"	1'	SAND, fine to medium grained, trace silt and brick, brown, moist, loose (fill)	0.0	
1'	4'	SANDY CLAY, trace to some silt, trace gravel and brick, brown, medium stiff to stiff (fill)	0.0	Soil at 1-2'
4'	8'	SILTY CLAY, trace very fine to coarse grained sand, brown with grey mottling, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1452 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-25**
 Total Depth: 8' bgs
 Date Completed: 4/8/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	8"	Topsoil, silty very fine to fine grained sand, trace organics, dark brown, moist, medium dense (fill)	0.0	
8"	3.5'	SAND, very fine to fine grained, trace to some silt, trace brick and concrete, brown to dark brown, moist, medium dense (fill)	0.0	Soil at 1-2'
3.5'	8'	SILTY CLAY, trace very fine to very coarse grained sand and gravel, brown with grey mottling (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1448 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-26**
 Total Depth: 12' bgs
 Date Completed: 4/8/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	6"	Topsoil, very fine grained sand, some silt, trace organics, dark brown, moist, medium dense (fill)	0.0	
6"	4.5'	SAND, very fine to fine grained, trace to some silt, trace glass, brick, asphalt, and concrete, varigated brown, orange, and black, medium dense (fill)	0.0	Soil at 3-4'
4.5'	12'	SILTY CLAY, trace very fine to very coarse grained sand and gravel, brown with grey mottling, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-27**
 Total Depth: 8' bgs
 Date Completed: 4/8/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	8"	Topsoil, very fine to fine grained sand, trace silt, organics, and organics dark brown, moist, loose (fill)	0.0	Soil at 0.5-1'
8"	3'	SAND, fine to very coarse grained, trace gravel, brown, moist, loose (fill)	0.0	
3'	4'	SILTY very fine grained SAND, dark brown, moist, medium dense (fill)	0.0	
4'	8'	SILTY CLAY, trace very fine to coarse grained sand and gravel, brown with grey mottling, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Boring Data	
Boring ID:	SB-28
Total Depth:	12' bgs
Date Completed:	4/8/2020

Proj. Name:	Field Street I & II
Proj. Number:	1-11284

Site Address:	1481 Field Street
	Detroit, Michigan

Drilled by:	ERG
Method:	Direct push probe
Geologist:	Jeremy Efros

MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	8"	Topsoil, silty very fine grained sand, trace organics, brown, moist, medium dense (fill)	0.0	
8"	1.75'	SAND, very fine to medium grained, trace silt, brick, and asphalt, brown, moist, medium dense (fill)	0.0	
1.75'	12'	SILTY CLAY, trace very fine to very coarse grained sand and gravel, occasional silt or sandy clay seams, brown with grey mottling, stiff (silty clay)	0.0	Soil at 11-12'
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Boring Data	
Boring ID:	SB-29
Total Depth:	8' bgs

Date Completed:	4/8/2020
-----------------	----------

MW Data	
Size:	NA
Type:	NA
Screen Length:	NA
Well Depth:	NA
GW Depth (▼):	NA

Proj. Name:	Field Street I & II
Proj. Number:	1-11284

Site Address:	1481 Field Street
	Detroit, Michigan

Drilled by:	ERG
Method:	Direct push probe
Geologist:	Jeremy Efros

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	4"	Topsoil, very fine to fine grained sand, trace to some silt, trace organics, dark brown, moist, loose (fill)	0.0	
4"	3.5'	SAND, very fine to medium grained, trace silt, very coarse grained sand, gravel, brick, slag, asphalt, concrete, and wood, varigated brown, orange, and black, loose to medium dense (fill)	0.0	Soil at 1-2'
3.5'	8'	SILTY CLAY, trace very fine to very coarse grained sand and gravel, occasional silt seams, brown, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

ASTI Environmental
 10448 Citation Dr., Suite 100
 Brighton, MI 48116

SOIL BORING LOG

Proj. Name: Field Street I & II
 Proj. Number: 1-11284

Site Address: 1495 Field Street
 Detroit, Michigan

Drilled by: ERG
 Method: Direct push probe
 Geologist: Jeremy Efros

Boring Data
 Boring ID: **SB-30**
 Total Depth: 12' bgs

Date Completed: 4/8/2020

MW Data
 Size: NA
 Type: NA
 Screen Length: NA
 Well Depth: NA
 GW Depth (▼): 8' bgs

Depth		Description	PID (ppm)	Sample Depth
From	To			
0	4"	Topsoil, silty very fine grained sand, trace clay and organics, brown, moist, medium dense (fill)	0.0	
4"	3'	SAND, very fine to fine grained sand, some silt, trace brick and cinders, brown, moist, medium dense (fill)	0.0	Soil at 1-2'
3'	3.5'	SAND, very fine to fine grained sand, trace silt, dark brown, moist, loose (fill)	0.0	
3.5'	4'	Concrete	0.0	
4'	10.5'	SAND, very fine to fine grained, light brown, moist to wet at 8' bgs, loose (fill)	0.0	
10.5'	12'	SILTY CLAY, trace very fine to very coarse grained sand, grey, stiff (silty clay)	0.0	
		End of Boring		

ppm = parts per million
 MW = monitoring well
 bgs = below ground surface
 () = USDA soil texture

Attachment C

Laboratory Analytical Reports and Chain-of-Custody Documentation



Thursday, April 16, 2020

Fibertec Project Number: 95703
Project Identification: Field Street and East Grand Boulevard (1-11284) /1-11284
Submittal Date: 04/07/2020

Mr. Brian Kuberski
Applied Science & Technology, Inc. - Brighton
10448 Citation
Suite 100
Brighton, MI 48116

Dear Mr. Kuberski,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

A handwritten signature in black ink, appearing to read "Rikki Lott".

By Rikki Lott at 10:49 AM, Apr 16, 2020

For Daryl P. Strandbergh
Laboratory Director

Enclosures

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-001

Order: 95703
 Page: 2 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-1 (7-8')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 09:15

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-001** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-1 (7-8')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	14		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-001** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-1 (7-8')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	8000		µg/kg	100	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
2. Barium	66000		µg/kg	1000	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
3. Cadmium	180		µg/kg	50	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH
4. Chromium	19000		µg/kg	500	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
5. Lead	15000		µg/kg	1000	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
6. Selenium	310		µg/kg	200	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-001** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-1 (7-8')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		µg/kg	50	9.5	04/09/20	PM20D09C	04/09/20	M720D09B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-001A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-1 (7-8')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/09/20	V120D09A	04/09/20	V120D09A	JLM
‡ 2. Acrylonitrile	U		µg/kg	100	1.0	04/09/20	V120D09A	04/09/20	V120D09A	JLM
3. Benzene	U		µg/kg	50	1.0	04/09/20	V120D09A	04/09/20	V120D09A	JLM
4. Bromobenzene	U		µg/kg	100	1.0	04/09/20	V120D09A	04/09/20	V120D09A	JLM
5. Bromochloromethane	U		µg/kg	100	1.0	04/09/20	V120D09A	04/09/20	V120D09A	JLM
6. Bromodichloromethane	U		µg/kg	100	1.0	04/09/20	V120D09A	04/09/20	V120D09A	JLM
7. Bromoform	U		µg/kg	100	1.0	04/09/20	V120D09A	04/09/20	V120D09A	JLM
8. Bromomethane	U		µg/kg	200	1.0	04/09/20	V120D09A	04/09/20	V120D09A	JLM
9. 2-Butanone	U		µg/kg	750	1.0	04/09/20	V120D09A	04/09/20	V120D09A	JLM
10. n-Butylbenzene	U		µg/kg	50	1.0	04/09/20	V120D09A	04/09/20	V120D09A	JLM
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/09/20	V120D09A	04/09/20	V120D09A	JLM

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-001

Order: 95703
Page: 3 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-1 (7-8')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 09:15

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-001A **Matrix: Soil/Solid**
Description: SB-1 (7-8')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
13. Carbon Disulfide	U		µg/kg	250	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
14. Carbon Tetrachloride	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
15. Chlorobenzene	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
16. Chloroethane	U		µg/kg	250	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
17. Chloroform	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
18. Chloromethane	U		µg/kg	250	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U	V+	µg/kg	250	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
21. Dibromochloromethane	U		µg/kg	100	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
22. Dibromomethane	U		µg/kg	250	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
35. Ethylbenzene	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
37. 2-Hexanone	U		µg/kg	2500	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
38. Isopropylbenzene	U		µg/kg	250	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
40. Methylene Chloride	U		µg/kg	100	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
‡ 41. 2-Methylnaphthalene	U	L+	µg/kg	330	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
42. MTBE	U		µg/kg	250	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
43. Naphthalene	U		µg/kg	330	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
44. n-Propylbenzene	U		µg/kg	100	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
45. Styrene	U		µg/kg	67	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
48. Tetrachloroethene	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-001

Order: 95703
 Page: 4 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-1 (7-8')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 09:15

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-001A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-1 (7-8')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
49. Toluene	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
53. Trichloroethene	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
59. Vinyl Chloride	U		µg/kg	47	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
60. m&p-Xylene	U		µg/kg	100	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
61. o-Xylene	U		µg/kg	50	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM
‡ 62. Xylenes	U		µg/kg	150	1.0	04/09/20	VI20D09A	04/09/20	VI20D09A	JLM

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **95703-001** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8270E Description: **SB-1 (7-8')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
3. Anthracene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
9. Chrysene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
12. Fluorene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
15. Naphthalene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
16. Phenanthrene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
17. Pyrene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-002

Order: 95703
 Page: 5 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-2 (1-2')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 10:05

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-002** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-2 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	20		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-002** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-2 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	7900		µg/kg	100	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
2. Barium	160000		µg/kg	1000	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
3. Cadmium	370		µg/kg	50	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH
4. Chromium	19000		µg/kg	500	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
5. Lead	90000		µg/kg	1000	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
6. Selenium	260		µg/kg	200	10	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-002** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-2 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	53		µg/kg	50	8.4	04/09/20	PM20D09C	04/09/20	M720D09B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-002A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-2 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
‡ 2. Acrylonitrile	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
3. Benzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
4. Bromobenzene	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
5. Bromochloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
6. Bromodichloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
7. Bromoform	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
8. Bromomethane	U		µg/kg	200	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
9. 2-Butanone	U		µg/kg	750	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
10. n-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-002

Order: 95703
 Page: 6 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-2 (1-2')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 10:05

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: **95703-002A** Matrix: **Soil/Solid**
 Description: **SB-2 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
13. Carbon Disulfide	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
14. Carbon Tetrachloride	U		µg/kg	53	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
15. Chlorobenzene	U		µg/kg	53	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
16. Chloroethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
17. Chloroform	U		µg/kg	53	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
18. Chloromethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U	V+	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
21. Dibromochloromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
22. Dibromomethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
27. 1,1-Dichloroethane	U		µg/kg	53	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
29. 1,1-Dichloroethene	U	F+	µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
32. 1,2-Dichloropropane	U		µg/kg	53	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
33. cis-1,3-Dichloropropene	U		µg/kg	53	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
34. trans-1,3-Dichloropropene	U		µg/kg	53	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
35. Ethylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
37. 2-Hexanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
38. Isopropylbenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
40. Methylene Chloride	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 41. 2-Methylnaphthalene	U	F+	µg/kg	330	1.0	04/14/20	VJ20D14B	04/14/20	VJ20D14B	JLM
42. MTBE	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
43. Naphthalene	U	V+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
44. n-Propylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
45. Styrene	U		µg/kg	75	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
48. Tetrachloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-002

Order: 95703
Page: 7 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-2 (1-2')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 10:05

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-002A **Matrix: Soil/Solid**
Description: SB-2 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	53	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
50. 1,2,4-Trichlorobenzene	U		µg/kg	290	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
51. 1,1,1-Trichloroethane	U		µg/kg	53	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
52. 1,1,2-Trichloroethane	U		µg/kg	53	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
53. Trichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
59. Vinyl Chloride	U	B	µg/kg	53	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
60. m&p-Xylene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
61. o-Xylene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 62. Xylenes	U		µg/kg	150	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270E

Aliquot ID: 95703-002 **Matrix: Soil/Solid**
Description: SB-2 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
3. Anthracene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
9. Chrysene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
11. Fluoranthene (SIM)	430		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
12. Fluorene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
15. Naphthalene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
16. Phenanthrene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
17. Pyrene (SIM)	380		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-003

Order: 95703
 Page: 8 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: Dup1-S	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: NA

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-003** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **Dup1-S**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	22		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-003** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **Dup1-S**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	7800		µg/kg	100	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
2. Barium	120000		µg/kg	1000	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
3. Cadmium	280		µg/kg	50	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH
4. Chromium	19000		µg/kg	500	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
5. Lead	56000		µg/kg	1000	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
6. Selenium	320		µg/kg	200	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-003** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **Dup1-S**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	78		µg/kg	50	9.4	04/09/20	PM20D09C	04/09/20	M720D09B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-003A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **Dup1-S**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
‡ 2. Acrylonitrile	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
3. Benzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
4. Bromobenzene	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
5. Bromochloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
6. Bromodichloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
7. Bromoform	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
8. Bromomethane	U		µg/kg	200	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
9. 2-Butanone	U		µg/kg	750	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
10. n-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-003

Order: 95703
 Page: 9 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: Dup1-S	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: NA

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-003A **Matrix: Soil/Solid**
Description: Dup1-S

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
13. Carbon Disulfide	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
14. Carbon Tetrachloride	U		µg/kg	54	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
15. Chlorobenzene	U		µg/kg	54	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
16. Chloroethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
17. Chloroform	U		µg/kg	54	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
18. Chloromethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U	V+	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
21. Dibromochloromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
22. Dibromomethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
27. 1,1-Dichloroethane	U		µg/kg	54	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
32. 1,2-Dichloropropane	U		µg/kg	54	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
33. cis-1,3-Dichloropropene	U		µg/kg	54	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
34. trans-1,3-Dichloropropene	U		µg/kg	54	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
35. Ethylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
37. 2-Hexanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
38. Isopropylbenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
40. Methylene Chloride	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 41. 2-Methylnaphthalene	U	L+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
42. MTBE	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
43. Naphthalene	U	V+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
44. n-Propylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
45. Styrene	U		µg/kg	78	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
47. 1,1,1,2-Tetrachloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
48. Tetrachloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-003

Order: 95703
Page: 10 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: Dup1-S	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: NA

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-003A **Matrix: Soil/Solid**
Description: Dup1-S

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	54	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
50. 1,2,4-Trichlorobenzene	U		µg/kg	290	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
51. 1,1,1-Trichloroethane	U		µg/kg	54	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
52. 1,1,2-Trichloroethane	U		µg/kg	54	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
53. Trichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
59. Vinyl Chloride	U	B	µg/kg	54	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
60. m&p-Xylene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
61. o-Xylene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 62. Xylenes	U		µg/kg	150	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270E

Aliquot ID: 95703-003 **Matrix: Soil/Solid**
Description: Dup1-S

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
3. Anthracene (SIM)	U		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	340	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
9. Chrysene (SIM)	U		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
11. Fluoranthene (SIM)	410		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
12. Fluorene (SIM)	U		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
15. Naphthalene (SIM)	U		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
16. Phenanthrene (SIM)	350		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
17. Pyrene (SIM)	380		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-004

Order: 95703
Page: 11 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-3 (4.5-5.5')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 10:35

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-004** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-3 (4.5-5.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	17		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-004** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-3 (4.5-5.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	3500		µg/kg	100	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
2. Barium	93000		µg/kg	1000	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
3. Cadmium	350		µg/kg	50	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH
4. Chromium	8900		µg/kg	500	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
5. Lead	300000		µg/kg	1000	100	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
6. Selenium	210		µg/kg	200	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-004** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-3 (4.5-5.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	120		µg/kg	50	9.1	04/09/20	PM20D09C	04/09/20	M720D09B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-004A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-3 (4.5-5.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
‡ 2. Acrylonitrile	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
3. Benzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
4. Bromobenzene	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
5. Bromochloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
6. Bromodichloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
7. Bromoform	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
8. Bromomethane	U		µg/kg	200	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
9. 2-Butanone	U		µg/kg	750	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
10. n-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-004

Order: 95703
 Page: 12 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-3 (4.5-5.5')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 10:35

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: **95703-004A** Matrix: **Soil/Solid**
 Description: **SB-3 (4.5-5.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
13. Carbon Disulfide	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
14. Carbon Tetrachloride	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
15. Chlorobenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
16. Chloroethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
17. Chloroform	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
18. Chloromethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U	V+	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
21. Dibromochloromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
22. Dibromomethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
35. Ethylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
37. 2-Hexanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
38. Isopropylbenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
40. Methylene Chloride	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 41. 2-Methylnaphthalene	U	L+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
42. MTBE	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
43. Naphthalene	U	V+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
44. n-Propylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
45. Styrene	U		µg/kg	69	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
48. Tetrachloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-004

Order: 95703
 Page: 13 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-3 (4.5-5.5')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 10:35

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-004A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-3 (4.5-5.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
50. 1,2,4-Trichlorobenzene	U		µg/kg	260	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
53. Trichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
59. Vinyl Chloride	U	B	µg/kg	48	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
60. m&p-Xylene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
61. o-Xylene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 62. Xylenes	U		µg/kg	150	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **95703-004** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8270E Description: **SB-3 (4.5-5.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
3. Anthracene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
9. Chrysene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
12. Fluorene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
15. Naphthalene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
16. Phenanthrene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
17. Pyrene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-005

Order: 95703
Page: 14 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-4 (1-2')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 10:55

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-005** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-4 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	12		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-005** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-4 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	4800		µg/kg	100	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
2. Barium	61000		µg/kg	1000	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
3. Cadmium	340		µg/kg	50	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH
4. Chromium	9500		µg/kg	500	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
5. Lead	100000		µg/kg	1000	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
6. Selenium	270		µg/kg	200	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-005** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-4 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	68		µg/kg	50	9.4	04/09/20	PM20D09C	04/09/20	M720D09B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-005A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-4 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
‡ 2. Acrylonitrile	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
3. Benzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
4. Bromobenzene	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
5. Bromochloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
6. Bromodichloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
7. Bromoform	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
8. Bromomethane	U		µg/kg	200	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
9. 2-Butanone	U		µg/kg	750	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
10. n-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-005

Order: 95703
Page: 15 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-4 (1-2')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 10:55

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-005A **Matrix: Soil/Solid**
Description: SB-4 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
13. Carbon Disulfide	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
14. Carbon Tetrachloride	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
15. Chlorobenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
16. Chloroethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
17. Chloroform	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
18. Chloromethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U	V+	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
21. Dibromochloromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
22. Dibromomethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
35. Ethylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
37. 2-Hexanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
38. Isopropylbenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
40. Methylene Chloride	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 41. 2-Methylnaphthalene	U	L+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
42. MTBE	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
43. Naphthalene	U	V+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
44. n-Propylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
45. Styrene	U		µg/kg	63	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
48. Tetrachloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-005

