Proactive by Design

REMEDIAL ACTION WORK PLAN

RIDEM
117 & 229 First Avenue
Woonsocket, Rhode Island

February 2020
File No. 34502.04

PREPARED FOR:
Rhode Island Department of Environmental Management
Providence, Rhode Island

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February 20, 2020
Job No. 34502.04

Ms. Rachel Simpson
Rhode Island Department of Environmental Management
Office of Waste Management
235 Promenade Street, 3rd Floor
Providence, Rhode Island 02908

Re: *Remedial Action Work Plan*
RFA #19011 Add. Seville Dyeing Co.
Seville Dyeing Co. Property
117 & 229 First Avenue (Plat 6 / Lots 117, 102, & 118)
Woonsocket, Rhode Island

Dear Ms. Simpson:

GZA GeoEnvironmental, Inc. (GZA) is pleased to submit the attached *Remedial Action Work Plan* for the above referenced Site. The RAWP was completed in general accordance with our proposal for services, and applicable sections of Rule 1.10 of the Rhode Island Department of Environmental Management's (RIDEM's) Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Remediation Regulations).

We trust this report addresses the applicable regulatory requirements and look forward to the Department's issuance of a *Remedial Approval Letter*. If you require any additional information or have comments on the content of the report, please feel free to contact either Rick or Ed at (401) 421-4140.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Richard A. Carlone, P.E.
Senior Project Manager

Albert I. Flori, P.E.
Consultant/Reviewer

Edward A. Summerly, P.G.
Principal / District Office Manager

Cc: AmyJean McKeown, EPA

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

GZA GeoEnvironmental, Inc. (GZA) has prepared this *Remedial Action Work Plan* (RAWP) on behalf of the Rhode Island Department of Environmental Management (RIDEM – Client) for the property located at 117 & 229 First Avenue in Woonsocket, Rhode Island (the "Site"). The Site is an active RIDEM listed remediation Site (RIDEM Case Nos. SR-39-1211A and B). GZA performed this RAWP in accordance with the Rhode Island Department of Environmental Management's (RIDEM's) *Remedial Decision Letter* (RDL) dated June 7, 2019. Authorization to proceed on this project was granted in accordance with GZA's signed proposal dated June 13, 2019. It may be subject to modification if additional information is developed subsequently by GZA or any other party, and this RAWP is subject to the limitations provided in **Appendix A**.

This RAWP has been prepared to address applicable requirements of Section 1.10 of the RIDEM's Rules and Regulations for the Investigation and Remediation of Hazardous Materials Releases (Remediation Regulations), amended January 2019, and is based in part on information presented in our April 24, 2019 *Site Investigation Report* (SIR).

2.0 BACKGROUND

The following sections provide background information on the Site.

2.1 SITE DESCRIPTION

The Site is identified with an address of 117 & 229 First Avenue (Plat 6 / Lots 117, 102, & 118) in Woonsocket, Rhode Island. It is bordered by Fairmount Street to the south, the Blackstone River to the east, a railroad corridor to the north, and First Avenue to the west. A Locus Plan is provided as **Figure 1** and an Exploration Location Plan is provided as **Figure 2**.

The ±5.5-acre Site consists of three parcels with the following characteristics:

- Lot 118, located at 229 First Avenue, covers 4.3 acres and comprises the southern portion of the Site. The majority of this parcel contains remnant building foundations. The former Seville Dyeing Company and previous Enterprise Dye Works mill building footprints are located along the majority of First Avenue (i.e., the southwestern portion of the Site). The northern portion of Lot 118 is unpaved and contains vehicles and solid waste piles.

- Lot 102, located at 0 First Avenue, covers 0.24 acres and comprises the northwestern portion of the Site. The lot is currently vacant and covered with asphalt pavement. It was formerly utilized for parking by Laramee's Transit Inc. and the Woonsocket Machine and Press Company.

- Lot 117, located at 117 First Avenue, covers 1.08 acres and occupies the northern portion of the Site. This Lot is currently vacant, covered with asphalt pavement and was also formerly utilized for parking by Laramee's Transit Inc.