Order: 95703
Page: 16 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-4 (1-2')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 10:55

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-005A **Matrix: Soil/Solid**
Description: SB-4 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
53. Trichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
59. Vinyl Chloride	U	B	µg/kg	44	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
60. m&p-Xylene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
61. o-Xylene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 62. Xylenes	U		µg/kg	150	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270E

Aliquot ID: 95703-005 **Matrix: Soil/Solid**
Description: SB-4 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
3. Anthracene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
4. Benzo(a)anthracene (SIM)	360		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
5. Benzo(a)pyrene (SIM)	380		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
6. Benzo(b)fluoranthene (SIM)	570		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
9. Chrysene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
11. Fluoranthene (SIM)	770		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
12. Fluorene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
15. Naphthalene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
16. Phenanthrene (SIM)	400		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
17. Pyrene (SIM)	660		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-006

Order: 95703
Page: 17 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-5 (1-2')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-006** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-5 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	12		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-006** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-5 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	5700		µg/kg	100	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
2. Barium	870000		µg/kg	5000	100	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
3. Cadmium	1100		µg/kg	50	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH
4. Chromium	17000		µg/kg	500	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
5. Lead	710000		µg/kg	1000	100	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
6. Selenium	550		µg/kg	200	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
7. Silver	130		µg/kg	100	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-006** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-5 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	340		µg/kg	50	9.3	04/09/20	PM20D09C	04/09/20	M720D09B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-006A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-5 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
‡ 2. Acrylonitrile	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
3. Benzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
4. Bromobenzene	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
5. Bromochloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
6. Bromodichloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
7. Bromoform	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
8. Bromomethane	U		µg/kg	200	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
9. 2-Butanone	U		µg/kg	750	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
10. n-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-006

Order: 95703
Page: 18 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-5 (1-2')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-006A **Matrix: Soil/Solid**
Description: SB-5 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
13. Carbon Disulfide	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
14. Carbon Tetrachloride	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
15. Chlorobenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
16. Chloroethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
17. Chloroform	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
18. Chloromethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U	V+	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
21. Dibromochloromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
22. Dibromomethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
35. Ethylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
37. 2-Hexanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
38. Isopropylbenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
40. Methylene Chloride	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 41. 2-Methylnaphthalene	U	L+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
42. MTBE	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
43. Naphthalene	U	V+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
44. n-Propylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
45. Styrene	U		µg/kg	64	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
48. Tetrachloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-006

Order: 95703
Page: 19 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-5 (1-2')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-006A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-5 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
53. Trichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
59. Vinyl Chloride	U	B	µg/kg	45	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
60. m&p-Xylene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
61. o-Xylene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 62. Xylenes	U		µg/kg	150	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **95703-006** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8270E Description: **SB-5 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
3. Anthracene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
6. Benzo(b)fluoranthene (SIM)	370		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
9. Chrysene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
11. Fluoranthene (SIM)	560		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
12. Fluorene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
15. Naphthalene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
16. Phenanthrene (SIM)	390		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
17. Pyrene (SIM)	490		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-007

Order: 95703
 Page: 20 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-6 (1.5-2.5')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-007** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-6 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	14		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-007** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-6 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	3700		µg/kg	100	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
2. Barium	58000		µg/kg	1000	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
3. Cadmium	220		µg/kg	50	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH
4. Chromium	9400		µg/kg	500	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
5. Lead	100000		µg/kg	1000	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
6. Selenium	220		µg/kg	200	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-007** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-6 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	100		µg/kg	50	8.4	04/09/20	PM20D09C	04/09/20	M720D09B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-007A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-6 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
‡ 2. Acrylonitrile	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
3. Benzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
4. Bromobenzene	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
5. Bromochloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
6. Bromodichloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
7. Bromoform	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
8. Bromomethane	U		µg/kg	200	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
9. 2-Butanone	U		µg/kg	750	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
10. n-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-007

Order: 95703
Page: 21 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-6 (1.5-2.5')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-007A **Matrix: Soil/Solid**
Description: SB-6 (1.5-2.5')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
13. Carbon Disulfide	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
14. Carbon Tetrachloride	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
15. Chlorobenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
16. Chloroethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
17. Chloroform	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
18. Chloromethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U	V+	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
21. Dibromochloromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
22. Dibromomethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
35. Ethylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
37. 2-Hexanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
38. Isopropylbenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
40. Methylene Chloride	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 41. 2-Methylnaphthalene	U	L+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
42. MTBE	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
43. Naphthalene	U	V+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
44. n-Propylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
45. Styrene	U		µg/kg	64	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
48. Tetrachloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-007

Order: 95703
Page: 22 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-6 (1.5-2.5')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-007A **Matrix: Soil/Solid**
Description: SB-6 (1.5-2.5')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
53. Trichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
59. Vinyl Chloride	U	B	µg/kg	45	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
60. m&p-Xylene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
61. o-Xylene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 62. Xylenes	U		µg/kg	150	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270E

Aliquot ID: 95703-007 **Matrix: Soil/Solid**
Description: SB-6 (1.5-2.5')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
3. Anthracene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
9. Chrysene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
12. Fluorene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
15. Naphthalene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
16. Phenanthrene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
17. Pyrene (SIM)	U		µg/kg	330	10	04/09/20	PS20D09A	04/10/20	S620D09B	GJP

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-008

Order: 95703
 Page: 23 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-7 (1-2')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:50

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-008** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-7 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	15		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-008** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-7 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	6500		µg/kg	100	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
2. Barium	61000		µg/kg	1000	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
3. Cadmium	260		µg/kg	50	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH
4. Chromium	14000		µg/kg	500	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
5. Lead	77000		µg/kg	1000	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
6. Selenium	U		µg/kg	200	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-008** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-7 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		µg/kg	50	8.7	04/09/20	PM20D09C	04/09/20	M720D09B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-008A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-7 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
‡ 2. Acrylonitrile	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
3. Benzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
4. Bromobenzene	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
5. Bromochloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
6. Bromodichloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
7. Bromoform	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
8. Bromomethane	U		µg/kg	200	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
9. 2-Butanone	U		µg/kg	750	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
10. n-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-008

Order: 95703
 Page: 24 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-7 (1-2')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:50

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-008A **Matrix: Soil/Solid**
Description: SB-7 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
13. Carbon Disulfide	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
14. Carbon Tetrachloride	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
15. Chlorobenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
16. Chloroethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
17. Chloroform	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
18. Chloromethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U	V+	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
21. Dibromochloromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
22. Dibromomethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
35. Ethylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
37. 2-Hexanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
38. Isopropylbenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
40. Methylene Chloride	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 41. 2-Methylnaphthalene	U	L+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
42. MTBE	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
43. Naphthalene	U	V+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
44. n-Propylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
45. Styrene	U		µg/kg	68	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
48. Tetrachloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-008

Order: 95703
Page: 25 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-7 (1-2')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:50

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-008A **Matrix: Soil/Solid**
Description: SB-7 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
50. 1,2,4-Trichlorobenzene	U		µg/kg	260	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
53. Trichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
59. Vinyl Chloride	U	B	µg/kg	48	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
60. m&p-Xylene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
61. o-Xylene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 62. Xylenes	U		µg/kg	150	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270E

Aliquot ID: 95703-008 **Matrix: Soil/Solid**
Description: SB-7 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
3. Anthracene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
9. Chrysene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
11. Fluoranthene (SIM)	400		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
12. Fluorene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
15. Naphthalene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
16. Phenanthrene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
17. Pyrene (SIM)	330		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-009

Order: 95703
 Page: 26 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-8 (1-2')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 12:50

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-009** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-8 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	13		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-009** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-8 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	8600		µg/kg	100	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
2. Barium	73000		µg/kg	1000	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
3. Cadmium	250		µg/kg	50	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH
4. Chromium	21000		µg/kg	500	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
5. Lead	57000		µg/kg	1000	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
6. Selenium	250		µg/kg	200	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-009** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-8 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		µg/kg	50	8.9	04/09/20	PM20D09C	04/09/20	M720D09B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-009A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-8 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
‡ 2. Acrylonitrile	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
3. Benzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
4. Bromobenzene	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
5. Bromochloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
6. Bromodichloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
7. Bromoform	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
8. Bromomethane	U		µg/kg	200	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
9. 2-Butanone	U		µg/kg	750	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
10. n-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-009

Order: 95703
 Page: 27 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-8 (1-2')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 12:50

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-009A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-8 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
13. Carbon Disulfide	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
14. Carbon Tetrachloride	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
15. Chlorobenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
16. Chloroethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
17. Chloroform	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
18. Chloromethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U	V+	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
21. Dibromochloromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
22. Dibromomethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
35. Ethylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
37. 2-Hexanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
38. Isopropylbenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
40. Methylene Chloride	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 41. 2-Methylnaphthalene	U	L+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
42. MTBE	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
43. Naphthalene	U	V+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
44. n-Propylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
45. Styrene	U		µg/kg	66	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
48. Tetrachloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-009

Order: 95703
Page: 28 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-8 (1-2')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 12:50

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-009A **Matrix: Soil/Solid**
Description: SB-8 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
53. Trichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
59. Vinyl Chloride	U	B	µg/kg	46	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
60. m&p-Xylene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
61. o-Xylene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 62. Xylenes	U		µg/kg	150	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270E

Aliquot ID: 95703-009 **Matrix: Soil/Solid**
Description: SB-8 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
3. Anthracene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
9. Chrysene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
12. Fluorene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
15. Naphthalene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
16. Phenanthrene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
17. Pyrene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/10/20	S620D09B	GJP

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-010

Order: 95703
 Page: 29 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-9 (2-3')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 13:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-010** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-9 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	14		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-010** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-9 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	9700		µg/kg	100	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
2. Barium	250000		µg/kg	1000	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
3. Cadmium	750		µg/kg	50	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH
4. Chromium	18000		µg/kg	500	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
5. Lead	780000		µg/kg	1000	200	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
6. Selenium	770		µg/kg	200	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-010** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-9 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	250		µg/kg	50	8.4	04/09/20	PM20D09C	04/09/20	M720D09B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-010A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-9 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
‡ 2. Acrylonitrile	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
3. Benzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
4. Bromobenzene	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
5. Bromochloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
6. Bromodichloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
7. Bromoform	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
8. Bromomethane	U		µg/kg	200	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
9. 2-Butanone	U		µg/kg	750	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
10. n-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-010

Order: 95703
Page: 30 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-9 (2-3')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 13:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-010A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-9 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
13. Carbon Disulfide	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
14. Carbon Tetrachloride	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
15. Chlorobenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
16. Chloroethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
17. Chloroform	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
18. Chloromethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U	V+	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
21. Dibromochloromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
22. Dibromomethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
35. Ethylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
37. 2-Hexanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
38. Isopropylbenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
40. Methylene Chloride	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 41. 2-Methylnaphthalene	U	L+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
42. MTBE	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
43. Naphthalene	U	V+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
44. n-Propylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
45. Styrene	U		µg/kg	64	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
48. Tetrachloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-010

Order: 95703
Page: 31 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-9 (2-3')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 13:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-010A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-9 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
53. Trichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
59. Vinyl Chloride	U	B	µg/kg	45	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
60. m&p-Xylene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
61. o-Xylene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 62. Xylenes	U		µg/kg	150	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **95703-010** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8270E Description: **SB-9 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
3. Anthracene (SIM)	U		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
4. Benzo(a)anthracene (SIM)	950		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
5. Benzo(a)pyrene (SIM)	820		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
6. Benzo(b)fluoranthene (SIM)	1300		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
7. Benzo(ghi)perylene (SIM)	490		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
8. Benzo(k)fluoranthene (SIM)	440		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
9. Chrysene (SIM)	860		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
11. Fluoranthene (SIM)	1600		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
12. Fluorene (SIM)	U		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	570		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
15. Naphthalene (SIM)	U		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
16. Phenanthrene (SIM)	1000		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
17. Pyrene (SIM)	1500		µg/kg	330	20	04/09/20	PS20D09A	04/10/20	S620D09B	GJP

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-011

Order: 95703
 Page: 32 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-10 (1-2')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 13:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-011** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-10 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	9		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-011** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-10 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	6300		µg/kg	100	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
2. Barium	15000		µg/kg	1000	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
3. Cadmium	97		µg/kg	50	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH
4. Chromium	5200		µg/kg	500	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
5. Lead	11000		µg/kg	1000	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
6. Selenium	U		µg/kg	200	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-011** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-10 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		µg/kg	50	9.1	04/09/20	PM20D09C	04/09/20	M720D09B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-011A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-10 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
‡ 2. Acrylonitrile	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
3. Benzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
4. Bromobenzene	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
5. Bromochloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
6. Bromodichloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
7. Bromoform	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
8. Bromomethane	U		µg/kg	200	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
9. 2-Butanone	U		µg/kg	750	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
10. n-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-011

Order: 95703
 Page: 33 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-10 (1-2')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 13:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-011A **Matrix: Soil/Solid**
Description: SB-10 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
13. Carbon Disulfide	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
14. Carbon Tetrachloride	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
15. Chlorobenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
16. Chloroethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
17. Chloroform	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
18. Chloromethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U	V+	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
21. Dibromochloromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
22. Dibromomethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
35. Ethylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
37. 2-Hexanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
38. Isopropylbenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
40. Methylene Chloride	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 41. 2-Methylnaphthalene	U	L+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
42. MTBE	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
43. Naphthalene	U	V+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
44. n-Propylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
45. Styrene	U		µg/kg	61	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
48. Tetrachloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-011

Order: 95703
Page: 34 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-10 (1-2')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 13:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-011A **Matrix: Soil/Solid**
Description: SB-10 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
53. Trichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
59. Vinyl Chloride	U	B	µg/kg	43	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
60. m&p-Xylene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
61. o-Xylene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 62. Xylenes	U		µg/kg	150	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270E

Aliquot ID: 95703-011 **Matrix: Soil/Solid**
Description: SB-10 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
3. Anthracene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
9. Chrysene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
12. Fluorene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
15. Naphthalene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
16. Phenanthrene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP
17. Pyrene (SIM)	U		µg/kg	330	1.0	04/09/20	PS20D09A	04/09/20	S620D09B	GJP

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-012

Order: 95703
 Page: 35 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-11 (3-3.5')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 13:50

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-012** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-11 (3-3.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	10		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-012** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-11 (3-3.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	5200		µg/kg	100	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
2. Barium	94000		µg/kg	1000	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
3. Cadmium	260		µg/kg	50	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH
4. Chromium	12000		µg/kg	500	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
5. Lead	300000		µg/kg	1000	100	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
6. Selenium	280		µg/kg	200	20	04/13/20	PT20D13B	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13B	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-012** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-11 (3-3.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	130		µg/kg	50	9.0	04/09/20	PM20D09C	04/09/20	M720D09B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-012A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-11 (3-3.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
‡ 2. Acrylonitrile	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
3. Benzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
4. Bromobenzene	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
5. Bromochloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
6. Bromodichloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
7. Bromoform	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
8. Bromomethane	U		µg/kg	200	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
9. 2-Butanone	U		µg/kg	750	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
10. n-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-012

Order: 95703
Page: 36 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-11 (3-3.5')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 13:50

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-012A **Matrix: Soil/Solid**
Description: SB-11 (3-3.5')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
13. Carbon Disulfide	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
14. Carbon Tetrachloride	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
15. Chlorobenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
16. Chloroethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
17. Chloroform	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
18. Chloromethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U	V+	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
21. Dibromochloromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
22. Dibromomethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
35. Ethylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
37. 2-Hexanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
38. Isopropylbenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
40. Methylene Chloride	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 41. 2-Methylnaphthalene	U	L+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
42. MTBE	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
43. Naphthalene	U	V+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
44. n-Propylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
45. Styrene	U		µg/kg	59	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
48. Tetrachloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-012

Order: 95703
Page: 37 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-11 (3-3.5')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 13:50

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-012A **Matrix: Soil/Solid**
Description: SB-11 (3-3.5')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
53. Trichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
59. Vinyl Chloride	U	B	µg/kg	41	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
60. m&p-Xylene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
61. o-Xylene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 62. Xylenes	U		µg/kg	150	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270E

Aliquot ID: 95703-012 **Matrix: Soil/Solid**
Description: SB-11 (3-3.5')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
3. Anthracene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
9. Chrysene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
12. Fluorene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
15. Naphthalene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
16. Phenanthrene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP
17. Pyrene (SIM)	U		µg/kg	330	15	04/09/20	PS20D09A	04/10/20	S620D09B	GJP

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-013

Order: 95703
 Page: 38 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-12 (1-2')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 14:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-013** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-12 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	10		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-013** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-12 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	5200		µg/kg	100	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
2. Barium	120000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
3. Cadmium	420		µg/kg	50	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH
4. Chromium	10000		µg/kg	500	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
5. Lead	110000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
6. Selenium	210		µg/kg	200	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-013** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-12 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	170		µg/kg	50	9.1	04/13/20	PM20D13A	04/14/20	M720D14B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-013A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-12 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
‡ 2. Acrylonitrile	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
3. Benzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
4. Bromobenzene	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
5. Bromochloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
6. Bromodichloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
7. Bromoform	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
8. Bromomethane	U		µg/kg	200	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
9. 2-Butanone	U		µg/kg	750	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
10. n-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-013

Order: 95703
Page: 39 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-12 (1-2')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 14:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-013A **Matrix: Soil/Solid**
Description: SB-12 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
13. Carbon Disulfide	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
14. Carbon Tetrachloride	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
15. Chlorobenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
16. Chloroethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
17. Chloroform	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
18. Chloromethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U	V+	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
21. Dibromochloromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
22. Dibromomethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
35. Ethylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
37. 2-Hexanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
38. Isopropylbenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
40. Methylene Chloride	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 41. 2-Methylnaphthalene	U	L+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
42. MTBE	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
43. Naphthalene	U	V+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
44. n-Propylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
45. Styrene	U		µg/kg	63	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
47. 1,1,1,2-Tetrachloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
48. Tetrachloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-013

Order: 95703
Page: 40 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-12 (1-2')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 14:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-013A **Matrix: Soil/Solid**
Description: SB-12 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
53. Trichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
59. Vinyl Chloride	U	B	µg/kg	44	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
60. m&p-Xylene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
61. o-Xylene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 62. Xylenes	U		µg/kg	150	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270E

Aliquot ID: 95703-013 **Matrix: Soil/Solid**
Description: SB-12 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
2. Acenaphthylene (SIM)	U		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
3. Anthracene (SIM)	U		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
4. Benzo(a)anthracene (SIM)	1600	F+	µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
5. Benzo(a)pyrene (SIM)	1200		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
6. Benzo(b)fluoranthene (SIM)	2100		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
7. Benzo(ghi)perylene (SIM)	1100		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
8. Benzo(k)fluoranthene (SIM)	600		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
9. Chrysene (SIM)	1300	F+	µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
11. Fluoranthene (SIM)	3500	F+	µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
12. Fluorene (SIM)	U		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
13. Indeno(1,2,3-cd)pyrene (SIM)	1100		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
15. Naphthalene (SIM)	U		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
16. Phenanthrene (SIM)	1000	F+	µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
17. Pyrene (SIM)	2700	F+	µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-014

Order: 95703
 Page: 41 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-13 (1.5-2.5')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 14:40

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-014** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-13 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	12		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-014** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-13 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	5400		µg/kg	100	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
2. Barium	97000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
3. Cadmium	310		µg/kg	50	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH
4. Chromium	15000		µg/kg	500	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
5. Lead	77000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
6. Selenium	210		µg/kg	200	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-014** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-13 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		µg/kg	50	8.9	04/13/20	PM20D13A	04/14/20	M720D14B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-014A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-13 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
‡ 2. Acrylonitrile	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
3. Benzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
4. Bromobenzene	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
5. Bromochloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
6. Bromodichloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
7. Bromoform	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
8. Bromomethane	U		µg/kg	200	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
9. 2-Butanone	U		µg/kg	750	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
10. n-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-014

Order: 95703
Page: 42 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-13 (1.5-2.5')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 14:40

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-014A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-13 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
13. Carbon Disulfide	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
14. Carbon Tetrachloride	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
15. Chlorobenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
16. Chloroethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
17. Chloroform	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
18. Chloromethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U	V+	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
21. Dibromochloromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
22. Dibromomethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
35. Ethylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
37. 2-Hexanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
38. Isopropylbenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
40. Methylene Chloride	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 41. 2-Methylnaphthalene	U	L+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
42. MTBE	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
43. Naphthalene	U	V+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
44. n-Propylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
45. Styrene	U		µg/kg	64	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
47. 1,1,1,2-Tetrachloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
48. Tetrachloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-014

Order: 95703
Page: 43 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-13 (1.5-2.5')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 14:40

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-014A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-13 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
53. Trichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
59. Vinyl Chloride	U	B	µg/kg	45	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
60. m&p-Xylene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
61. o-Xylene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 62. Xylenes	U		µg/kg	150	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **95703-014** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8270E Description: **SB-13 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
2. Acenaphthylene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
3. Anthracene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
4. Benzo(a)anthracene (SIM)	470		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
5. Benzo(a)pyrene (SIM)	350		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
6. Benzo(b)fluoranthene (SIM)	510		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
9. Chrysene (SIM)	360		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
11. Fluoranthene (SIM)	640		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
12. Fluorene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
15. Naphthalene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
16. Phenanthrene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
17. Pyrene (SIM)	590		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-015

Order: 95703
 Page: 44 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-14 (4-5')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 14:55

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-015** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-14 (4-5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	11		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-015** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-14 (4-5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	2600		µg/kg	100	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
2. Barium	39000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
3. Cadmium	150		µg/kg	50	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH
4. Chromium	6200		µg/kg	500	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
5. Lead	25000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
6. Selenium	U		µg/kg	200	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-015** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-14 (4-5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	54		µg/kg	50	9.2	04/13/20	PM20D13A	04/14/20	M720D14B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-015A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-14 (4-5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
‡ 2. Acrylonitrile	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
3. Benzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
4. Bromobenzene	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
5. Bromochloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
6. Bromodichloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
7. Bromoform	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
8. Bromomethane	U		µg/kg	200	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
9. 2-Butanone	U		µg/kg	750	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
10. n-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-015

Order: 95703
Page: 45 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-14 (4-5')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 14:55

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-015A **Matrix: Soil/Solid**
Description: SB-14 (4-5')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
13. Carbon Disulfide	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
14. Carbon Tetrachloride	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
15. Chlorobenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
16. Chloroethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
17. Chloroform	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
18. Chloromethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U	V+	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
21. Dibromochloromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
22. Dibromomethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
35. Ethylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
37. 2-Hexanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
38. Isopropylbenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
40. Methylene Chloride	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 41. 2-Methylnaphthalene	U	L+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
42. MTBE	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
43. Naphthalene	U	V+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
44. n-Propylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
45. Styrene	U		µg/kg	63	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
47. 1,1,1,2-Tetrachloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
48. Tetrachloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-015

Order: 95703
Page: 46 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-14 (4-5')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 14:55

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-015A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-14 (4-5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
53. Trichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
59. Vinyl Chloride	U	B	µg/kg	44	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
60. m&p-Xylene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
61. o-Xylene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 62. Xylenes	U		µg/kg	150	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **95703-015** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8270E Description: **SB-14 (4-5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
3. Anthracene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
6. Benzo(b)fluoranthene (SIM)	360		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
9. Chrysene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
11. Fluoranthene (SIM)	620		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
12. Fluorene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
15. Naphthalene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
16. Phenanthrene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
17. Pyrene (SIM)	560		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-016

Order: 95703
 Page: 47 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: Dup2-S	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: NA

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-016** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **Dup2-S**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	11		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-016** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **Dup2-S**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	2600		µg/kg	100	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
2. Barium	31000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
3. Cadmium	97		µg/kg	50	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH
4. Chromium	6000		µg/kg	500	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
5. Lead	16000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
6. Selenium	U		µg/kg	200	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-016** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **Dup2-S**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	51		µg/kg	50	9.3	04/13/20	PM20D13A	04/14/20	M720D14B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-016A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **Dup2-S**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
‡ 2. Acrylonitrile	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
3. Benzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
4. Bromobenzene	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
5. Bromochloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
6. Bromodichloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
7. Bromoform	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
8. Bromomethane	U		µg/kg	200	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
9. 2-Butanone	U		µg/kg	750	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
10. n-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-016

Order: 95703
Page: 48 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: Dup2-S	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: NA

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-016A **Matrix: Soil/Solid**
Description: Dup2-S

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
13. Carbon Disulfide	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
14. Carbon Tetrachloride	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
15. Chlorobenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
16. Chloroethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
17. Chloroform	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
18. Chloromethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U	V+	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
21. Dibromochloromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
22. Dibromomethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
35. Ethylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
37. 2-Hexanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
38. Isopropylbenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
40. Methylene Chloride	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 41. 2-Methylnaphthalene	U	L+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
42. MTBE	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
43. Naphthalene	U	V+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
44. n-Propylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
45. Styrene	U		µg/kg	63	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
47. 1,1,1,2-Tetrachloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
48. Tetrachloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-016

Order: 95703
Page: 49 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: Dup2-S	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: NA

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-016A **Matrix: Soil/Solid**
Description: Dup2-S

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
53. Trichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
59. Vinyl Chloride	U	B	µg/kg	44	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
60. m&p-Xylene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
61. o-Xylene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 62. Xylenes	U		µg/kg	150	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270E

Aliquot ID: 95703-016 **Matrix: Soil/Solid**
Description: Dup2-S

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
2. Acenaphthylene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
3. Anthracene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
9. Chrysene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
11. Fluoranthene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
12. Fluorene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
15. Naphthalene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
16. Phenanthrene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
17. Pyrene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-017

Order: 95703
 Page: 50 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-15 (3-4')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 15:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-017** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-15 (3-4')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	10		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-017** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-15 (3-4')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	5400		µg/kg	100	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
2. Barium	54000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
3. Cadmium	300		µg/kg	50	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH
4. Chromium	14000		µg/kg	500	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
5. Lead	55000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
6. Selenium	U		µg/kg	200	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-017** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-15 (3-4')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		µg/kg	50	8.9	04/13/20	PM20D13A	04/14/20	M720D14B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-017A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-15 (3-4')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
‡ 2. Acrylonitrile	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
3. Benzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
4. Bromobenzene	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
5. Bromochloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
6. Bromodichloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
7. Bromoform	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
8. Bromomethane	U		µg/kg	200	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
9. 2-Butanone	U		µg/kg	750	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
10. n-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-017

Order: 95703
Page: 51 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-15 (3-4')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 15:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-017A **Matrix: Soil/Solid**
Description: SB-15 (3-4')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
13. Carbon Disulfide	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
14. Carbon Tetrachloride	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
15. Chlorobenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
16. Chloroethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
17. Chloroform	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
18. Chloromethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U	V+	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
21. Dibromochloromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
22. Dibromomethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
35. Ethylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
37. 2-Hexanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
38. Isopropylbenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
40. Methylene Chloride	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 41. 2-Methylnaphthalene	U	L+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
42. MTBE	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
43. Naphthalene	U	V+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
44. n-Propylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
45. Styrene	U		µg/kg	60	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
48. Tetrachloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-017

Order: 95703
Page: 52 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-15 (3-4')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 15:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-017A **Matrix: Soil/Solid**
Description: SB-15 (3-4')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
53. Trichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
59. Vinyl Chloride	U	B	µg/kg	42	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
60. m&p-Xylene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
61. o-Xylene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 62. Xylenes	U		µg/kg	150	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270E

Aliquot ID: 95703-017 **Matrix: Soil/Solid**
Description: SB-15 (3-4')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
3. Anthracene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
4. Benzo(a)anthracene (SIM)	450		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
5. Benzo(a)pyrene (SIM)	400		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
6. Benzo(b)fluoranthene (SIM)	560		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
9. Chrysene (SIM)	390		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
11. Fluoranthene (SIM)	860		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
12. Fluorene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
15. Naphthalene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
16. Phenanthrene (SIM)	540		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
17. Pyrene (SIM)	840		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-018

Order: 95703
Page: 53 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-16 (7-8')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 15:35

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-018** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-16 (7-8')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	19		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-018** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-16 (7-8')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	6000		µg/kg	100	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
2. Barium	78000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
3. Cadmium	400		µg/kg	50	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH
4. Chromium	15000		µg/kg	500	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
5. Lead	80000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
6. Selenium	390		µg/kg	200	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-018** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-16 (7-8')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	120		µg/kg	50	8.8	04/13/20	PM20D13A	04/14/20	M720D14B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-018A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-16 (7-8')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
‡ 2. Acrylonitrile	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
3. Benzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
4. Bromobenzene	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
5. Bromochloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
6. Bromodichloromethane	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
7. Bromoform	U		µg/kg	100	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
8. Bromomethane	U		µg/kg	200	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
9. 2-Butanone	U		µg/kg	750	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
10. n-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/10/20	V120D10A	04/10/20	V120D10A	ANB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-018

Order: 95703
Page: 54 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-16 (7-8')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 15:35

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-018A **Matrix: Soil/Solid**
Description: SB-16 (7-8')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
13. Carbon Disulfide	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
14. Carbon Tetrachloride	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
15. Chlorobenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
16. Chloroethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
17. Chloroform	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
18. Chloromethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U	V+	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
21. Dibromochloromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
22. Dibromomethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
35. Ethylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
37. 2-Hexanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
38. Isopropylbenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
40. Methylene Chloride	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 41. 2-Methylnaphthalene	U	L+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
42. MTBE	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
43. Naphthalene	U	V+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
44. n-Propylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
45. Styrene	U		µg/kg	71	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
48. Tetrachloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-018

Order: 95703
Page: 55 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-16 (7-8')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 15:35

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-018A **Matrix: Soil/Solid**
Description: SB-16 (7-8')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
50. 1,2,4-Trichlorobenzene	U		µg/kg	270	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
53. Trichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
59. Vinyl Chloride	U	B	µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
60. m&p-Xylene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
61. o-Xylene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 62. Xylenes	U		µg/kg	150	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270E

Aliquot ID: 95703-018 **Matrix: Soil/Solid**
Description: SB-16 (7-8')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.5	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
2. Acenaphthylene (SIM)	U		µg/kg	330	1.5	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
3. Anthracene (SIM)	U		µg/kg	330	1.5	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.5	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.5	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.5	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.5	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.5	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
9. Chrysene (SIM)	U		µg/kg	330	1.5	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.5	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
11. Fluoranthene (SIM)	U		µg/kg	330	1.5	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
12. Fluorene (SIM)	U		µg/kg	330	1.5	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.5	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.5	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
15. Naphthalene (SIM)	U		µg/kg	330	1.5	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
16. Phenanthrene (SIM)	U		µg/kg	330	1.5	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
17. Pyrene (SIM)	U		µg/kg	330	1.5	04/10/20	PS20D10A	04/10/20	S520D10A	RKB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-019

Order: 95703
Page: 56 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-17 (1-2')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 15:45

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-019** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-17 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	12		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-019** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-17 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	6800		µg/kg	100	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
2. Barium	65000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
3. Cadmium	210		µg/kg	50	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH
4. Chromium	17000		µg/kg	500	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
5. Lead	28000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
6. Selenium	U		µg/kg	200	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-019** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-17 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	130		µg/kg	50	8.6	04/13/20	PM20D13A	04/14/20	M720D14B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-019A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-17 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 2. Acrylonitrile	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
3. Benzene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
4. Bromobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
5. Bromochloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
6. Bromodichloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
7. Bromoform	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
8. Bromomethane	U		µg/kg	200	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
9. 2-Butanone	U		µg/kg	750	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
10. n-Butylbenzene	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
11. sec-Butylbenzene	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-019

Order: 95703
Page: 57 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-17 (1-2')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 15:45

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-019A **Matrix: Soil/Solid**
Description: SB-17 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
13. Carbon Disulfide	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
14. Carbon Tetrachloride	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
15. Chlorobenzene	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
16. Chloroethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
17. Chloroform	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
18. Chloromethane	U		µg/kg	320	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
19. 2-Chlorotoluene	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
21. Dibromochloromethane	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
22. Dibromomethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
26. Dichlorodifluoromethane	U		µg/kg	320	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
27. 1,1-Dichloroethane	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
28. 1,2-Dichloroethane	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
29. 1,1-Dichloroethene	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
30. cis-1,2-Dichloroethene	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
31. trans-1,2-Dichloroethene	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
32. 1,2-Dichloropropane	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
33. cis-1,3-Dichloropropene	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
34. trans-1,3-Dichloropropene	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
35. Ethylbenzene	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
37. 2-Hexanone	U	V+	µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
38. Isopropylbenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
40. Methylene Chloride	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
42. MTBE	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
43. Naphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
44. n-Propylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
45. Styrene	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
47. 1,1,1,2,2-Tetrachloroethane	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
48. Tetrachloroethene	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-019

Order: 95703
Page: 58 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-17 (1-2')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 15:45

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-019A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-17 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
51. 1,1,1-Trichloroethane	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
53. Trichloroethene	U		µg/kg	65	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
54. Trichlorofluoromethane	U	V+	µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
55. 1,2,3-Trichloropropane	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
59. Vinyl Chloride	U		µg/kg	40	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
60. m&p-Xylene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
61. o-Xylene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 62. Xylenes	U		µg/kg	150	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **95703-019** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8270E Description: **SB-17 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
2. Acenaphthylene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
3. Anthracene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
4. Benzo(a)anthracene (SIM)	370		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
6. Benzo(b)fluoranthene (SIM)	370		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
9. Chrysene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
11. Fluoranthene (SIM)	500		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
12. Fluorene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
15. Naphthalene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
16. Phenanthrene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
17. Pyrene (SIM)	440		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-020

Order: 95703
Page: 59 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-18 (1.5-2.5')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 16:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-020** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-18 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	10		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-020** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-18 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	6800		µg/kg	100	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
2. Barium	70000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
3. Cadmium	390		µg/kg	50	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH
4. Chromium	14000		µg/kg	500	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
5. Lead	110000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
6. Selenium	520		µg/kg	200	10	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-020** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-18 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	88		µg/kg	50	8.5	04/13/20	PM20D13A	04/14/20	M720D14B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-020A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-18 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 2. Acrylonitrile	U		µg/kg	120	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
3. Benzene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
4. Bromobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
5. Bromochloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
6. Bromodichloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
7. Bromoform	U		µg/kg	120	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
8. Bromomethane	U		µg/kg	200	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
9. 2-Butanone	U		µg/kg	750	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
10. n-Butylbenzene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
11. sec-Butylbenzene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-020

Order: 95703
 Page: 60 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-18 (1.5-2.5')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 16:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-020A **Matrix: Soil/Solid**
Description: SB-18 (1.5-2.5')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
13. Carbon Disulfide	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
14. Carbon Tetrachloride	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
15. Chlorobenzene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
16. Chloroethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
17. Chloroform	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
18. Chloromethane	U		µg/kg	300	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
19. 2-Chlorotoluene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
21. Dibromochloromethane	U		µg/kg	120	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
22. Dibromomethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
26. Dichlorodifluoromethane	U		µg/kg	300	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
27. 1,1-Dichloroethane	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
28. 1,2-Dichloroethane	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
29. 1,1-Dichloroethene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
30. cis-1,2-Dichloroethene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
31. trans-1,2-Dichloroethene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
32. 1,2-Dichloropropane	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
33. cis-1,3-Dichloropropene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
34. trans-1,3-Dichloropropene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
35. Ethylbenzene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
37. 2-Hexanone	U	V+	µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
38. Isopropylbenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
40. Methylene Chloride	U		µg/kg	120	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
42. MTBE	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
43. Naphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
44. n-Propylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
45. Styrene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
47. 1,1,1,2,2-Tetrachloroethane	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
48. Tetrachloroethene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-020

Order: 95703
 Page: 61 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-18 (1.5-2.5')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 16:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: **95703-020A** Matrix: **Soil/Solid**
 Description: **SB-18 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
51. 1,1,1-Trichloroethane	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
53. Trichloroethene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
54. Trichlorofluoromethane	U	V+	µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
55. 1,2,3-Trichloropropane	U		µg/kg	120	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
59. Vinyl Chloride	U		µg/kg	40	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
60. m&p-Xylene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
61. o-Xylene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 62. Xylenes	U		µg/kg	150	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270E

Aliquot ID: **95703-020** Matrix: **Soil/Solid**
 Description: **SB-18 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
2. Acenaphthylene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
3. Anthracene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
4. Benzo(a)anthracene (SIM)	350		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
6. Benzo(b)fluoranthene (SIM)	400		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
9. Chrysene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
11. Fluoranthene (SIM)	470		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
12. Fluorene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
15. Naphthalene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
16. Phenanthrene (SIM)	U		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
17. Pyrene (SIM)	440		µg/kg	330	10	04/10/20	PS20D10A	04/10/20	S520D10A	RKB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-021