The Site is undeveloped following demolition of the once extensive mill structures in 2011/2012 and is presently vacant. Three Site reuse options are being considered by the City: solar array, recreational field or new redevelopment (residential, commercial and/or industrial).

2.2 ENVIRONMENTAL SETTING

The following subsections provide information regarding the general physiographic and hydrogeologic conditions in the area of the Site.

2.2.1 Topography, Drainage, Soil Type

The Site is relatively flat. Based on a review of the U.S. Geological Survey topographic map and online GIS mapping, the northwestern portion of the Site is at an elevation of ±170 feet above mean sea level (MSL). The eastern perimeter is a riverbank that borders the Blackstone River which is located at roughly ±150 feet MSL. The regional topographic gradient near the Site slopes downward to the east towards the adjacent Blackstone River.

According to the Bedrock Geology Map of the Blackstone Quadrangle, Rhode Island, dated 1959, the underlying bedrock is Rhode Island Formation (Esmond-Dedham Subterrane) and is described as greenish, gray, dark-gray, to black greywacke, conglomerate, sandstone, shale, and meta-anthracite. Based on review of available mapping, bedrock appears to be located approximately 90 feet below ground surface (bgs). According to the Surficial Geology Map of the Blackstone Quadrangle, dated 1956, the surficial soils in the vicinity of the Site are comprised of artificial fill underlain by glacial outwash plains. Outwash plains consist of sorted sand, stratified silts, and local deposits of gravel, and can be highly permeable.

The Unites States Natural Resources Conservation Service's Web Soil Survey classifies surficial Site soils as "Merrimac-Urban Land Complex", 0 to 9 percent slopes that are well drained. The Urban Land classification is defined as those areas that consist mostly of sites for buildings, paved roads and parking lots and is common for sites in the intensely built-up portions of Providence and Newport Counties.

2.2.2 Groundwater

Groundwater at the Site is classified as GB by RIDEM. This designation applies to groundwater resources which may not be suitable for human consumption without treatment due to known or presumed degradation. The northeastern portion of the Site is located within an area designated as a Groundwater Reservoir. The Site is located approximately 730 feet east (downgradient) of a GA Groundwater Classification Area.

Based on local topography, the inferred direction of groundwater flow is to the east toward the Blackstone River. However, the localized direction of groundwater flow near the Site might vary because of underground utilities, subsurface preferential pathways, variations in weather or heterogeneous geological and/or anthropogenic conditions.

According to overlay maps maintained by the RIDEM's Office of Water Resources, the Site is located approximately 0.9 miles east (downgradient) of a non-community wellhead protection area. There are no known sources of potable water (i.e., groundwater supply wells) on the properties immediately abutting the Site; abutting properties are connected to public water.

2.2.3 Surface Water

The Blackstone River borders the eastern perimeter of the Site. The Blackstone River has been classified as B1 water by RIDEM which stipulates that these waters are designated for fish and wildlife habitat and primary and secondary contact recreational activities. They shall be suitable for compatible industrial processes and cooling, hydropower, aquaculture uses, navigation, and irrigation and other agricultural uses. These waters shall have good aesthetic value with the caveat that primary contact recreational activities may be impacted due to pathogens from approved wastewater discharges.

The Blackstone River is currently listed by the RIDEM Office of Water Resources on the State of Rhode Island 2016 303(d) List of Impaired Waters, dated March 2018. The 2016 303(d) list identifies water bodies within the state, which may not currently meet Rhode Island Water Quality Standards and for which a Total Maximum Daily Load (TMDL) may be needed. TMDLs are water quality restoration plans that identify water quality goals, necessary pollutant reductions, sources, and implementation plans to achieve the required reductions. RIDEM identifies the segment of the Black Stone River adjacent to the Site as Water Body ID RI0001003R-01A and lists the impairments as cadmium, iron, lead, mercury, PCB, low dissolved oxygen, nutrients, and pathogens.

A review of the *Environmental Resource Map* prepared by RIDEM (http://www.dem.ri.gov/maps/) shows that the Site is located in the Blackstone River – West River to Peters River Drainage Basin. Stormwater at the Site is managed naturally for the most part and either flows downgradient from west to east directly into the Blackstone River or is sequestered by infiltration through the soils.