Order: 95703
 Page: 62 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-19 (1-2')	Chain of Custody: 189058
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 16:25

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-021** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-19 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	14		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-021** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-19 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	6200		µg/kg	100	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
2. Barium	69000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
3. Cadmium	380		µg/kg	50	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH
4. Chromium	12000		µg/kg	500	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
5. Lead	120000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
6. Selenium	240		µg/kg	200	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-021** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-19 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	110		µg/kg	50	9.5	04/13/20	PM20D13A	04/14/20	M720D14B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-021A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-19 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 2. Acrylonitrile	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
3. Benzene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
4. Bromobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
5. Bromochloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
6. Bromodichloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
7. Bromoform	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
8. Bromomethane	U		µg/kg	200	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
9. 2-Butanone	U		µg/kg	750	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
10. n-Butylbenzene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
11. sec-Butylbenzene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-021

Order: 95703
 Page: 63 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-19 (1-2')	Chain of Custody: 189058
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 16:25

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-021A **Matrix: Soil/Solid**
Description: SB-19 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
13. Carbon Disulfide	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
14. Carbon Tetrachloride	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
15. Chlorobenzene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
16. Chloroethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
17. Chloroform	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
18. Chloromethane	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
19. 2-Chlorotoluene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
21. Dibromochloromethane	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
22. Dibromomethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
26. Dichlorodifluoromethane	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
27. 1,1-Dichloroethane	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
28. 1,2-Dichloroethane	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
29. 1,1-Dichloroethene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
30. cis-1,2-Dichloroethene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
31. trans-1,2-Dichloroethene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
32. 1,2-Dichloropropane	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
33. cis-1,3-Dichloropropene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
34. trans-1,3-Dichloropropene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
35. Ethylbenzene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
37. 2-Hexanone	U	V+	µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
38. Isopropylbenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
40. Methylene Chloride	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
42. MTBE	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
43. Naphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
44. n-Propylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
45. Styrene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
47. 1,1,1,2,2-Tetrachloroethane	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
48. Tetrachloroethene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-021

Order: 95703
 Page: 64 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-19 (1-2')	Chain of Custody: 189058
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 16:25

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-021A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-19 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
51. 1,1,1-Trichloroethane	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
53. Trichloroethene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
54. Trichlorofluoromethane	U	V+	µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
55. 1,2,3-Trichloropropane	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
59. Vinyl Chloride	U		µg/kg	40	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
60. m&p-Xylene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
61. o-Xylene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 62. Xylenes	U		µg/kg	150	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **95703-021** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8270E** Description: **SB-19 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
3. Anthracene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
4. Benzo(a)anthracene (SIM)	560		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
5. Benzo(a)pyrene (SIM)	460		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
6. Benzo(b)fluoranthene (SIM)	660		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
9. Chrysene (SIM)	490		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
11. Fluoranthene (SIM)	1100		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
12. Fluorene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
15. Naphthalene (SIM)	U		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
16. Phenanthrene (SIM)	660		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
17. Pyrene (SIM)	1200		µg/kg	330	1.0	04/10/20	PS20D10A	04/10/20	S520D10A	RKB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-022

Order: 95703
 Page: 65 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-20 (2-3')	Chain of Custody: 189058
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 16:40

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-022** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-20 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	12		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-022** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-20 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	8500		µg/kg	100	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
2. Barium	81000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
3. Cadmium	1900		µg/kg	50	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH
4. Chromium	13000		µg/kg	500	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
5. Lead	350000		µg/kg	1000	100	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
6. Selenium	500		µg/kg	200	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
7. Silver	190		µg/kg	100	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-022** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-20 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	120		µg/kg	50	8.6	04/13/20	PM20D13A	04/14/20	M720D14B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-022A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-20 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
‡ 2. Acrylonitrile	U		µg/kg	150	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
3. Benzene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
4. Bromobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
5. Bromochloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
6. Bromodichloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
7. Bromoform	U		µg/kg	150	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
8. Bromomethane	U		µg/kg	200	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
9. 2-Butanone	U		µg/kg	750	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
10. n-Butylbenzene	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
11. sec-Butylbenzene	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-022

Order: 95703
Page: 66 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-20 (2-3')	Chain of Custody: 189058
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 16:40

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-022A **Matrix: Soil/Solid**
Description: SB-20 (2-3')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
13. Carbon Disulfide	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
14. Carbon Tetrachloride	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
15. Chlorobenzene	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
16. Chloroethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
17. Chloroform	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
18. Chloromethane	U		µg/kg	370	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
19. 2-Chlorotoluene	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
21. Dibromochloromethane	U		µg/kg	150	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
22. Dibromomethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
26. Dichlorodifluoromethane	U		µg/kg	370	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
27. 1,1-Dichloroethane	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
28. 1,2-Dichloroethane	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
29. 1,1-Dichloroethene	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
30. cis-1,2-Dichloroethene	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
31. trans-1,2-Dichloroethene	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
32. 1,2-Dichloropropane	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
33. cis-1,3-Dichloropropene	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
34. trans-1,3-Dichloropropene	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
35. Ethylbenzene	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
37. 2-Hexanone	U	V+	µg/kg	2500	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
38. Isopropylbenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
40. Methylene Chloride	U		µg/kg	150	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
42. MTBE	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
43. Naphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
44. n-Propylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
45. Styrene	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
47. 1,1,1,2,2-Tetrachloroethane	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
48. Tetrachloroethene	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-022

Order: 95703
 Page: 67 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-20 (2-3')	Chain of Custody: 189058
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 16:40

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-022A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-20 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
49. Toluene	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
51. 1,1,1-Trichloroethane	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
53. Trichloroethene	U		µg/kg	75	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
54. Trichlorofluoromethane	U	V+	µg/kg	100	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
55. 1,2,3-Trichloropropane	U		µg/kg	150	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
59. Vinyl Chloride	U		µg/kg	40	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
60. m&p-Xylene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
61. o-Xylene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM
‡ 62. Xylenes	U		µg/kg	150	1.0	04/13/20	VJ20D13A	04/14/20	VJ20D13A	JLM

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **95703-022** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8270E** Description: **SB-20 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Acenaphthene (SIM)	U		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
2. Acenaphthylene (SIM)	U		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
3. Anthracene (SIM)	U		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
4. Benzo(a)anthracene (SIM)	700		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
5. Benzo(a)pyrene (SIM)	480		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
6. Benzo(b)fluoranthene (SIM)	730		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
7. Benzo(ghi)perylene (SIM)	430		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
9. Chrysene (SIM)	490		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
11. Fluoranthene (SIM)	960		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
12. Fluorene (SIM)	U		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
13. Indeno(1,2,3-cd)pyrene (SIM)	440		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
15. Naphthalene (SIM)	U		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
16. Phenanthrene (SIM)	500		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
17. Pyrene (SIM)	860		µg/kg	330	20	04/10/20	PS20D10A	04/10/20	S520D10A	RKB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-023

Order: 95703
 Page: 68 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-21 (3-4')	Chain of Custody: 189058
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 17:05

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-023** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-21 (3-4')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	14		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

RCRA Elements by ICP/MS Aliquot ID: **95703-023** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-21 (3-4')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	12000		µg/kg	100	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
2. Barium	64000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
3. Cadmium	410		µg/kg	50	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH
4. Chromium	14000		µg/kg	500	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
5. Lead	73000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
6. Selenium	950		µg/kg	200	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95703-023** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-21 (3-4')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	200		µg/kg	50	8.5	04/13/20	PM20D13A	04/14/20	M720D14B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-023A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-21 (3-4')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 2. Acrylonitrile	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
3. Benzene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
4. Bromobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
5. Bromochloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
6. Bromodichloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
7. Bromoform	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
8. Bromomethane	U		µg/kg	200	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
9. 2-Butanone	U		µg/kg	750	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
10. n-Butylbenzene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
11. sec-Butylbenzene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-023

Order: 95703
 Page: 69 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-21 (3-4')	Chain of Custody: 189058
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 17:05

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95703-023A **Matrix: Soil/Solid**
Description: SB-21 (3-4')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
13. Carbon Disulfide	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
14. Carbon Tetrachloride	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
15. Chlorobenzene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
16. Chloroethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
17. Chloroform	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
18. Chloromethane	U		µg/kg	340	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
19. 2-Chlorotoluene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
21. Dibromochloromethane	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
22. Dibromomethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
23. 1,2-Dichlorobenzene	260		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
26. Dichlorodifluoromethane	U		µg/kg	340	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
27. 1,1-Dichloroethane	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
28. 1,2-Dichloroethane	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
29. 1,1-Dichloroethene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
30. cis-1,2-Dichloroethene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
31. trans-1,2-Dichloroethene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
32. 1,2-Dichloropropane	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
33. cis-1,3-Dichloropropene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
34. trans-1,3-Dichloropropene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
35. Ethylbenzene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
37. 2-Hexanone	U	V+	µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
38. Isopropylbenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
40. Methylene Chloride	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
42. MTBE	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
43. Naphthalene	720		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
44. n-Propylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
45. Styrene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
47. 1,1,1,2,2-Tetrachloroethane	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
48. Tetrachloroethene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-023

Order: 95703
Page: 70 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-21 (3-4')	Chain of Custody: 189058
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 17:05

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: **95703-023A** Matrix: **Soil/Solid**
Description: **SB-21 (3-4')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
51. 1,1,1-Trichloroethane	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
53. Trichloroethene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
54. Trichlorofluoromethane	U	V+	µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
55. 1,2,3-Trichloropropane	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
59. Vinyl Chloride	U		µg/kg	40	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
60. m&p-Xylene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
61. o-Xylene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 62. Xylenes	U		µg/kg	150	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270E

Aliquot ID: **95703-023** Matrix: **Soil/Solid**
Description: **SB-21 (3-4')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	360		µg/kg	330	15	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
2. Acenaphthylene (SIM)	350		µg/kg	330	15	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
3. Anthracene (SIM)	790		µg/kg	330	15	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
4. Benzo(a)anthracene (SIM)	2500		µg/kg	330	15	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
5. Benzo(a)pyrene (SIM)	2600		µg/kg	330	15	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
6. Benzo(b)fluoranthene (SIM)	4000		µg/kg	330	15	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
7. Benzo(ghi)perylene (SIM)	2000		µg/kg	330	15	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
8. Benzo(k)fluoranthene (SIM)	1100		µg/kg	330	15	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
9. Chrysene (SIM)	2300		µg/kg	330	15	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
10. Dibenzo(a,h)anthracene (SIM)	510		µg/kg	330	15	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
11. Fluoranthene (SIM)	4000		µg/kg	330	15	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
12. Fluorene (SIM)	U		µg/kg	330	15	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
13. Indeno(1,2,3-cd)pyrene (SIM)	2200		µg/kg	330	15	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
14. 2-Methylnaphthalene (SIM)	540		µg/kg	330	15	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
15. Naphthalene (SIM)	1600		µg/kg	330	15	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
16. Phenanthrene (SIM)	2000		µg/kg	330	15	04/10/20	PS20D10A	04/10/20	S520D10A	RKB
17. Pyrene (SIM)	3400		µg/kg	330	15	04/10/20	PS20D10A	04/10/20	S520D10A	RKB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-024

Order: 95703
 Page: 71 of 73
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: Meth Blank	Chain of Custody: 189058
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Blank: Methanol	Collect Time: NA

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: **95703-024** Matrix: **Blank: Methanol**
 Description: **Meth Blank**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 2. Acrylonitrile	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
3. Benzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
4. Bromobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
5. Bromochloromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
6. Bromodichloromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
7. Bromoform	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
8. Bromomethane	U		µg/kg	200	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
9. 2-Butanone	U		µg/kg	750	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
10. n-Butylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
13. Carbon Disulfide	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
14. Carbon Tetrachloride	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
15. Chlorobenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
16. Chloroethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
17. Chloroform	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
18. Chloromethane	U	B	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U	V+	µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
21. Dibromochloromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
22. Dibromomethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
35. Ethylbenzene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
37. 2-Hexanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-024

Order: 95703
Page: 72 of 73
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: Meth Blank	Chain of Custody: 189058
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Blank: Methanol	Collect Time: NA

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95703-024** Matrix: **Blank: Methanol**
Method: EPA 5035A/EPA 8260D Description: **Meth Blank**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
38. Isopropylbenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
40. Methylene Chloride	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 41. 2-Methylnaphthalene	U	L+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
42. MTBE	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
43. Naphthalene	U	V+	µg/kg	330	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
44. n-Propylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
45. Styrene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
48. Tetrachloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
49. Toluene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
53. Trichloroethene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
59. Vinyl Chloride	U	B	µg/kg	40	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
60. m&p-Xylene	U		µg/kg	100	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
61. o-Xylene	U		µg/kg	50	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB
‡ 62. Xylenes	U		µg/kg	150	1.0	04/10/20	VI20D10A	04/10/20	VI20D10A	ANB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584

Definitions/ Qualifiers:

- A:** Spike recovery or precision unusable due to dilution.
- B:** The analyte was detected in the associated method blank.
- E:** The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J:** The concentration is an estimated value.
- M:** Modified Method
- U:** The analyte was not detected at or above the reporting limit.
- X:** Matrix Interference has resulted in a raised reporting limit or distorted result.
- W:** Results reported on a wet-weight basis.
- *:** Value reported is outside QC limits

Exception Summary:

- B** : Analyte is found in the associated method blank as well as in the sample.
- F+** : Recovery from the spiked aliquot exceeds the upper control limit (matrix spike or matrix spike duplicate).
- L+** : Recovery in the associated laboratory sample (LCS) exceeds the upper control limit. Results may be biased high.
- V+** : Recovery in the associated continuing calibration verification sample (CCV) exceeds the upper control limit. Results may be biased high.

Analysis Locations:

All analyses performed in Holt.



Accreditation Number(s):

T104704518-19-8 (TX)

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Wednesday, April 29, 2020

Fibertec Project Number: 95703 Supplemental
Project Identification: Field Street and East Grand Boulevard (1-11284) /1-11284
Submittal Date: 04/07/2020

Mr. Brian Kuberski
Applied Science & Technology, Inc. - Brighton
10448 Citation
Suite 100
Brighton, MI 48116

Dear Mr. Kuberski,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

By Sharon Rakow at 4:22 PM, Apr 29, 2020

For Daryl P. Strandbergh
Laboratory Director

Enclosures

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-002

Order: 95703
Page: 2 of 16
Date: 04/29/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-2 (1-2')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 10:05

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-002** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-2 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	20		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

Lead, MDEQ Criteria Aliquot ID: **95703-002B** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-2 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Lead, Coarse Fraction	96600		µg/kg	1000	100	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
2. Lead, Fine Fraction	282000		µg/kg	1000	200	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
3. Lead, Total (Calculated)	104000		µg/kg	1000	1.0	NA	NA	04/27/20	NA	JLH
‡ 4. Percent Total Solids	79.0		%	0.1	1.0	NA	NA	04/27/20	NA	JLH

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-004

Order: 95703
 Page: 3 of 16
 Date: 04/29/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-3 (4.5-5.5')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 10:35

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-004** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-3 (4.5-5.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	17		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

Lead, MDEQ Criteria Aliquot ID: **95703-004B** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-3 (4.5-5.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Lead, Coarse Fraction	295000		µg/kg	1000	100	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
2. Lead, Fine Fraction	302000		µg/kg	1000	200	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
3. Lead, Total (Calculated)	296000		µg/kg	1000	1.0	NA	NA	04/27/20	NA	JLH
‡ 4. Percent Total Solids	84.0		%	0.1	1.0	NA	NA	04/27/20	NA	JLH

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-005

Order: 95703
 Page: 4 of 16
 Date: 04/29/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-4 (1-2')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 10:55

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-005** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-4 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	12		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

Lead, MDEQ Criteria Aliquot ID: **95703-005B** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-4 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Lead, Coarse Fraction	221000		µg/kg	1000	100	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
2. Lead, Fine Fraction	113000		µg/kg	1000	200	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
3. Lead, Total (Calculated)	217000		µg/kg	1000	1.0	NA	NA	04/27/20	NA	JLH
‡ 4. Percent Total Solids	89.1		%	0.1	1.0	NA	NA	04/27/20	NA	JLH

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-006

Order: 95703
 Page: 5 of 16
 Date: 04/29/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-5 (1-2')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-006** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-5 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	12		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

Lead, MDEQ Criteria Aliquot ID: **95703-006B** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-5 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Lead, Coarse Fraction	840000		µg/kg	1000	100	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
2. Lead, Fine Fraction	1020000		µg/kg	1000	200	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
3. Lead, Total (Calculated)	868000		µg/kg	1000	1.0	NA	NA	04/27/20	NA	JLH
‡ 4. Percent Total Solids	89.0		%	0.1	1.0	NA	NA	04/27/20	NA	JLH

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-007

Order: 95703
Page: 6 of 16
Date: 04/29/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-6 (1.5-2.5')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-007** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-6 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	14		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

Lead, MDEQ Criteria Aliquot ID: **95703-007B** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-6 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Lead, Coarse Fraction	108000		µg/kg	1000	100	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
2. Lead, Fine Fraction	125000		µg/kg	1000	200	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
3. Lead, Total (Calculated)	109000		µg/kg	1000	1.0	NA	NA	04/27/20	NA	JLH
‡ 4. Percent Total Solids	86.9		%	0.1	1.0	NA	NA	04/27/20	NA	JLH

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-008

Order: 95703
 Page: 7 of 16
 Date: 04/29/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-7 (1-2')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:50

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-008** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-7 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	15		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

Lead, MDEQ Criteria Aliquot ID: **95703-008B** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-7 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Lead, Coarse Fraction	101000		µg/kg	1000	100	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
2. Lead, Fine Fraction	176000		µg/kg	1000	200	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
3. Lead, Total (Calculated)	102000		µg/kg	1000	1.0	NA	NA	04/27/20	NA	JLH
‡ 4. Percent Total Solids	87.3		%	0.1	1.0	NA	NA	04/27/20	NA	JLH

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-010

Order: 95703
 Page: 8 of 16
 Date: 04/29/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-9 (2-3')	Chain of Custody: 189060
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 13:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-010** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-9 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	14		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

Lead, MDEQ Criteria Aliquot ID: **95703-010B** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-9 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Lead, Coarse Fraction	1110000		µg/kg	1000	200	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
2. Lead, Fine Fraction	2750000		µg/kg	2000	400	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
3. Lead, Total (Calculated)	1180000		µg/kg	1000	1.0	NA	NA	04/27/20	NA	JLH
‡ 4. Percent Total Solids	83.0		%	0.1	1.0	NA	NA	04/27/20	NA	JLH

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-012

Order: 95703
 Page: 9 of 16
 Date: 04/29/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-11 (3-3.5')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 13:50

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-012** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-11 (3-3.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	10		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

Lead, MDEQ Criteria Aliquot ID: **95703-012B** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-11 (3-3.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Lead, Coarse Fraction	366000		µg/kg	1000	100	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
2. Lead, Fine Fraction	249000		µg/kg	1000	200	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
3. Lead, Total (Calculated)	352000		µg/kg	1000	1.0	NA	NA	04/27/20	NA	JLH
‡ 4. Percent Total Solids	90.5		%	0.1	1.0	NA	NA	04/27/20	NA	JLH

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-013

Order: 95703
 Page: 10 of 16
 Date: 04/29/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-12 (1-2')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 14:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-013** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-12 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	10		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

Lead, MDEQ Criteria Aliquot ID: **95703-013B** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-12 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Lead, Coarse Fraction	140000		µg/kg	1000	100	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
2. Lead, Fine Fraction	103000		µg/kg	1000	200	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
3. Lead, Total (Calculated)	139000		µg/kg	1000	1.0	NA	NA	04/27/20	NA	JLH
‡ 4. Percent Total Solids	89.4		%	0.1	1.0	NA	NA	04/27/20	NA	JLH

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-014

Order: 95703
 Page: 11 of 16
 Date: 04/29/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-13 (1.5-2.5')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 14:40

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-014** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-13 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	12		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

Lead, MDEQ Criteria Aliquot ID: **95703-014B** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-13 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Lead, Coarse Fraction	117000		µg/kg	1000	100	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
2. Lead, Fine Fraction	292000		µg/kg	1000	200	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
3. Lead, Total (Calculated)	127000		µg/kg	1000	1.0	NA	NA	04/27/20	NA	JLH
‡ 4. Percent Total Solids	88.4		%	0.1	1.0	NA	NA	04/27/20	NA	JLH

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-018

Order: 95703
 Page: 12 of 16
 Date: 04/29/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-16 (7-8')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 15:35

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-018** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-16 (7-8')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	19		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

Lead, MDEQ Criteria Aliquot ID: **95703-018B** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-16 (7-8')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Lead, Coarse Fraction	76200		µg/kg	1000	100	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
2. Lead, Fine Fraction	145000		µg/kg	1000	200	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
3. Lead, Total (Calculated)	79200		µg/kg	1000	1.0	NA	NA	04/27/20	NA	JLH
‡ 4. Percent Total Solids	81.4		%	0.1	1.0	NA	NA	04/27/20	NA	JLH

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-020

Order: 95703
 Page: 13 of 16
 Date: 04/29/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-18 (1.5-2.5')	Chain of Custody: 189059
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 16:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-020** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-18 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	10		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

Lead, MDEQ Criteria Aliquot ID: **95703-020B** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-18 (1.5-2.5')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Lead, Coarse Fraction	176000		µg/kg	1000	100	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
2. Lead, Fine Fraction	263000		µg/kg	1000	200	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
3. Lead, Total (Calculated)	182000		µg/kg	1000	1.0	NA	NA	04/27/20	NA	JLH
‡ 4. Percent Total Solids	87.8		%	0.1	1.0	NA	NA	04/27/20	NA	JLH

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-021

Order: 95703
 Page: 14 of 16
 Date: 04/29/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-19 (1-2')	Chain of Custody: 189058
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 16:25

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-021** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-19 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	14		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

Lead, MDEQ Criteria Aliquot ID: **95703-021B** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-19 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Lead, Coarse Fraction	134000		µg/kg	1000	100	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
2. Lead, Fine Fraction	93100		µg/kg	1000	200	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
3. Lead, Total (Calculated)	132000		µg/kg	1000	1.0	NA	NA	04/27/20	NA	JLH
‡ 4. Percent Total Solids	87.1		%	0.1	1.0	NA	NA	04/27/20	NA	JLH

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95703
Laboratory Sample Number: 95703-022

Order: 95703
 Page: 15 of 16
 Date: 04/29/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-20 (2-3')	Chain of Custody: 189058
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/06/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 16:40

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95703-022** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-20 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	12		%	1	1.0	04/09/20	MC200409	04/10/20	MC200409	DBG

Lead, MDEQ Criteria Aliquot ID: **95703-022B** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-20 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Lead, Coarse Fraction	317000		µg/kg	1000	100	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
2. Lead, Fine Fraction	482000		µg/kg	1000	200	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
3. Lead, Total (Calculated)	322000		µg/kg	1000	1.0	NA	NA	04/27/20	NA	JLH
‡ 4. Percent Total Solids	88.1		%	0.1	1.0	NA	NA	04/27/20	NA	JLH

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584

Definitions/ Qualifiers:

- A:** Spike recovery or precision unusable due to dilution.
- B:** The analyte was detected in the associated method blank.
- E:** The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J:** The concentration is an estimated value.
- M:** Modified Method
- U:** The analyte was not detected at or above the reporting limit.
- X:** Matrix Interference has resulted in a raised reporting limit or distorted result.
- W:** Results reported on a wet-weight basis.
- *:** Value reported is outside QC limits

Exception Summary:

Analysis Locations:

All analyses performed in Holt.



Accreditation Number(s):

T104704518-19-8 (TX)

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory
 1914 Holloway Drive
 Holt, MI 48842
 Phone: 517 699 0345
 Fax: 517 699 0388
 email: lab@fibertec.us

Industrial Hygiene Services, Inc.
 1914 Holloway Drive
 Holt, MI 48842
 Phone: 517 699 0345
 Fax: 517 699 0382
 email: asbestos@fibertecihs.com

Geoprobe
 11766 E. Grand River Rd.
 Brighton, MI 48116
 Phone: 810 220 3300
 Fax: 810 220 3311

Chain of Custody #
189060
 PAGE 1 of 3

Client Name: ASTI Environmental				MATRIX (SEE RIGHT CORNER FOR CODE)	# OF CONTAINERS	PARAMETERS										Matrix Code		Deliverables	
Contact Person: Brian Kubersti						VOCs PNAs PCPA & Metals	S A O P	HOLD SAMPLE	S	Soil	GW	Ground Water	Level 2						
Project Name/ Number: 1-11284									A	Air	SW	Surface Water	Level 3						
Field Street and East Grand Boulevard									O	Oil	WW	Waste Water	Level 4						
Email distribution list: bkubersti@asti-env.com/jefros@asti-env.com									P	Wipe	X	Other: Specify	EDD						
Quote#																			
Purchase Order#																			
Date	Time	Sample #	Client Sample Descriptor																
4/6/20	0915		SB-1 (7-8')	S	2	X	X	X											
	1005		SB-2 (1-2')	1	1	X	X	X											
	—		Dupl-5			X	X	X											
	1035		SB-3 (4.5-5.5')			X	X	X											
	1055		SB-4 (1-2')			X	X	X											
	1110		SB-5 (1-2')			X	X	X											
	1130		SB-6 (1.5-2.5')			X	X	X											
	1150		SB-7 (1-2')			X	X	X											
	1250		SB-8 (1-2')			X	X	X											
V.	1310		SB-9 (2-3')	V	V	X	X	X											
Comments:																			
Sampled/Relinquished By: Jeremy Etroc				Date/Time: 4/7/20 12:00				Received By: Kris Scott											
Relinquished By: Kris Scott				Date/Time:				Received By:											
Relinquished By: Bob [Signature]				Date/Time: 4/7/20 15:15				Received By Laboratory: [Signature] 4/7/20 2:00											
Turnaround Time ALL RESULTS WILL BE SENT BY THE END OF THE BUSINESS DAY																			
LAB USE ONLY																			
<input type="checkbox"/> 1 bus. day <input type="checkbox"/> 2 bus. days <input type="checkbox"/> 3 bus. days <input type="checkbox"/> 4 bus. days <input checked="" type="checkbox"/> 5-7 bus. days (standard) Other (specify time/date requirement): _____												Fibertec project number: 95 703 Temperature upon receipt at Lab: 4.50C						Received On Ice	
Please see back for terms and conditions																			

Client Name: ASTI Environmental				MATRIX (SEE RIGHT CORNER FOR CODE)	# OF CONTAINERS	PARAMETERS										Matrix Code		Deliverables			
Contact Person: Brian Kuberski						HOLD SAMPLE	VOCs	PNAs	PCPA & Metals	S	Soil	GW	Ground Water						Level 2		
Project Name/ Number: 1-11284										A	Air	SW	Surface Water								Level 3
Field Street and East Grand Boulevard										O	Oil	WW	Waste Water								Level 4
Email distribution list: bkuberski@asti-env.com / jefros@asti-env.com										P	Wipe	X	Other: Specify								EDD
Quote#																					
Purchase Order#																					
Date	Time	Sample #	Client Sample Descriptor																		
	1330	SB-10	(1-2')	5	2	X	X	X	X												
	1350	SB-11	(3-3.5')			X	X	X	X												
	1410	SB-12	(1-2')			X	X	X	X												
	1440	SB-13	(1.5-2.5')			X	X	X	X												
	1455	SB-14	(4-5')			X	X	X	X												
	—	Dup 2-S				X	X	X	X												
	1510	SB-15	(3-4')			X	X	X	X												
	1535	SB-16	(7-8')			X	X	X	X												
	1545	SB-17	(1-2')			X	X	X	X												
	1600	SB-18	(1.5-2.5')	✓	✓	X	X	X	X												

Comments:

Sampled/Relinquished By: Jeremy Etras	Date/Time: 4/7/20 1220	Received By: Russ Scott
Relinquished By: Russ Scott	Date/Time:	Received By: Wade A. Shade 4/7/20 2:00
Relinquished By: Wade A. Shade	Date/Time: 4/7/20 15:15	Received By Laboratory: [Signature]

Turnaround Time ALL RESULTS WILL BE SENT BY THE END OF THE BUSINESS DAY

1 bus. day
 2 bus. days
 3 bus. days
 4 bus. days
 5-7 bus. days (standard)
 Other (specify time/date requirement): _____

LAB USE ONLY

Fibertec project number: **95703**

Temperature upon receipt at Lab: **4.5°C**

Received
On Ice

Client Name: <i>ASTI Environmental</i>				MATRIX (SEE RIGHT CORNER FOR CODE)	# OF CONTAINERS	VOCs	PNA	RCRA 8 Metals	PARAMETERS										Matrix Code			Deliverables	
Contact Person: <i>Brian Kuberski</i>									S Soil	A Air	O Oil	P Wipe	GW Ground Water	SW Surface Water	WW Waste Water	X Other: Specify	Level 2						
Project Name/ Number: <i>1-11284</i>																	Level 3						
Field street and East Grand Boulevard									Level 4														
Email distribution list: <i>bkuberski@</i>									EDD														
Quote#									Remarks:														
Purchase Order#																							
Date	Time	Sample #	Client Sample Descriptor																				
<i>4/6/20</i>	<i>1625</i>		<i>SB-19 (1-2')</i>	<i>5</i>	<i>2</i>	<i>X</i>	<i>X</i>	<i>X</i>															
	<i>1640</i>		<i>SB-20 (2-3')</i>	<i>5</i>	<i>2</i>	<i>X</i>	<i>X</i>	<i>X</i>															
<i>✓</i>	<i>1705</i>		<i>SB-21 (3-4')</i>	<i>5</i>	<i>2</i>	<i>X</i>	<i>X</i>	<i>X</i>															
			<i>Meth Blank</i>	<i>5</i>	<i>1</i>	<i>X</i>																	

Comments:

Sampled/Relinquished By:	Date/ Time	Received By:
Relinquished By: <i>Jeremy Gross</i>	Date/ Time: <i>4/7/20 1220</i>	Received By: <i>Gross Scott</i>
Relinquished By: <i>Miss Scott</i>	Date/ Time	Received By Laboratory: <i>Robert Shuck 4/7/20 2:00</i>

Turnaround Time ALL RESULTS WILL BE SENT BY THE END OF THE BUSINESS DAY

Robert Shuck 4/7/20 13:15

1 bus. day 2 bus. days 3 bus. days 4 bus. days

5-7 bus. days (standard) Other (specify time/date requirement): _____

Fibertec project number: *95703*

Temperature upon receipt at Lab: *4.50C*

Received On Ice



Thursday, April 16, 2020

Fibertec Project Number: 95726
Project Identification: Field Street and East Grand Boulevard (1-11284) /1-11284
Submittal Date: 04/08/2020

Mr. Jeremy Efros
Applied Science & Technology, Inc. - Brighton
10448 Citation
Suite 100
Brighton, MI 48116

Dear Mr. Efros,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

A handwritten signature in black ink that reads "Rikki Lott".

By Rikki Lott at 12:33 PM, Apr 16, 2020

For Daryl P. Strandbergh
Laboratory Director

Enclosures

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-001

Order: 95726
Page: 2 of 33
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-22 (9-10')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 09:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95726-001** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-22 (9-10')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	11		%	1	1.0	04/10/20	MC200410	04/13/20	MC200410	DBG

RCRA Elements by ICP/MS Aliquot ID: **95726-001** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-22 (9-10')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	7600		µg/kg	100	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
2. Barium	53000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
3. Cadmium	190		µg/kg	50	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH
4. Chromium	18000		µg/kg	500	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
5. Lead	8400		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
6. Selenium	U		µg/kg	200	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95726-001** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-22 (9-10')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		µg/kg	50	9.6	04/13/20	PM20D13A	04/14/20	M720D14B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95726-001A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-22 (9-10')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 2. Acrylonitrile	U		µg/kg	120	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
3. Benzene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
4. Bromobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
5. Bromochloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
6. Bromodichloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
7. Bromoform	U		µg/kg	120	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
8. Bromomethane	U		µg/kg	200	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
9. 2-Butanone	U		µg/kg	750	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
10. n-Butylbenzene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
11. sec-Butylbenzene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-001

Order: 95726
Page: 3 of 33
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-22 (9-10')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 09:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95726-001A **Matrix: Soil/Solid**
Description: SB-22 (9-10')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
13. Carbon Disulfide	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
14. Carbon Tetrachloride	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
15. Chlorobenzene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
16. Chloroethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
17. Chloroform	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
18. Chloromethane	U		µg/kg	300	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
19. 2-Chlorotoluene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
21. Dibromochloromethane	U		µg/kg	120	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
22. Dibromomethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
26. Dichlorodifluoromethane	U		µg/kg	300	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
27. 1,1-Dichloroethane	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
28. 1,2-Dichloroethane	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
29. 1,1-Dichloroethene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
30. cis-1,2-Dichloroethene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
31. trans-1,2-Dichloroethene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
32. 1,2-Dichloropropane	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
33. cis-1,3-Dichloropropene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
34. trans-1,3-Dichloropropene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
35. Ethylbenzene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
37. 2-Hexanone	U	V+	µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
38. Isopropylbenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
40. Methylene Chloride	U		µg/kg	120	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
42. MTBE	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
43. Naphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
44. n-Propylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
45. Styrene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
47. 1,1,1,2,2-Tetrachloroethane	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
48. Tetrachloroethene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-001

Order: 95726
Page: 4 of 33
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-22 (9-10')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 09:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95726-001A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-22 (9-10')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
49. Toluene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
51. 1,1,1-Trichloroethane	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
53. Trichloroethene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
54. Trichlorofluoromethane	U	V+	µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
55. 1,2,3-Trichloropropane	U		µg/kg	120	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
59. Vinyl Chloride	U		µg/kg	40	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
60. m&p-Xylene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
61. o-Xylene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 62. Xylenes	U		µg/kg	150	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **95726-001** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8270E Description: **SB-22 (9-10')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
3. Anthracene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
9. Chrysene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
12. Fluorene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
15. Naphthalene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
16. Phenanthrene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
17. Pyrene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-002

Order: 95726
 Page: 5 of 33
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-23 (2-3')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 10:05

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95726-002** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-23 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	12		%	1	1.0	04/10/20	MC200410	04/13/20	MC200410	DBG

RCRA Elements by ICP/MS Aliquot ID: **95726-002** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-23 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	9100		µg/kg	100	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
2. Barium	140000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
3. Cadmium	440		µg/kg	50	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH
4. Chromium	15000		µg/kg	500	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
5. Lead	89000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
6. Selenium	220		µg/kg	200	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95726-002** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-23 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	120		µg/kg	50	9.3	04/13/20	PM20D13A	04/14/20	M720D14B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95726-002A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-23 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 2. Acrylonitrile	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
3. Benzene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
4. Bromobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
5. Bromochloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
6. Bromodichloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
7. Bromoform	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
8. Bromomethane	U		µg/kg	200	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
9. 2-Butanone	U		µg/kg	750	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
10. n-Butylbenzene	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
11. sec-Butylbenzene	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-002

Order: 95726
Page: 6 of 33
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-23 (2-3')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 10:05

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95726-002A **Matrix: Soil/Solid**
Description: SB-23 (2-3')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
13. Carbon Disulfide	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
14. Carbon Tetrachloride	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
15. Chlorobenzene	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
16. Chloroethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
17. Chloroform	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
18. Chloromethane	U		µg/kg	320	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
19. 2-Chlorotoluene	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
21. Dibromochloromethane	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
22. Dibromomethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
26. Dichlorodifluoromethane	U		µg/kg	320	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
27. 1,1-Dichloroethane	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
28. 1,2-Dichloroethane	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
29. 1,1-Dichloroethene	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
30. cis-1,2-Dichloroethene	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
31. trans-1,2-Dichloroethene	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
32. 1,2-Dichloropropane	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
33. cis-1,3-Dichloropropene	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
34. trans-1,3-Dichloropropene	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
35. Ethylbenzene	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
37. 2-Hexanone	U	V+	µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
38. Isopropylbenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
40. Methylene Chloride	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
42. MTBE	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
43. Naphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
44. n-Propylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
45. Styrene	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
47. 1,1,1,2,2-Tetrachloroethane	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
48. Tetrachloroethene	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-002

Order: 95726
Page: 7 of 33
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-23 (2-3')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 10:05

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95726-002A **Matrix: Soil/Solid**
Description: SB-23 (2-3')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
51. 1,1,1-Trichloroethane	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
53. Trichloroethene	U		µg/kg	64	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
54. Trichlorofluoromethane	U	V+	µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
55. 1,2,3-Trichloropropane	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
59. Vinyl Chloride	U		µg/kg	40	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
60. m&p-Xylene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
61. o-Xylene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 62. Xylenes	U		µg/kg	150	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270E

Aliquot ID: 95726-002 **Matrix: Soil/Solid**
Description: SB-23 (2-3')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
3. Anthracene (SIM)	U		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
4. Benzo(a)anthracene (SIM)	570		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
5. Benzo(a)pyrene (SIM)	360		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
6. Benzo(b)fluoranthene (SIM)	540		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
9. Chrysene (SIM)	400		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
11. Fluoranthene (SIM)	810		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
12. Fluorene (SIM)	U		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
15. Naphthalene (SIM)	U		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
16. Phenanthrene (SIM)	850		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
17. Pyrene (SIM)	820		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-003