Based on a review of Federal Emergency Management Agency (FEMA) Map #44007C0069G dated March 2, 2009, the majority of the Site is located within Zone X. The Zone X designation is for areas with a 0.2% annual chance of flood; areas of 1% annual chance of flood with average depths of less than 1 foot or with drainage areas less than 1-square mile; and areas protected by levees from 1% annual chance of flood. The northeastern portion of the Site is located with an "AE, 0.2% Annual Chance Flood Hazard Zone."

2.2.4 Environmentally Sensitive Area

According to the overlay maps maintained by RIDEM's Office of Water Resources, the Site is located within a Natural Heritage Area. The Site is also bordered to the east by the Blackstone River which is part of the John H. Chafee Blackstone River Valley National Heritage Corridor, a federally designated national park (note that the Site's classification as a Natural Heritage Area is not related to this national park).

2.3 APPLICABLE REULATORY CRITERIA

Based on the foregoing description of the Site and surrounding area, and our interpretation of the regulatory requirements provided in RIDEM's Remediation Regulations, RIDEM's August 2018 Water Quality Regulations, and the Federal Safe Drinking Water Act, the following regulatory criteria apply to the Site:

Potentially Impacted Material	Applicable Criteria
Soils	Residential Direct Exposure Criteria GB Leachability Criteria
Groundwater	GB Groundwater Objectives

3.0 SIR SUMMMARY AND LIMITED DESIGN PHASE INVESTIGATION

The April 24, 2019 SIR prepared by GZA documents studies conducted at the Site to address the requirements for evaluation of the nature and extent of environmental contaminants as presented in Section 1.8 of RIDEM's Remediation Regulations. To address data gaps in the SIR, GZA also conducted a Limited Design Phase Investigation (LDI) in October and November 2019. The LDI was divided into three tasks: 1) Evaluate the extent of total petroleum hydrocarbon (TPH) impacted soil and groundwater in the vicinity of MW-7 and MW-8 where TPH was previously identified; 2) Complete four borings and one monitoring well in the northwestern portion of the Site which were not completed as part of the initial site investigation; and 3) Conduct a biovent pilot test. The LDI is discussed in detail below.

3.1 SITE INVESTIGATION REPORT

On the behalf of RIDEM, GZA conducted a subsurface investigation at the Site. The objective of the study was to evaluate potential impacts to soil and groundwater from previously identified Recognized Environmental Conditions (RECs). This study is described in the April 24, 2019 SIR and the explorations are shown on **Figure 2**; the following summary has been developed from the testing and observations conducted as part of this study:

1. GZA conducted a subsurface investigation at the Site consisting of the completion of 14 soil test borings and the collection of soil samples for field screening and laboratory analysis. The 14 borings (B-1 through B-3, B-5 through B-11, MW-3, MW-4, MW-7 and MW-8) were completed to a depth of 8 to 20 feet below ground surface (bgs). Two of the borings were located directly downgradient of the #6 oil UST bunker. Four borings were completed as shallow overburden groundwater monitoring wells. Soil samples recovered during the boring program were observed to generally consist of fine to coarse sand with varying amounts of gravel and silt in all borings. A majority of the borings also had traces of asphalt, brick and concrete between 0-10 ft bgs, indicating that the area has been filled. Groundwater was encountered at a depth of 8 to 13 feet bgs. A layer of petroleum impacted soil was observed in MW-7 and MW-8 from 10 to 20 feet bgs.

2. Thirteen soil samples, including one blind duplicate, were submitted to the laboratory and tested for volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), TPH, and/or PP-13 metals. Method 1 Industrial/Commercial Direct Exposure Criteria (I/C-DEC) exceedances for metals and certain PAHs were noted in MW-3, MW-4, BD11/28/2018, B-3, B-5, B-6, B-7 and B-11 in samples collected at depths ranging from 0 to 10 feet bgs. TPH also exceeded the I/C-DEC and GB Leachability Criteria in samples from MW-7 (10-15 feet), B-1 (5-10 feet) and B-10 (7.5-9 feet). MW-8 and B-1 are located immediately downgradient of the oil UST bunker.