Order: 95726
Page: 8 of 33
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: Dup3-S	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: NA

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95726-003** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **Dup3-S**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	11		%	1	1.0	04/10/20	MC200410	04/13/20	MC200410	DBG

RCRA Elements by ICP/MS Aliquot ID: **95726-003** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **Dup3-S**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	6100		µg/kg	100	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
2. Barium	130000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
3. Cadmium	530		µg/kg	50	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH
4. Chromium	11000		µg/kg	500	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
5. Lead	150000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
6. Selenium	270		µg/kg	200	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95726-003** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **Dup3-S**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	71		µg/kg	50	8.9	04/13/20	PM20D13A	04/14/20	M720D14B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95726-003A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **Dup3-S**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 2. Acrylonitrile	U		µg/kg	120	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
3. Benzene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
4. Bromobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
5. Bromochloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
6. Bromodichloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
7. Bromoform	U		µg/kg	120	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
8. Bromomethane	U		µg/kg	200	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
9. 2-Butanone	U		µg/kg	750	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
10. n-Butylbenzene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
11. sec-Butylbenzene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-003

Order: 95726
Page: 9 of 33
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: Dup3-S	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: NA

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95726-003A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **Dup3-S**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
13. Carbon Disulfide	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
14. Carbon Tetrachloride	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
15. Chlorobenzene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
16. Chloroethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
17. Chloroform	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
18. Chloromethane	U		µg/kg	300	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
19. 2-Chlorotoluene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
21. Dibromochloromethane	U		µg/kg	120	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
22. Dibromomethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
26. Dichlorodifluoromethane	U		µg/kg	300	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
27. 1,1-Dichloroethane	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
28. 1,2-Dichloroethane	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
29. 1,1-Dichloroethene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
30. cis-1,2-Dichloroethene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
31. trans-1,2-Dichloroethene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
32. 1,2-Dichloropropane	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
33. cis-1,3-Dichloropropene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
34. trans-1,3-Dichloropropene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
35. Ethylbenzene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
37. 2-Hexanone	U	V+	µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
38. Isopropylbenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
40. Methylene Chloride	U		µg/kg	120	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
42. MTBE	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
43. Naphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
44. n-Propylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
45. Styrene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
47. 1,1,1,2,2-Tetrachloroethane	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
48. Tetrachloroethene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-003

Order: 95726
Page: 10 of 33
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: Dup3-S	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: NA

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95726-003A **Matrix: Soil/Solid**
Description: Dup3-S

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
51. 1,1,1-Trichloroethane	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
53. Trichloroethene	U		µg/kg	61	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
54. Trichlorofluoromethane	U	V+	µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
55. 1,2,3-Trichloropropane	U		µg/kg	120	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
59. Vinyl Chloride	U		µg/kg	40	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
60. m&p-Xylene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
61. o-Xylene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 62. Xylenes	U		µg/kg	150	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270E

Aliquot ID: 95726-003 **Matrix: Soil/Solid**
Description: Dup3-S

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
3. Anthracene (SIM)	U		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
4. Benzo(a)anthracene (SIM)	1200		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
5. Benzo(a)pyrene (SIM)	1000		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
6. Benzo(b)fluoranthene (SIM)	1400		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
7. Benzo(ghi)perylene (SIM)	780		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
8. Benzo(k)fluoranthene (SIM)	490		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
9. Chrysene (SIM)	930		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
11. Fluoranthene (SIM)	1800		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
12. Fluorene (SIM)	U		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	810		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
15. Naphthalene (SIM)	U		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
16. Phenanthrene (SIM)	920		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
17. Pyrene (SIM)	1800		µg/kg	330	20	04/13/20	PS20D13A	04/13/20	S620D13A	GJP

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-004

Order: 95726
 Page: 11 of 33
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-24 (1-2')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 10:40

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95726-004** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-24 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	14		%	1	1.0	04/10/20	MC200410	04/13/20	MC200410	DBG

RCRA Elements by ICP/MS Aliquot ID: **95726-004** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-24 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	7600		µg/kg	100	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
2. Barium	93000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
3. Cadmium	330		µg/kg	50	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH
4. Chromium	20000		µg/kg	500	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
5. Lead	140000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
6. Selenium	260		µg/kg	200	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95726-004** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-24 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	71		µg/kg	50	9.1	04/13/20	PM20D13A	04/14/20	M720D14B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95726-004A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-24 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 2. Acrylonitrile	U		µg/kg	140	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
3. Benzene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
4. Bromobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
5. Bromochloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
6. Bromodichloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
7. Bromoform	U		µg/kg	140	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
8. Bromomethane	U		µg/kg	200	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
9. 2-Butanone	U		µg/kg	750	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
10. n-Butylbenzene	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
11. sec-Butylbenzene	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-004

Order: 95726
Page: 12 of 33
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-24 (1-2')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 10:40

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95726-004A **Matrix: Soil/Solid**
Description: SB-24 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
13. Carbon Disulfide	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
14. Carbon Tetrachloride	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
15. Chlorobenzene	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
16. Chloroethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
17. Chloroform	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
18. Chloromethane	U		µg/kg	340	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
19. 2-Chlorotoluene	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
21. Dibromochloromethane	U		µg/kg	140	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
22. Dibromomethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
26. Dichlorodifluoromethane	U		µg/kg	340	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
27. 1,1-Dichloroethane	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
28. 1,2-Dichloroethane	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
29. 1,1-Dichloroethene	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
30. cis-1,2-Dichloroethene	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
31. trans-1,2-Dichloroethene	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
32. 1,2-Dichloropropane	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
33. cis-1,3-Dichloropropene	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
34. trans-1,3-Dichloropropene	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
35. Ethylbenzene	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
37. 2-Hexanone	U	V+	µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
38. Isopropylbenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
40. Methylene Chloride	U		µg/kg	140	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
42. MTBE	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
43. Naphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
44. n-Propylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
45. Styrene	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
47. 1,1,1,2,2-Tetrachloroethane	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
48. Tetrachloroethene	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-004

Order: 95726
Page: 13 of 33
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-24 (1-2')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 10:40

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95726-004A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-24 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
51. 1,1,1-Trichloroethane	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
53. Trichloroethene	U		µg/kg	68	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
54. Trichlorofluoromethane	U	V+	µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
55. 1,2,3-Trichloropropane	U		µg/kg	140	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
59. Vinyl Chloride	U		µg/kg	40	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
60. m&p-Xylene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
61. o-Xylene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 62. Xylenes	U		µg/kg	150	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **95726-004** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8270E Description: **SB-24 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
3. Anthracene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
9. Chrysene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
11. Fluoranthene (SIM)	390		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
12. Fluorene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
15. Naphthalene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
16. Phenanthrene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
17. Pyrene (SIM)	360		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-005

Order: 95726
 Page: 14 of 33
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-25 (1-2')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95726-005** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-25 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	14		%	1	1.0	04/10/20	MC200410	04/13/20	MC200410	DBG

RCRA Elements by ICP/MS Aliquot ID: **95726-005** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-25 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	7300		µg/kg	100	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
2. Barium	73000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
3. Cadmium	290		µg/kg	50	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH
4. Chromium	15000		µg/kg	500	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
5. Lead	85000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
6. Selenium	380		µg/kg	200	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95726-005** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-25 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	87		µg/kg	50	8.5	04/13/20	PM20D13A	04/14/20	M720D14B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95726-005A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-25 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 2. Acrylonitrile	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
3. Benzene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
4. Bromobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
5. Bromochloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
6. Bromodichloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
7. Bromoform	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
8. Bromomethane	U		µg/kg	200	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
9. 2-Butanone	U		µg/kg	750	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
10. n-Butylbenzene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
11. sec-Butylbenzene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-005

Order: 95726
Page: 15 of 33
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-25 (1-2')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95726-005A **Matrix: Soil/Solid**
Description: SB-25 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
13. Carbon Disulfide	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
14. Carbon Tetrachloride	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
15. Chlorobenzene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
16. Chloroethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
17. Chloroform	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
18. Chloromethane	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
19. 2-Chlorotoluene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
21. Dibromochloromethane	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
22. Dibromomethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
26. Dichlorodifluoromethane	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
27. 1,1-Dichloroethane	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
28. 1,2-Dichloroethane	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
29. 1,1-Dichloroethene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
30. cis-1,2-Dichloroethene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
31. trans-1,2-Dichloroethene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
32. 1,2-Dichloropropane	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
33. cis-1,3-Dichloropropene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
34. trans-1,3-Dichloropropene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
35. Ethylbenzene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
37. 2-Hexanone	U	V+	µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
38. Isopropylbenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
40. Methylene Chloride	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
42. MTBE	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
43. Naphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
44. n-Propylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
45. Styrene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
47. 1,1,1,2,2-Tetrachloroethane	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
48. Tetrachloroethene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-005

Order: 95726
Page: 16 of 33
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-25 (1-2')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95726-005A **Matrix: Soil/Solid**
Description: SB-25 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
51. 1,1,1-Trichloroethane	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
53. Trichloroethene	U		µg/kg	66	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
54. Trichlorofluoromethane	U	V+	µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
55. 1,2,3-Trichloropropane	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
59. Vinyl Chloride	U		µg/kg	40	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
60. m&p-Xylene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
61. o-Xylene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 62. Xylenes	U		µg/kg	150	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270E

Aliquot ID: 95726-005 **Matrix: Soil/Solid**
Description: SB-25 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
3. Anthracene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
9. Chrysene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
11. Fluoranthene (SIM)	380		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
12. Fluorene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
15. Naphthalene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
16. Phenanthrene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
17. Pyrene (SIM)	340		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-006

Order: 95726
 Page: 17 of 33
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-26 (3-4')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:20

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95726-006** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-26 (3-4')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	16		%	1	1.0	04/10/20	MC200410	04/13/20	MC200410	DBG

RCRA Elements by ICP/MS Aliquot ID: **95726-006** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-26 (3-4')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	7500		µg/kg	100	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
2. Barium	140000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
3. Cadmium	760		µg/kg	50	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH
4. Chromium	13000		µg/kg	500	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
5. Lead	370000		µg/kg	1000	100	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
6. Selenium	750		µg/kg	200	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
7. Silver	180		µg/kg	100	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95726-006** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-26 (3-4')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	260		µg/kg	50	8.8	04/13/20	PM20D13A	04/14/20	M720D14B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95726-006A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-26 (3-4')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 2. Acrylonitrile	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
3. Benzene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
4. Bromobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
5. Bromochloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
6. Bromodichloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
7. Bromoform	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
8. Bromomethane	U		µg/kg	200	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
9. 2-Butanone	U		µg/kg	750	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
10. n-Butylbenzene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
11. sec-Butylbenzene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-006

Order: 95726
Page: 18 of 33
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-26 (3-4')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:20

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95726-006A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-26 (3-4')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
13. Carbon Disulfide	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
14. Carbon Tetrachloride	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
15. Chlorobenzene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
16. Chloroethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
17. Chloroform	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
18. Chloromethane	U		µg/kg	340	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
19. 2-Chlorotoluene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
21. Dibromochloromethane	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
22. Dibromomethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
26. Dichlorodifluoromethane	U		µg/kg	340	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
27. 1,1-Dichloroethane	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
28. 1,2-Dichloroethane	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
29. 1,1-Dichloroethene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
30. cis-1,2-Dichloroethene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
31. trans-1,2-Dichloroethene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
32. 1,2-Dichloropropane	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
33. cis-1,3-Dichloropropene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
34. trans-1,3-Dichloropropene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
35. Ethylbenzene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
37. 2-Hexanone	U	V+	µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
38. Isopropylbenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
40. Methylene Chloride	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
42. MTBE	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
43. Naphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
44. n-Propylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
45. Styrene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
47. 1,1,1,2,2-Tetrachloroethane	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
48. Tetrachloroethene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-006

Order: 95726
 Page: 19 of 33
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-26 (3-4')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:20

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: **95726-006A** Matrix: **Soil/Solid**
 Description: **SB-26 (3-4')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
51. 1,1,1-Trichloroethane	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
53. Trichloroethene	U		µg/kg	67	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
54. Trichlorofluoromethane	U	V+	µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
55. 1,2,3-Trichloropropane	U		µg/kg	130	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
59. Vinyl Chloride	U		µg/kg	40	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
60. m&p-Xylene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
61. o-Xylene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 62. Xylenes	U		µg/kg	150	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270E

Aliquot ID: **95726-006** Matrix: **Soil/Solid**
 Description: **SB-26 (3-4')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
3. Anthracene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
6. Benzo(b)fluoranthene (SIM)	390		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
9. Chrysene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
11. Fluoranthene (SIM)	480		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
12. Fluorene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
15. Naphthalene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
16. Phenanthrene (SIM)	U	F+	µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
17. Pyrene (SIM)	440		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-007

Order: 95726
 Page: 20 of 33
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-27 (0.5-1')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:40

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95726-007** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-27 (0.5-1')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	16		%	1	1.0	04/10/20	MC200410	04/13/20	MC200410	DBG

RCRA Elements by ICP/MS Aliquot ID: **95726-007** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-27 (0.5-1')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	4900		µg/kg	100	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
2. Barium	32000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
3. Cadmium	200		µg/kg	50	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH
4. Chromium	9000		µg/kg	500	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
5. Lead	45000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
6. Selenium	U		µg/kg	200	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95726-007** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-27 (0.5-1')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	58		µg/kg	50	8.5	04/13/20	PM20D13A	04/14/20	M720D14B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95726-007A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-27 (0.5-1')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 2. Acrylonitrile	U		µg/kg	140	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
3. Benzene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
4. Bromobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
5. Bromochloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
6. Bromodichloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
7. Bromoform	U		µg/kg	140	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
8. Bromomethane	U		µg/kg	200	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
9. 2-Butanone	U		µg/kg	750	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
10. n-Butylbenzene	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
11. sec-Butylbenzene	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-007

Order: 95726
Page: 21 of 33
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-27 (0.5-1')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:40

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95726-007A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-27 (0.5-1')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
13. Carbon Disulfide	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
14. Carbon Tetrachloride	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
15. Chlorobenzene	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
16. Chloroethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
17. Chloroform	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
18. Chloromethane	U		µg/kg	350	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
19. 2-Chlorotoluene	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
21. Dibromochloromethane	U		µg/kg	140	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
22. Dibromomethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
26. Dichlorodifluoromethane	U		µg/kg	350	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
27. 1,1-Dichloroethane	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
28. 1,2-Dichloroethane	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
29. 1,1-Dichloroethene	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
30. cis-1,2-Dichloroethene	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
31. trans-1,2-Dichloroethene	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
32. 1,2-Dichloropropane	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
33. cis-1,3-Dichloropropene	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
34. trans-1,3-Dichloropropene	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
35. Ethylbenzene	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
37. 2-Hexanone	U	V+	µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
38. Isopropylbenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
40. Methylene Chloride	U		µg/kg	140	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
42. MTBE	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
43. Naphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
44. n-Propylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
45. Styrene	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
47. 1,1,1,2,2-Tetrachloroethane	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
48. Tetrachloroethene	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-007

Order: 95726
Page: 22 of 33
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-27 (0.5-1')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:40

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95726-007A **Matrix: Soil/Solid**
Description: SB-27 (0.5-1')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
51. 1,1,1-Trichloroethane	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
53. Trichloroethene	U		µg/kg	71	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
54. Trichlorofluoromethane	U	V+	µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
55. 1,2,3-Trichloropropane	U		µg/kg	140	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
59. Vinyl Chloride	U		µg/kg	40	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
60. m&p-Xylene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
61. o-Xylene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 62. Xylenes	U		µg/kg	150	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270E

Aliquot ID: 95726-007 **Matrix: Soil/Solid**
Description: SB-27 (0.5-1')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
3. Anthracene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
9. Chrysene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
12. Fluorene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
15. Naphthalene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
16. Phenanthrene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
17. Pyrene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-008

Order: 95726
 Page: 23 of 33
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-28 (11-12')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 12:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95726-008** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-28 (11-12')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	12		%	1	1.0	04/10/20	MC200410	04/13/20	MC200410	DBG

RCRA Elements by ICP/MS Aliquot ID: **95726-008** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-28 (11-12')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	6400		µg/kg	100	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
2. Barium	61000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
3. Cadmium	170		µg/kg	50	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH
4. Chromium	18000		µg/kg	500	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
5. Lead	8400		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
6. Selenium	U		µg/kg	200	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
7. Silver	U		µg/kg	100	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95726-008** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-28 (11-12')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		µg/kg	50	9.0	04/13/20	PM20D13A	04/14/20	M720D14B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95726-008A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-28 (11-12')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
‡ 2. Acrylonitrile	U		µg/kg	130	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
3. Benzene	U		µg/kg	50	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
4. Bromobenzene	U		µg/kg	100	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
5. Bromochloromethane	U		µg/kg	100	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
6. Bromodichloromethane	U		µg/kg	100	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
7. Bromoform	U		µg/kg	100	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
8. Bromomethane	U		µg/kg	200	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
9. 2-Butanone	U		µg/kg	750	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
10. n-Butylbenzene	U		µg/kg	50	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-008

Order: 95726
 Page: 24 of 33
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-28 (11-12')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 12:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: **95726-008A** Matrix: **Soil/Solid**
 Description: **SB-28 (11-12')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
13. Carbon Disulfide	U		µg/kg	250	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
14. Carbon Tetrachloride	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
15. Chlorobenzene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
16. Chloroethane	U		µg/kg	250	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
17. Chloroform	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
18. Chloromethane	U		µg/kg	250	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
21. Dibromochloromethane	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
22. Dibromomethane	U		µg/kg	250	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
35. Ethylbenzene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
37. 2-Hexanone	U		µg/kg	2500	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
38. Isopropylbenzene	U		µg/kg	250	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
40. Methylene Chloride	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
42. MTBE	U		µg/kg	250	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
43. Naphthalene	U		µg/kg	330	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
44. n-Propylbenzene	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
45. Styrene	U		µg/kg	65	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
48. Tetrachloroethene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-008

Order: 95726
 Page: 25 of 33
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-28 (11-12')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 12:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95726-008A** Matrix: **Soil/Solid**
Method: EPA 5035A/EPA 8260D Description: **SB-28 (11-12')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
53. Trichloroethene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
59. Vinyl Chloride	U		µg/kg	46	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
60. m&p-Xylene	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
61. o-Xylene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
‡ 62. Xylenes	U		µg/kg	150	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **95726-008** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8270E Description: **SB-28 (11-12')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
3. Anthracene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
9. Chrysene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
12. Fluorene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
15. Naphthalene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
16. Phenanthrene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
17. Pyrene (SIM)	U		µg/kg	330	1.0	04/13/20	PS20D13A	04/13/20	S620D13A	GJP