3. One round of groundwater samples was collected from the four newly installed wells. Results showed no exceedances of the GB Groundwater Objective. TPH was detected at significant levels (6.76 and 2.61 mg/L) in MW-7 and MW-8. RIDEM has not established a GB Groundwater Objective for TPH and we compared the TPH results to the Massachusetts Contingency Plan (MCP-310 CMR 10.00) RCGW-2 Standard for TPH of 5 mg/L. The TPH concentration detected in MW-7 exceeded this criteria. It should be noted that the SIR submitted to RIDEM in April 2019 noted exceedances of the GB Groundwater Objective for benzene and ethylbenzene in MW-8. These exceedances were incorrectly noted in the report tables due to a unit conversion error. All results from this well are below the GB Objectives as shown in **Table 3**.

4. Groundwater was observed in the monitoring wells at depths ranging from 7 to 13 feet bgs.

5. A VI screening indicates that VI risk may be present if a building were to be constructed onsite in the future; currently the VI pathway is incomplete, as no buildings are located at the Site.

This investigation identified TPH, metals and certain PAHs in soil above the GB-Leachability Criteria and/or I/C-DEC. It was GZA's opinion that additional investigation is required to fully characterize environmental conditions at the Site and refine the proposed remedial design.

3.2 LIMITED DESIGN INVESTIGATION

An LDI was completed by GZA in October and November 2019. The LDI was divided into three tasks: 1) Further evaluate the extent of total petroleum hydrocarbon (TPH) impacted soil and groundwater in the vicinity of MW-7 and MW-8 where TPH was previously identified; 2) Complete four borings and one monitoring well in the northwestern portion of the Site which could not be completed as part of the initial site investigation; and 3) Conduct a biovent pilot test in the vicinity of the previously identified petroleum LNAPL plume.

The investigation included 14 Geoprobe® explorations, with two completed as groundwater monitoring wells and five completed as soil gas probes; field-screening and laboratory analysis of soil samples; collection and laboratory analysis of groundwater samples from the two newly installed groundwater monitoring wells; a wellhead elevation survey; and a biovent pilot test. The explorations are shown on **Figure 2**.

The subsurface exploration program was executed in accordance with the *Site-Specific Quality Assurance Project Plan Addendum*[1] (*SS-QAPP Addendum*) that GZA developed for this project. The *SS-QAPP Addendum* supplemented information contained in the previously approved Revised *SS-QAPP* dated November 19, 2018, and the November 2018 *Generic QAPP* (RFA 19011). The *SS-QAPP Addendum* was approved by EPA and RIDEM prior to implementation.

3.2.1 Soil Borings and Well Installations

Between October 28 and November 8, 2019 GZA observed the completion of 14 borings (B-12, B-13, B-17, B-17R, B-18, B-19, B-20, MW-14, MW-16 and SG-1 through SG-5) by Hoffman Environmental Services of North Kingstown, Rhode Island, using a direct-push/hollow stem auger Geoprobe® rig. Borings were advances to depths of between 5.3 and 34.5 ft bgs.

Two soil borings were completed as groundwater monitoring wells (MW-14 and MW-16) consisting of a 0.010-inch factory slotted nominal 2-inch inside diameter, flush joint, schedule 40 PVC well screen with solid PVC riser. The annular space between the well screen and the borehole was filled with a filter sand pack. The sand pack was carried to a depth of 2-feet above the slotted section of the well screen where a 2-foot thick bentonite seal was placed. Any non-contaminated drill cuttings (based on PID field screening results, described below) were then placed above the bentonite seal to ground surface.

Five soil borings were completed as soil gas monitoring probes (B-18 and SG-1 through SG-4) consisting of a 0.010-inch factory slotted nominal 1-inch inside diameter, flush joint, schedule 40 PVC well screen with solid PVC riser. The annular space between the well screen and the borehole was filled with a filter sand pack. The sand pack was carried to a depth of 2-feet above the slotted section of the well screen where a 2-foot thick bentonite seal was placed. Any non-contaminated drill cuttings (based on PID field screening results, described below) were then placed above the bentonite seal to ground surface.

A GZA field engineer was present during the exploration activities to coordinate and document the program, classify soils, prepare boring logs, field-screen soil samples and collect/prepare samples for laboratory testing. Samples were characterized in the field and boring logs maintained for each borehole. Copies of boring logs are provided in **Appendix B**.

Soil samples were collected continuously as described in GZA's SOP K-2 (refer to GZA's *Generic QAPP*) by pneumatically advancing a 5-foot, 2-inch ID steel split-spoon equipped with a dedicated acetate lining. Samples were recovered from a depth of 0 to 5, 5 to 10, 10 to 15, 15 to 20, 20 to 25, 25 to 30 and 30 to 35 feet bgs or refusal. Soil samples recovered for screening (in accordance with GZA's SOP #4.1.3, included in the *Generic QAPP*) and analysis were transferred to clean, unpreserved 8-ounce glass jars, and 40 ml methanol-preserved glass vials with septa caps, using a stainless-steel trowel. Select soil samples were submitted for laboratory analysis, as described below. The stainless-steel trowel was washed with an Alconox®/water solution and rinsed with distilled water between each sample. A new acetate liner was employed for each sample.

Field quality control sampling and testing included the collection of an equipment blank sample and blind duplicate.

3.2.2 Observed Subsurface Conditions

Soil samples recovered during the boring program were observed to generally consist of fine to coarse sand with varying degrees of gravel and silt in all borings. Most of the borings also had traces of asphalt, brick, concrete and glass between 0-10 ft bgs (0-15 ft on the northwestern portion of the Site at borings B-12 and MW-14), indicating that the area has been filled. Glacial till was observed in three borings (B-12, SG-1 and SG-5) at depths between 12-18.5 ft bgs. Groundwater was encountered at depths of 15 to 28 ft bgs. A layer of black, petroleum impacted soil (sheen and petroleum-like odor) was encountered in B-18, B-19, B-20, MW-16, SG-1, SG-3 and SG-4 between 4 to17.5 ft bgs; these borings are located downgradient of the oil UST bunker. A layer of brown/black impacted soil (including green staining and fibrous material) was encountered in B-18 between 6 and 8 ft bgs; this boring is also located downgradient of the oil UST bunker. We were unable to recover soil samples from two borings (B-17 and B-17R) that were located on the concrete slab in the central portion of the property due to refusal on concrete at depths of

[1] *Site-Specific QAPP Addendum* developed by GZA on behalf of RIDEM and signed by EPA on September 24, 2019.

approximately 4 ft bgs. Layers of brick and/or concrete were observed in six borings (B-13, B-15, B-18, B-19, B-20, SG-1) likely due to the presence of brick and/or concrete slabs at varying depths bgs. Refer to the boring logs in **Appendix B** for additional subsurface information.

3.2.3 Soil Sample Field Screening

Soil samples recovered during drilling activities were field screened for total volatile organic compounds (TVOC) using a MiniRae Model 3000 Photoionization Detector (PID) equipped with a 10.6 eV lamp and calibrated with a mixture of isobutylene in air. Soil samples from each boring were screened in accordance with GZA's SOP #4.1.3 (refer to GZA's *Generic QAPP*). TVOC screening results are provided on the boring logs attached as **Appendix B**.

The TVOC readings were generally low, i.e. below 5 ppm, except in B-18, B-19, B-20, MW-16 and SG-1 between approximately 5 and 17 feet bgs, where elevated (*i.e.*, above 10 ppm) PID screening results were observed.

3.2.4 Investigation Derived Waste

Drill cuttings with PID readings above 10 ppm were placed in 55-gallon steel drums for subsequent off-Site disposal, in accordance with the SS-QAPP. The resulting drums are temporarily stored on-Site and will be disposed offsite at a properly licensed facility.

All other soil cuttings were used as backfill in each borehole, in accordance with the SS-QAPP, as the soil TVOC screening results were below 5ppm.

3.2.5 Soil Sample Analysis

A total of 10 soil samples were collected as part of the LDI, including one blind duplicate sample, one trip blank, and one equipment blank, placed in laboratory provided containers, preserved as appropriate, packed in ice chests and transported under chain-of-custody protocol to ESS Laboratory in Cranston, Rhode Island. Three of the samples (MW-14[2], B-13 and B-14) were analyzed for the following parameters:

- VOCs via EPA Method 8260B;
- PAHs via EPA Method 8270C;
- PP-13 Metals via EPA Method 6010B;
- Mercury via EPA Method 7470;
- PCBs via EPA Method 8082; and
- TPH via EPA Method 8100M.