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-009

Order: 95726
 Page: 26 of 33
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-29 (1-2')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 12:20

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95726-009** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-29 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	12		%	1	1.0	04/10/20	MC200410	04/13/20	MC200410	DBG

RCRA Elements by ICP/MS Aliquot ID: **95726-009** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-29 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	8400		µg/kg	100	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
2. Barium	150000		µg/kg	1000	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
3. Cadmium	1100		µg/kg	50	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH
4. Chromium	34000		µg/kg	500	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
5. Lead	270000		µg/kg	1000	100	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
6. Selenium	560		µg/kg	200	20	04/13/20	PT20D13A	04/13/20	T420D13B	JLH
7. Silver	160		µg/kg	100	20	04/13/20	PT20D13A	04/14/20	T420D14A	JLH

Mercury by CVAAS Aliquot ID: **95726-009** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-29 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	290		µg/kg	50	8.6	04/13/20	PM20D13A	04/14/20	M720D14B	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95726-009A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-29 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
‡ 2. Acrylonitrile	U		µg/kg	130	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
3. Benzene	U		µg/kg	50	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
4. Bromobenzene	U		µg/kg	100	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
5. Bromochloromethane	U		µg/kg	100	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
6. Bromodichloromethane	U		µg/kg	100	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
7. Bromoform	U		µg/kg	100	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
8. Bromomethane	U		µg/kg	200	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
9. 2-Butanone	U		µg/kg	750	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
10. n-Butylbenzene	U		µg/kg	50	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-009

Order: 95726
Page: 27 of 33
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-29 (1-2')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 12:20

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260D

Aliquot ID: 95726-009A **Matrix: Soil/Solid**
Description: SB-29 (1-2')

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
13. Carbon Disulfide	U		µg/kg	250	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
14. Carbon Tetrachloride	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
15. Chlorobenzene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
16. Chloroethane	U		µg/kg	250	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
17. Chloroform	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
18. Chloromethane	U		µg/kg	250	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
21. Dibromochloromethane	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
22. Dibromomethane	U		µg/kg	250	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
35. Ethylbenzene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
37. 2-Hexanone	U		µg/kg	2500	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
38. Isopropylbenzene	U		µg/kg	250	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
40. Methylene Chloride	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
42. MTBE	U		µg/kg	250	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
43. Naphthalene	U		µg/kg	330	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
44. n-Propylbenzene	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
45. Styrene	U		µg/kg	65	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
47. 1,1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
48. Tetrachloroethene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-009

Order: 95726
 Page: 28 of 33
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-29 (1-2')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 12:20

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95726-009A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-29 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
49. Toluene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
53. Trichloroethene	61		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
59. Vinyl Chloride	U		µg/kg	46	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
60. m&p-Xylene	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
61. o-Xylene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
‡ 62. Xylenes	U		µg/kg	150	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **95726-009** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8270E** Description: **SB-29 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
3. Anthracene (SIM)	540		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
4. Benzo(a)anthracene (SIM)	1800		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
5. Benzo(a)pyrene (SIM)	1700		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
6. Benzo(b)fluoranthene (SIM)	2500		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
7. Benzo(ghi)perylene (SIM)	1100		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
8. Benzo(k)fluoranthene (SIM)	900		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
9. Chrysene (SIM)	1600		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
11. Fluoranthene (SIM)	3700		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
12. Fluorene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	1300		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
15. Naphthalene (SIM)	U		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
16. Phenanthrene (SIM)	2200		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP
17. Pyrene (SIM)	3300		µg/kg	330	10	04/13/20	PS20D13A	04/13/20	S620D13A	GJP

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-010

Order: 95726
 Page: 29 of 33
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-30 (1-2')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 12:45

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95726-010** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-30 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	13		%	1	1.0	04/10/20	MC200410	04/13/20	MC200410	DBG

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95726-010A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-30 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
‡ 2. Acrylonitrile	U		µg/kg	130	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
3. Benzene	U		µg/kg	50	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
4. Bromobenzene	U		µg/kg	100	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
5. Bromochloromethane	U		µg/kg	100	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
6. Bromodichloromethane	U		µg/kg	100	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
7. Bromoform	U		µg/kg	100	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
8. Bromomethane	U		µg/kg	200	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
9. 2-Butanone	U		µg/kg	750	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
10. n-Butylbenzene	U		µg/kg	50	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
13. Carbon Disulfide	U		µg/kg	250	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
14. Carbon Tetrachloride	U		µg/kg	50	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
15. Chlorobenzene	U		µg/kg	50	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
16. Chloroethane	U		µg/kg	250	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
17. Chloroform	U		µg/kg	50	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
18. Chloromethane	U		µg/kg	250	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
21. Dibromochloromethane	U		µg/kg	100	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
22. Dibromomethane	U		µg/kg	250	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/15/20	V120D15A	04/15/20	V120D15A	JLM

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-010

Order: 95726
 Page: 30 of 33
 Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-30 (1-2')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 12:45

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95726-010A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260D** Description: **SB-30 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
35. Ethylbenzene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
37. 2-Hexanone	U		µg/kg	2500	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
38. Isopropylbenzene	U		µg/kg	250	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
40. Methylene Chloride	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
42. MTBE	U		µg/kg	250	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
43. Naphthalene	U		µg/kg	330	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
44. n-Propylbenzene	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
45. Styrene	U		µg/kg	64	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
48. Tetrachloroethene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
49. Toluene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
53. Trichloroethene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
54. Trichlorofluoromethane	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
59. Vinyl Chloride	U		µg/kg	45	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
60. m&p-Xylene	U		µg/kg	100	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
61. o-Xylene	U		µg/kg	50	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM
‡ 62. Xylenes	U		µg/kg	150	1.0	04/15/20	VI20D15A	04/15/20	VI20D15A	JLM

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-011

Order: 95726
Page: 31 of 33
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: Meth Blank	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Blank: Methanol	Collect Time: NA

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95726-011** Matrix: **Blank: Methanol**
Method: EPA 5035A/EPA 8260D Description: **Meth Blank**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 2. Acrylonitrile	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
3. Benzene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
4. Bromobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
5. Bromochloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
6. Bromodichloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
7. Bromoform	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
8. Bromomethane	U		µg/kg	200	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
9. 2-Butanone	U		µg/kg	750	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
10. n-Butylbenzene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
11. sec-Butylbenzene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
12. tert-Butylbenzene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
13. Carbon Disulfide	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
14. Carbon Tetrachloride	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
15. Chlorobenzene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
16. Chloroethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
17. Chloroform	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
18. Chloromethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
19. 2-Chlorotoluene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
21. Dibromochloromethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
22. Dibromomethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
35. Ethylbenzene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
36. Ethylene Dibromide	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
37. 2-Hexanone	U	V+	µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-011

Order: 95726
Page: 32 of 33
Date: 04/16/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: Meth Blank	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Blank: Methanol	Collect Time: NA

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **95726-011** Matrix: **Blank: Methanol**
Method: EPA 5035A/EPA 8260D Description: **Meth Blank**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
38. Isopropylbenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
40. Methylene Chloride	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
42. MTBE	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
43. Naphthalene	U		µg/kg	330	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
44. n-Propylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
45. Styrene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
48. Tetrachloroethene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
49. Toluene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
53. Trichloroethene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
54. Trichlorofluoromethane	U	V+	µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
59. Vinyl Chloride	U		µg/kg	40	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
60. m&p-Xylene	U		µg/kg	100	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
61. o-Xylene	U		µg/kg	50	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM
‡ 62. Xylenes	U		µg/kg	150	1.0	04/13/20	VJ20D13A	04/13/20	VJ20D13A	JLM

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584

Definitions/ Qualifiers:

- A:** Spike recovery or precision unusable due to dilution.
- B:** The analyte was detected in the associated method blank.
- E:** The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J:** The concentration is an estimated value.
- M:** Modified Method
- U:** The analyte was not detected at or above the reporting limit.
- X:** Matrix Interference has resulted in a raised reporting limit or distorted result.
- W:** Results reported on a wet-weight basis.
- ***: Value reported is outside QC limits

Exception Summary:

- F+** : Recovery from the spiked aliquot exceeds the upper control limit (matrix spike or matrix spike duplicate).
- V+** : Recovery in the associated continuing calibration verification sample (CCV) exceeds the upper control limit. Results may be biased high.

Analysis Locations:

All analyses performed in Holt.



Accreditation Number(s):

T104704518-19-8 (TX)

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Thursday, April 23, 2020

Fibertec Project Number: 95726 Supplemental
Project Identification: Field Street and East Grand Boulevard (1-11284) /1-11284
Submittal Date: 04/08/2020

Mr. Jeremy Efros
Applied Science & Technology, Inc. - Brighton
10448 Citation
Suite 100
Brighton, MI 48116

Dear Mr. Efros,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

By Rikki Lott at 3:16 PM, Apr 23, 2020

For Daryl P. Strandbergh
Laboratory Director

Enclosures

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-010

Order: 95726
Page: 2 of 4
Date: 04/23/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-30 (1-2')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 12:45

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95726-010** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-30 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	13		%	1	1.0	04/10/20	MC200410	04/13/20	MC200410	DBG

RCRA Elements by ICP/MS Aliquot ID: **95726-010** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-30 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	18000	F-	µg/kg	100	20	04/22/20	PT20D22A	04/23/20	T420D23A	JLH
2. Barium	85000	F+	µg/kg	1000	20	04/22/20	PT20D22A	04/23/20	T420D23A	JLH
3. Cadmium	400		µg/kg	50	20	04/22/20	PT20D22A	04/23/20	T420D23A	JLH
4. Chromium	18000		µg/kg	500	20	04/22/20	PT20D22A	04/23/20	T420D23A	JLH
5. Lead	110000		µg/kg	1000	20	04/22/20	PT20D22A	04/23/20	T420D23A	JLH
6. Selenium	330		µg/kg	200	20	04/22/20	PT20D22A	04/23/20	T420D23A	JLH
7. Silver	U		µg/kg	100	20	04/22/20	PT20D22A	04/23/20	T420D23A	JLH

Mercury by CVAAS Aliquot ID: **95726-010** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-30 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	220		µg/kg	50	8.7	04/20/20	PM20D20A	04/21/20	M720D21A	JLH

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **95726-010** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8270E Description: **SB-30 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
3. Anthracene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
9. Chrysene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
11. Fluoranthene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-010

Order: 95726
 Page: 3 of 4
 Date: 04/23/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-30 (1-2')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 12:45

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **95726-010** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8270E** Description: **SB-30 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. Fluorene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
15. Naphthalene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
16. Phenanthrene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
17. Pyrene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584

Definitions/ Qualifiers:

- A:** Spike recovery or precision unusable due to dilution.
- B:** The analyte was detected in the associated method blank.
- E:** The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J:** The concentration is an estimated value.
- M:** Modified Method
- U:** The analyte was not detected at or above the reporting limit.
- X:** Matrix Interference has resulted in a raised reporting limit or distorted result.
- W:** Results reported on a wet-weight basis.
- *:** Value reported is outside QC limits

Exception Summary:

- F-** : Recovery from the spiked aliquot exceeds the lower control limit (matrix spike or matrix spike duplicate).
- F+** : Recovery from the spiked aliquot exceeds the upper control limit (matrix spike or matrix spike duplicate).

Analysis Locations:

All analyses performed in Holt.



Accreditation Number(s):

T104704518-19-8 (TX)

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Thursday, April 23, 2020

Fibertec Project Number: 95726 Supplemental
Project Identification: Field Street and East Grand Boulevard (1-11284) /1-11284
Submittal Date: 04/08/2020

Mr. Jeremy Efros
Applied Science & Technology, Inc. - Brighton
10448 Citation
Suite 100
Brighton, MI 48116

Dear Mr. Efros,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

By Rikki Lott at 3:16 PM, Apr 23, 2020

For Daryl P. Strandbergh
Laboratory Director

Enclosures

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-010

Order: 95726
Page: 2 of 4
Date: 04/23/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-30 (1-2')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 12:45

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95726-010** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-30 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	13		%	1	1.0	04/10/20	MC200410	04/13/20	MC200410	DBG

RCRA Elements by ICP/MS Aliquot ID: **95726-010** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-30 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	18000	F-	µg/kg	100	20	04/22/20	PT20D22A	04/23/20	T420D23A	JLH
2. Barium	85000	F+	µg/kg	1000	20	04/22/20	PT20D22A	04/23/20	T420D23A	JLH
3. Cadmium	400		µg/kg	50	20	04/22/20	PT20D22A	04/23/20	T420D23A	JLH
4. Chromium	18000		µg/kg	500	20	04/22/20	PT20D22A	04/23/20	T420D23A	JLH
5. Lead	110000		µg/kg	1000	20	04/22/20	PT20D22A	04/23/20	T420D23A	JLH
6. Selenium	330		µg/kg	200	20	04/22/20	PT20D22A	04/23/20	T420D23A	JLH
7. Silver	U		µg/kg	100	20	04/22/20	PT20D22A	04/23/20	T420D23A	JLH

Mercury by CVAAS Aliquot ID: **95726-010** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-30 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	220		µg/kg	50	8.7	04/20/20	PM20D20A	04/21/20	M720D21A	JLH

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **95726-010** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8270E Description: **SB-30 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
3. Anthracene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
9. Chrysene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
11. Fluoranthene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-010

Order: 95726
 Page: 3 of 4
 Date: 04/23/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-30 (1-2')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 12:45

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **95726-010** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8270E** Description: **SB-30 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
12. Fluorene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
15. Naphthalene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
16. Phenanthrene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT
17. Pyrene (SIM)	U		µg/kg	330	1.0	04/21/20	PS20D21A	04/21/20	S520D21A	TKT

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584

Definitions/ Qualifiers:

- A:** Spike recovery or precision unusable due to dilution.
- B:** The analyte was detected in the associated method blank.
- E:** The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J:** The concentration is an estimated value.
- M:** Modified Method
- U:** The analyte was not detected at or above the reporting limit.
- X:** Matrix Interference has resulted in a raised reporting limit or distorted result.
- W:** Results reported on a wet-weight basis.
- *:** Value reported is outside QC limits

Exception Summary:

- F-** : Recovery from the spiked aliquot exceeds the lower control limit (matrix spike or matrix spike duplicate).
- F+** : Recovery from the spiked aliquot exceeds the upper control limit (matrix spike or matrix spike duplicate).

Analysis Locations:

All analyses performed in Holt.



Accreditation Number(s):

T104704518-19-8 (TX)

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Thursday, April 30, 2020

Fibertec Project Number: 95726 Supplemental
Project Identification: Field Street and East Grand Boulevard (1-11284) /1-11284
Submittal Date: 04/08/2020

Mr. Jeremy Efros
Applied Science & Technology, Inc. - Brighton
10448 Citation
Suite 100
Brighton, MI 48116

Dear Mr. Efros,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

By Rikki Lott at 9:37 AM, Apr 30, 2020

For Daryl P. Strandbergh
Laboratory Director

Enclosures

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-002

Order: 95726
 Page: 2 of 8
 Date: 04/30/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-23 (2-3')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 10:05

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95726-002** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-23 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	12		%	1	1.0	04/10/20	MC200410	04/13/20	MC200410	DBG

Lead, MDEQ Criteria Aliquot ID: **95726-002B** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-23 (2-3')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Lead, Coarse Fraction	289000		µg/kg	1000	100	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
2. Lead, Fine Fraction	884000		µg/kg	1000	200	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
3. Lead, Total (Calculated)	307000		µg/kg	1000	1.0	NA	NA	04/27/20	NA	JLH
‡ 4. Percent Total Solids	87.9		%	0.1	1.0	NA	NA	04/27/20	NA	JLH

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-004

Order: 95726
 Page: 3 of 8
 Date: 04/30/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-24 (1-2')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 10:40

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95726-004** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-24 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	14		%	1	1.0	04/10/20	MC200410	04/13/20	MC200410	DBG

Lead, MDEQ Criteria Aliquot ID: **95726-004B** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-24 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Lead, Coarse Fraction	203000		µg/kg	1000	100	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
2. Lead, Fine Fraction	254000		µg/kg	1080	220	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
3. Lead, Total (Calculated)	204000		µg/kg	1000	1.0	NA	NA	04/27/20	NA	JLH
‡ 4. Percent Total Solids	87.3		%	0.1	1.0	NA	NA	04/27/20	NA	JLH

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-005

Order: 95726
 Page: 4 of 8
 Date: 04/30/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-25 (1-2')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95726-005** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-25 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	14		%	1	1.0	04/10/20	MC200410	04/13/20	MC200410	DBG

Lead, MDEQ Criteria Aliquot ID: **95726-005B** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-25 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Lead, Coarse Fraction	101000		µg/kg	1000	100	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
2. Lead, Fine Fraction	102000		µg/kg	1000	200	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
3. Lead, Total (Calculated)	101000		µg/kg	1000	1.0	NA	NA	04/27/20	NA	JLH
‡ 4. Percent Total Solids	86.7		%	0.1	1.0	NA	NA	04/27/20	NA	JLH

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-006

Order: 95726
 Page: 5 of 8
 Date: 04/30/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-26 (3-4')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 11:20

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95726-006** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-26 (3-4')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	16		%	1	1.0	04/10/20	MC200410	04/13/20	MC200410	DBG

Lead, MDEQ Criteria Aliquot ID: **95726-006B** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-26 (3-4')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Lead, Coarse Fraction	360000		µg/kg	1000	100	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
2. Lead, Fine Fraction	434000		µg/kg	1000	200	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
3. Lead, Total (Calculated)	367000		µg/kg	1000	1.0	NA	NA	04/27/20	NA	JLH
‡ 4. Percent Total Solids	86.5		%	0.1	1.0	NA	NA	04/27/20	NA	JLH

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-009

Order: 95726
 Page: 6 of 8
 Date: 04/30/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-29 (1-2')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 12:20

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95726-009** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-29 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	12		%	1	1.0	04/10/20	MC200410	04/13/20	MC200410	DBG

Lead, MDEQ Criteria Aliquot ID: **95726-009B** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-29 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Lead, Coarse Fraction	336000		µg/kg	1000	100	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
2. Lead, Fine Fraction	451000		µg/kg	1000	200	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
3. Lead, Total (Calculated)	339000		µg/kg	1000	1.0	NA	NA	04/27/20	NA	JLH
‡ 4. Percent Total Solids	86.9		%	0.1	1.0	NA	NA	04/27/20	NA	JLH

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95726
Laboratory Sample Number: 95726-010

Order: 95726
 Page: 7 of 8
 Date: 04/30/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SB-30 (1-2')	Chain of Custody: 189057
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No:	Collect Date: 04/08/20
Client Project No: 1-11284	Sample Matrix: Soil/Solid	Collect Time: 12:45

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **95726-010** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-30 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	13		%	1	1.0	04/10/20	MC200410	04/13/20	MC200410	DBG

Lead, MDEQ Criteria Aliquot ID: **95726-010B** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-30 (1-2')**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Lead, Coarse Fraction	129000		µg/kg	1000	100	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
2. Lead, Fine Fraction	179000		µg/kg	1000	200	04/27/20	PT20D27A	04/27/20	T420D27B	JLH
3. Lead, Total (Calculated)	131000		µg/kg	1000	1.0	NA	NA	04/27/20	NA	JLH
‡ 4. Percent Total Solids	88.1		%	0.1	1.0	NA	NA	04/27/20	NA	JLH

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584

Definitions/ Qualifiers:

- A:** Spike recovery or precision unusable due to dilution.
- B:** The analyte was detected in the associated method blank.
- E:** The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J:** The concentration is an estimated value.
- M:** Modified Method
- U:** The analyte was not detected at or above the reporting limit.
- X:** Matrix Interference has resulted in a raised reporting limit or distorted result.
- W:** Results reported on a wet-weight basis.
- *:** Value reported is outside QC limits

Exception Summary:

Analysis Locations:

All analyses performed in Holt.