Seven of the samples (MW-16/S-4B, B-19/S-1C, B-20/S-4A, B-20/S-4B, SG-1/S-3B, SG-4/S-2D and SG-5/S-3B) were analyzed for TPH only. Four of these samples (B-19/S-1C, B-20/S-4A, SG-1/S-3B and SG-4/S-2D) were also submitted for TPH fingerprint laboratory analysis via EPA Method 8100M.

A sample was not collected from B-12, due to poor soil recovery during drilling. There were no other deviations from the approved SS-QAPP.

[2] *Sample results reported as MW-15 in laboratory certificates.*

3.2.6 Soil Data Validation and Data Usability

As required by the SS-QAPP, GZA performed a modified Tier I Plus data validation/data usability assessment for the following analytical data report:

- 19J1002 dated November 5, 2019 – analysis of soil samples for VOCs, PAHs, PP-13 Metals, Mercury, TPH and PCBs; and
- 19J1092 rev1 dated November 15, 2019 – analysis of soil samples for TPH and TPH fingerprint.

This assessment was completed in accordance with the *Region I, EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses (12/96)* and the requirements identified in GZA's Generic QAPP dated October 2018.

As indicated in the Analytical Data Report attached in **Appendix C**, all soil samples were received intact and under appropriately executed chains-of-custody. Based on review of the QA/QC documentation, we conclude the following.

3.2.6.1 Preservation

Temperatures recorded on the chains-of-custody indicated that samples were cooled to the proper temperature. All samples were preserved in the manner appropriate for the analytical method.

3.2.6.2 Holding Times

All samples were prepared and analyzed within the method-specified holding times. Thus, no results require qualification on this basis.

3.2.6.3 Trip Blanks

Report 19J1002 indicates that a trip blank was provided for VOC analysis, with only methylene chloride detected above the laboratory reporting limits. Methylene chloride was detected above the laboratory reporting limits in two other samples. All three methylene chloride results detected above laboratory reporting limits are already qualified as estimated (J). Thus, no additional qualification is required from the results.

3.2.6.4 Equipment Blanks

The soil equipment blank (E-Soil) was submitted for VOC analysis with the groundwater samples under Report 19K0746. Report 19K0746 indicates that no detects were reported above the laboratory reporting limits in the soil equipment blank. Thus, no results require qualification on this basis.

3.2.6.5 Method Blanks

No detects were reported above the laboratory reporting limits in the laboratory method blanks. Thus, no results require qualification on this basis.

3.2.6.6 Lab Control Samples

Lab control samples were prepared and analyzed for all analytes. All recovery values were within acceptable ranges for all target analytes. Thus, no results require qualification on this basis.

3.2.6.7 Surrogate Recoveries

All surrogate recovery results were acceptable for all samples. No data required qualification due to surrogate recovery.

3.2.6.8 Blind Duplicate Recoveries

Blind duplicate soil samples were prepared and analyzed as presented below.

- Report 19J1002– The sample identified as BD10282019 was prepared for B-13 at a depth of 2-4 ft bgs and analyzed for VOCs, PCBs, TPH, PAHs, and PP-13 Metals. Eight metals and two VOCs were detected above the laboratory reporting limits in both samples. The RPD values for mercury and naphthalene were not within the +/-50% acceptance criteria; thus, they have been qualified estimated (J) for this sample.

3.2.6.9 Quantitation Limits

The laboratory reporting limits exceeded the project-required detection limits for a number of compounds, due to the observed onsite contamination described in Section 3.80. Given the levels of contamination observed, the quantitation limits are considered acceptable.

3.2.6.10 Project Narratives

No other deviations are noted in the project narratives.

The above described laboratory results are considered useable as qualified and are sufficient to meet the project data quality objectives.

3.2.7 Soil Sample Results

Soil results are compiled in **Table 1** and compared to the applicable Method 1 I/C-DEC and GB-Leachability Criteria as outlined in Section 1.8.3 of the Remediation Regulations. Copies of the laboratory analytical reports are attached in **Appendix C**. As shown in **Table 1**, TPH was above the I/C-DEC in three of the LDI program samples. The TPH exceedances were located downgradient of the oil UST bunker in areas where visual petroleum impacts were observed. The laboratory identified the TPH samples from B-19, B-20, SG-1 and SG-4 as "diesel fuel and lubricating oil ranges". This indicates that the contamination is likely not from a leak in the No.6 oil UST (unless the UST was used for storage of other petroleum products) and is likely from former mill activities. In addition, a benzo (a) pyrene I/C-DEC exceedance was observed in MW-14 (0-2 foot sample). Note that soil exceedances were generally located under concrete, asphalt or in vegetated areas; as such the potential entrainment of contaminants by wind or erosion is minimal.

3.2.8 Groundwater Sampling Technique

On November 22, 2019, groundwater samples were collected from newly installed wells MW-14 and MW-16. The groundwater sampling program was executed in accordance with the SS-QAPP.

Groundwater samples were collected in general accordance with EPA's September 19, 2017 *Low Stress (low flow) Purging and Sampling Procedure* (low flow SOP) and in accordance with revised GZA SOP # 3.1.2 (refer to GZA's *Generic QAPP*). As part of that sampling methodology, well stabilization was evaluated through the measurement of specific water quality parameters recorded during the purging process. A variable speed peristaltic pump was utilized to control the rate of purging and limit the drawdown caused by this operation. To avoid cross contamination, dedicated 3/8-inch-outer-diameter (OD) polyethylene tubing, installed in each of the existing wells, was utilized as the intake and discharge tubing for the pumps. Pharmaceutical grade tubing was employed as the pump head tubing and connected to the intake and discharge tubing by clamps sufficient to prevent the introduction of air into the sample.

Prior to sampling, each well was gauged for light and dense non-aqueous phase liquids (LNAPL and DNAPL); no NAPL was observed. A sheen was noted on groundwater from well MW-16.

During the sampling, field readings were recorded for pH, temperature, specific conductance, dissolved oxygen, oxygen reduction potential and turbidity using a YSI Pro Series multi-meter with a flow-through cell. Field equipment used to perform the testing was calibrated according to the manufacturer's instructions before sampling. Field readings are presented in the field sampling logs, attached as **Appendix D** and are summarized on **Table 2**. Results of field screening parameters were generally within the range expected for groundwater in Rhode Island.

As indicated on the logs, the readings generally stabilized prior to collecting the samples. The samples were collected in hydrochloric acid-preserved 40-ml glass vials with septa caps and sulfuric acid-preserved 1-L amber glass jars, packed in an ice filled cooler, and transported under chain-of-custody protocol to ESS Laboratory of Cranston, Rhode Island for analysis.

Purge water from the round of well sampling was placed in a 55-gallon steel drum for subsequent off-Site disposal. The resulting drum is temporarily stored onsite and will be properly disposed of at a licensed off-site facility.

3.2.9 Groundwater Sample Analysis

A total of two groundwater samples, one blind duplicate sample, one trip blank and one equipment blank were collected, packed in an ice chest and transported under chain-of-custody protocol to ESS Laboratory for VOC analysis.

3.2.10 Groundwater Data Validation and Usability

As required by the Site-Specific QAPP, GZA performed a modified Tier I Plus data validation/data usability assessment for the following Analytical Data Report:

- 19K0746 dated December 6, 2019 – analysis of groundwater samples for VOCs.

As indicated in the Analytical Data Report attached in **Appendix C**, water samples were received intact, within the proper temperature range and appropriately preserved.

The results for our data validation are summarized in the following subsections.

3.2.11 Trip Blanks

Report 19K0746 indicates that a trip blank was provided for VOC analysis, with no constituents detected above the laboratory reporting limits. Thus, no results require qualification on this basis.

3.2.12 Equipment Blanks

Acetone was detected at a concentration exceeding the laboratory reporting limits in the equipment blank (E-GW) associated with Report 19K0746. Acetone was not detected above the laboratory reporting limit in the associated samples. Thus, no results require qualification on this basis.

3.2.13 Method Blanks

No compounds were reported above the laboratory reporting limits in the laboratory method blanks. Thus, no results require qualification on this basis.