Accreditation Number(s):

T104704518-19-8 (TX)

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584

Client Name: <u>ASTI Environmental</u>				MATRIX (SEE RIGHT CORNER FOR CODE)	# OF CONTAINERS	VOCs	PNAS	PCRA 8 metals	PARAMETERS										Matrix Code		Deliverables	
Contact Person: <u>Jeremy Efron / Brian Kubersti</u>									S Soil	GW Ground Water	A Air	SW Surface Water	O Oil	WW Waste Water	P Wipe	X Other: Specify	Level 2	Level 3	Level 4	EDD		
Project Name/ Number: <u>Field Street and East Grand Boulevard</u>																						
Email distribution list: <u>bkubersti@astirenv.com</u>									HOLD SAMPLE	Remarks:												
Quote#																						
Purchase Order#									Date	Time	Sample #	Client Sample Descriptor	S	Z	X	X	X					
				4/8/20	0930		SB-22 (4-10')	X	X	X												
					1005		SB-27 (2-3')	X	X	X												
					—		Dup 3-5	X	X	X												
					1040		SB-24 (1-2')	X	X	X												
					1100		SB-25 (1-2')	X	X	X												
					1120		SB-26 (3-4')	X	X	X												
					1140		SB-27 (0.5-1')	X	X	X												
					1200		SB-28 (11-12')	X	X	X												
					1220		SB-29 (1-2')	X	X	X												
					1245		SB-30 (1-2')	X	X	X												
Comments: <u>Meth Blue</u>																						
Sampled/Relinquished By: <u>Jeremy Efron</u>				Date/Time: <u>4/8/20 1:56</u>	Received By: <u>Russ Scott</u>																	
Relinquished By: <u>Russ Scott</u>				Date/Time: _____	Received By: <u>Robert Shrade 4/9/20 1:00</u>																	
Relinquished By: <u>Robert Shrade</u>				Date/Time: <u>4/9/20 2:46</u>	Received By Laboratory: _____																	
Turnaround time ALL RESULTS WILL BE SENT BY THE END OF THE BUSINESS DAY					LAB USE ONLY																	
___ 1 bus. day	___ 2 bus. days	___ 3 bus. days	___ 4 bus. days	Fibertec project number: <u>95726</u>	Received On Ice																	
<input checked="" type="checkbox"/> 5-7 bus. days (standard)	Other (specify time/date requirement): _____	Temperature upon receipt at Lab: <u>4.202</u>																				



Friday, April 17, 2020

Fibertec Project Number: 95731
Project Identification: Field Street and East Grand Boulevard (1-11284) /1-11284
Submittal Date: 04/09/2020

Mr. Brian Kuberski
Applied Science & Technology, Inc. - Brighton
10448 Citation
Suite 100
Brighton, MI 48116

Dear Mr. Kuberski,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

A handwritten signature in black ink that reads "Rikki Lott".

By Rikki Lott at 10:22 AM, Apr 17, 2020

For Daryl P. Strandbergh
Laboratory Director

Enclosures

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95731
Laboratory Sample Number: 95731-001

Order: 95731
Page: 2 of 6
Date: 04/17/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SG-2	Chain of Custody: 189056
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No: 3784	Collect Date: 04/09/20
Client Project No: 1-11284	Sample Matrix: Air	Collect Time: 11:30

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

TO-15 (Bottle-Vac)
Method: EPA TO-15

Aliquot ID: 95731-001 **Matrix: Air**
Description: SG-2

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Acetone	U		µg/m3	57	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
2. Benzene	U		µg/m3	19	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
3. Benzyl Chloride	U		µg/m3	6.2	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
4. Bromodichloromethane	U		µg/m3	8.0	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
5. Bromoform	U		µg/m3	62	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
6. Bromomethane	U		µg/m3	23	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
7. 1,3-Butadiene	U		µg/m3	0.66	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
8. 2-Butanone	U		µg/m3	35	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
‡ 9. Carbon Disulfide	U		µg/m3	37	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
10. Carbon Tetrachloride	U		µg/m3	7.5	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
11. Chlorobenzene	U		µg/m3	28	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
12. Chloroethane	U		µg/m3	16	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
13. Chloroform	U		µg/m3	5.9	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
14. Chloromethane	U		µg/m3	12	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
15. Cyclohexane	U		µg/m3	41	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
16. Dibromochloromethane	U		µg/m3	4.1	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
17. 1,2-Dichlorobenzene	U		µg/m3	36	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
18. 1,3-Dichlorobenzene	U		µg/m3	36	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
19. 1,4-Dichlorobenzene	U		µg/m3	36	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
20. Dichlorodifluoromethane	U		µg/m3	30	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
21. 1,1-Dichloroethane	U		µg/m3	24	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
22. 1,2-Dichloroethane	U		µg/m3	4.9	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
23. 1,1-Dichloroethene	U		µg/m3	24	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
24. cis-1,2-Dichloroethene	U		µg/m3	24	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
25. trans-1,2-Dichloroethene	U		µg/m3	24	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
26. 1,2-Dichloropropane	U		µg/m3	28	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
27. cis-1,3-Dichloropropene	U		µg/m3	27	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
28. trans-1,3-Dichloropropene	U		µg/m3	27	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
29. 1,4-Dioxane	U		µg/m3	22	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
‡ 30. Ethyl Acetate	U		µg/m3	43	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
31. Ethylbenzene	U		µg/m3	52	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
32. Ethylene Dibromide	U		µg/m3	0.92	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
33. n-Heptane	U		µg/m3	49	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
34. Hexachlorobutadiene	U		µg/m3	5.1	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
35. n-Hexane	U		µg/m3	42	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
‡ 36. 2-Hexanone	U		µg/m3	49	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
‡ 37. Isopropanol	U		µg/m3	29	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95731
Laboratory Sample Number: 95731-001

Order: 95731
 Page: 3 of 6
 Date: 04/17/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: SG-2	Chain of Custody: 189056
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No: 3784	Collect Date: 04/09/20
Client Project No: 1-11284	Sample Matrix: Air	Collect Time: 11:30

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

TO-15 (Bottle-Vac)
Method: EPA TO-15

Aliquot ID: 95731-001 **Matrix: Air**
Description: SG-2

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
38. 4-Methyl-2-pentanone	U		µg/m3	49	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
39. Methylene Chloride	U		µg/m3	42	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
‡ 40. 2-Methylnaphthalene	U		µg/m3	140	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
41. MTBE	U		µg/m3	22	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
‡ 42. Naphthalene	U		µg/m3	24	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
43. Styrene	U		µg/m3	51	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
44. 1,1,2,2-Tetrachloroethane	U		µg/m3	3.3	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
45. Tetrachloroethene	U		µg/m3	41	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
‡ 46. Tetrahydrofuran	U		µg/m3	3.5	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
47. Toluene	U		µg/m3	23	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
48. 1,2,4-Trichlorobenzene	U		µg/m3	89	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
49. 1,1,1-Trichloroethane	U		µg/m3	33	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
50. 1,1,2-Trichloroethane	U		µg/m3	6.5	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
51. Trichloroethene	U		µg/m3	1.6	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
52. Trichlorofluoromethane	U		µg/m3	34	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
53. 1,1,2-Trichlorotrifluoroethane	U		µg/m3	46	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
54. 1,2,4-Trimethylbenzene	U		µg/m3	29	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
55. 1,3,5-Trimethylbenzene	U		µg/m3	29	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
56. Vinyl Acetate	U		µg/m3	42	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
57. Vinyl Chloride	U		µg/m3	15	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
58. m&p-Xylene	U		µg/m3	52	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
59. o-Xylene	U		µg/m3	52	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
‡ 60. Xylenes	U		µg/m3	100	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB

Surrogate Summary

4-Bromofluorobenzene(S)	88	%	<u>Control Limits</u>	<u>Batch</u>
			80-120	VN20D13A

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95731
Laboratory Sample Number: 95731-002

Order: 95731
 Page: 4 of 6
 Date: 04/17/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: Dup1-SG	Chain of Custody: 189056
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No: 3753	Collect Date: 04/09/20
Client Project No: 1-11284	Sample Matrix: Air	Collect Time: 11:36

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

TO-15 (Bottle-Vac) Aliquot ID: **95731-002** Matrix: **Air**
Method: EPA TO-15 Description: **Dup1-SG**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Acetone	U		µg/m3	57	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
2. Benzene	U		µg/m3	19	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
3. Benzyl Chloride	U		µg/m3	6.2	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
4. Bromodichloromethane	U		µg/m3	8.0	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
5. Bromoform	U		µg/m3	62	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
6. Bromomethane	U		µg/m3	23	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
7. 1,3-Butadiene	U		µg/m3	0.66	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
8. 2-Butanone	U		µg/m3	35	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
‡ 9. Carbon Disulfide	U		µg/m3	37	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
10. Carbon Tetrachloride	U		µg/m3	7.5	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
11. Chlorobenzene	U		µg/m3	28	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
12. Chloroethane	U		µg/m3	16	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
13. Chloroform	U		µg/m3	5.9	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
14. Chloromethane	U		µg/m3	12	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
15. Cyclohexane	U		µg/m3	41	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
16. Dibromochloromethane	U		µg/m3	4.1	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
17. 1,2-Dichlorobenzene	U		µg/m3	36	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
18. 1,3-Dichlorobenzene	U		µg/m3	36	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
19. 1,4-Dichlorobenzene	U		µg/m3	36	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
20. Dichlorodifluoromethane	U		µg/m3	30	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
21. 1,1-Dichloroethane	U		µg/m3	24	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
22. 1,2-Dichloroethane	U		µg/m3	4.9	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
23. 1,1-Dichloroethene	U		µg/m3	24	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
24. cis-1,2-Dichloroethene	U		µg/m3	24	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
25. trans-1,2-Dichloroethene	U		µg/m3	24	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
26. 1,2-Dichloropropane	U		µg/m3	28	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
27. cis-1,3-Dichloropropene	U		µg/m3	27	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
28. trans-1,3-Dichloropropene	U		µg/m3	27	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
29. 1,4-Dioxane	U		µg/m3	22	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
‡ 30. Ethyl Acetate	U		µg/m3	43	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
31. Ethylbenzene	U		µg/m3	52	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
32. Ethylene Dibromide	U		µg/m3	0.92	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
33. n-Heptane	U		µg/m3	49	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
34. Hexachlorobutadiene	U		µg/m3	5.1	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
35. n-Hexane	U		µg/m3	42	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
‡ 36. 2-Hexanone	U		µg/m3	49	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
‡ 37. Isopropanol	U		µg/m3	29	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584



Analytical Laboratory Report
Laboratory Project Number: 95731
Laboratory Sample Number: 95731-002

Order: 95731
 Page: 5 of 6
 Date: 04/17/20

Client Identification: Applied Science & Technology, Inc. - Brighton	Sample Description: Dup1-SG	Chain of Custody: 189056
Client Project Name: Field Street and East Grand Boulevard (1-11284)	Sample No: 3753	Collect Date: 04/09/20
Client Project No: 1-11284	Sample Matrix: Air	Collect Time: 11:36

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

TO-15 (Bottle-Vac)
Method: EPA TO-15

Aliquot ID: 95731-002 **Matrix: Air**
Description: Dup1-SG

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
38. 4-Methyl-2-pentanone	U		µg/m3	49	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
39. Methylene Chloride	U		µg/m3	42	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
‡ 40. 2-Methylnaphthalene	U		µg/m3	140	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
41. MTBE	U		µg/m3	22	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
‡ 42. Naphthalene	U		µg/m3	24	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
43. Styrene	U		µg/m3	51	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
44. 1,1,2,2-Tetrachloroethane	U		µg/m3	3.3	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
45. Tetrachloroethene	U		µg/m3	41	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
‡ 46. Tetrahydrofuran	U		µg/m3	3.5	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
47. Toluene	U		µg/m3	23	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
48. 1,2,4-Trichlorobenzene	U		µg/m3	89	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
49. 1,1,1-Trichloroethane	U		µg/m3	33	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
50. 1,1,2-Trichloroethane	U		µg/m3	6.5	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
51. Trichloroethene	U		µg/m3	1.6	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
52. Trichlorofluoromethane	U		µg/m3	34	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
53. 1,1,2-Trichlorotrifluoroethane	U		µg/m3	46	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
54. 1,2,4-Trimethylbenzene	U		µg/m3	29	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
55. 1,3,5-Trimethylbenzene	U		µg/m3	29	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
56. Vinyl Acetate	U		µg/m3	42	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
57. Vinyl Chloride	U		µg/m3	15	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
58. m&p-Xylene	U		µg/m3	52	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
59. o-Xylene	U		µg/m3	52	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB
‡ 60. Xylenes	U		µg/m3	100	4.0	04/13/20	VN20D13A	04/13/20	VN20D13A	ANB

Surrogate Summary

4-Bromofluorobenzene(S)	89	%	<u>Control Limits</u>	<u>Batch</u>
			80-120	VN20D13A

1914 Holloway Drive
 11766 E. Grand River
 8660 S. Mackinaw Trail

Holt, MI 48842
 Brighton, MI 48116
 Cadillac, MI 49601

T: (517) 699-0345
 T: (810) 220-3300
 T: (231) 775-8368

F: (517) 699-0388
 F: (810) 220-3311
 F: (231) 775-8584

Definitions/ Qualifiers:

- A:** Spike recovery or precision unusable due to dilution.
- B:** The analyte was detected in the associated method blank.
- E:** The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J:** The concentration is an estimated value.
- M:** Modified Method
- U:** The analyte was not detected at or above the reporting limit.
- X:** Matrix Interference has resulted in a raised reporting limit or distorted result.
- W:** Results reported on a wet-weight basis.
- ***: Value reported is outside QC limits
- D:** The sample or extract was analyzed at a DF greater than 1.

Exception Summary:

Analysis Locations:

All analyses performed in Holt.



Accreditation Number(s):

T104704518-19-8 (TX)

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584

Client Name: ASTI Environmental				MATRIX (SEE RIGHT CORNER FOR CODE)	# OF CONTAINERS	TD-15 VECs	PARAMETERS										Matrix Code			Deliverables	
Contact Person: Brian Kubertei							HOLD SAMPLE	S	Soil	GW	Ground Water	Level 2									
Project Name/ Number: 1-11284								A	Air	SW	Surface Water	Level 3									
Field Street and East Grand Blvd.								O	Oil	WW	Waste Water	Level 4									
Email distribution list: b.kubertei@astienv.com / jefros@asti-env.com								P	Wipe	X	Other: Specify	EDD									
Quote#																					
Purchase Order#																					
Date	Time	Sample #	Client Sample Descriptor	Remarks:																	
4/9/20	1130		SG-2	can 3784 reg 0397																	
4/9/20	1136		Dup 1-SG	can 3753 reg 0397																	
				Received By Lab																	
				APR 09 2020																	
				Initials: <u>JM</u>																	
Comments: Rcd ③ B-Vs + ③ Regs. P.T.S.																					
Sampled/Relinquished By: Jeremy Efros			Date/Time: 4/9/20 1250	Received By: Kyle Scott																	
Relinquished By:			Date/Time:	Received by: Walter Shuck 4/9/20 11:00																	
Relinquished By: Walter Shuck			Date/Time: 4/9/20 2:46	Received By Laboratory:																	
Turnaround Time ALL RESULTS WILL BE SENT BY THE END OF THE BUSINESS DAY																					
<input type="checkbox"/> 1 bus. day <input type="checkbox"/> 2 bus. days <input type="checkbox"/> 3 bus. days <input type="checkbox"/> 4 bus. days <input checked="" type="checkbox"/> 5-7 bus. days (standard) Other (specify time/date requirement): _____				LAB USE ONLY																	
				Fibertec project number: 95731																	
				Temperature upon receipt at Lab: Room Temp																	

ASTI ENVIRONMENTAL
ENVIRONMENTAL INVESTIGATION, REMEDIATION, COMPLIANCE AND
RESTORATION PROJECTS THROUGHOUT THE GREAT LAKES SINCE 1985.

OUR SERVICES INCLUDE:

- **ASBESTOS, LEAD, MOLD, AND RADON ASSESSMENTS**
- **BROWNFIELD/GREYFIELD REDEVELOPMENT ASSISTANCE**
- **DEVELOPMENT INCENTIVES AND GRANT MANAGEMENT**
- **ECOLOGICAL ASSESSMENTS AND RESTORATION**
- **ENVIRONMENTAL ASSESSMENTS AND IMPACT STATEMENTS**
- **ENVIRONMENTAL OPPORTUNITIES ASSESSMENT**
- **GIS MAPPING**
- **HAZARD MITIGATION PLANNING**
- **MINING AND RECLAMATION ASSISTANCE**
- **REMEDIATION IMPLEMENTATION, OPERATION AND MAINTENANCE**
- **PHASE I ESA AND ENVIRONMENTAL DUE DILIGENCE ASSESSMENTS**
- **REGULATORY COMPLIANCE AND PERMITTING**
- **SOIL AND GROUNDWATER ASSESSMENTS**
- **SOIL AND GROUNDWATER REMEDIATION**
- **STORAGE TANK COMPLIANCE AND CLOSURE**
- **THREATENED AND ENDANGERED SPECIES SURVEYS**
- **WATERSHED AND STORMWATER MANAGEMENT PROGRAMS**
- **WETLAND DELINEATION, PERMITTING, MITIGATION AND BANKING**