3.2.14 Lab Control Samples

Lab control samples were prepared and analyzed for all analytes. The LCS/LCSD analysis for SVOCs had one analyte (hexachloroethane) that was below the acceptable QA/QC limits. This analyte was only tested for in one sample (Drum) and

was non-detect. This non-detect results has been rejected (R). In all other cases, recovery values were within acceptable ranges for all target analytes. Thus, no results require qualification on this basis.

3.2.15 Surrogate Recovery/Internal Standards

The surrogate analysis for SVOCs had one analyte (2,4,6-tribromophenol) that exceeded the QA/QC limits. This analyte was only tested for in one sample (Drum) and was non-detect and therefore accepted without qualifications. No other surrogate recoveries were reported outside acceptable QA/QC ranges. Thus, no results require qualification on this basis.

3.2.16 Blind Duplicate Recoveries

Report 19K0746-- A blind duplicate groundwater sample was prepared for sample MW-14 and analyzed for VOCs. No VOCs were detected above the laboratory reporting limits in either sample. Thus, these results do not require qualification on this basis.

3.2.17 Quantitation Limits

The laboratory reporting limits generally satisfy the project-required detection limits. The laboratory reporting limits for 1,2-dibromo-3-chloropropane and 1,2-dibromomethane exceeded the GA Groundwater Objectives. Note that the GA Groundwater Objectives cannot be achieved for these compounds due to the limitations of the current analytical methodologies. The laboratory reporting limits exceeded the project-required detection limits for mercury, antimony, and thallium. These metals were all non-detect in the sample tested.

3.2.18 Project Narratives

No other deviations are noted in the project narratives.

The above described laboratory results are considered useable as qualified and are sufficient to meet the project objectives.

3.2.19 Groundwater Sample Results

Groundwater samples from the newly installed wells were analyzed for VOCs by EPA Method 8260B. Analytical results are compiled in **Table 3** and compared to the GB Groundwater Objectives. As shown, no VOCs were detected above laboratory reporting limits.

3.2.20 Groundwater Elevation Survey

Depth to static groundwater on a Site-wide basis ranged from approximately 13 to 22 feet bgs, based on readings collected on November 22, 2019. Using wellhead elevation survey data collected by GZA on November 27 and 28, 2018 and January 17, 2020; groundwater elevations were found to range from 147 to 155 feet in reference to the North American Vertical Datum of 1988 (NAVD 88). Groundwater elevation measurements are summarized in the table below and shown on Figure 2. Based on the groundwater elevations, groundwater flow is inferred to be easterly, toward the Blackstone River.

Well ID	Well Type	November 22, 2019 Groundwater Elevation (feet)
MW-7	Shallow Overburden	152.6
MW-8	Shallow Overburden	155.1
MW-14	Shallow Overburden	147.9
MW-16	Shallow Overburden	155.2

We note that localized groundwater flow patterns may vary significantly from those shown due to heterogeneous subsurface conditions, the presence of underground utilities, river elevation changes, and variations in rainfall recharge.

3.2.21 Vapor Intrusion Screening

VOCs were not observed in the groundwater at the two newly installed wells (MW-14 and MW-16). VOCs were observed in groundwater in two older well locations (MW-7 and MW-8); the Massachusetts GW-2 Groundwater Standards, which are applicable for vapor intrusion (VI), are presented in **Table 3** for comparison only, as Rhode Island has not established vapor intrusion groundwater criteria. As shown, an exceedance of the GW-2 standards is present, indicating a potential vapor intrusion risk if buildings are constructed in the future over certain portions of the Site. Vapor intrusion is currently an incomplete exposure pathway, as the property is currently vacant and no buildings remain. Any future onsite buildings constructed in areas of known or suspected VOC contamination should be equipped with a sub-slab depressurization system (SSDS) to mitigate potential VI exposures.

3.2.22 Biovent Pilot Test

A limited biovent pilot test was performed by GZA on November 22, 2019 using existing and newly installed wells. Vacuums were applied at test monitoring wells MW-8 and MW-16, the resultant extraction rate, vacuum at each test location, and vacuum response in the surrounding monitoring wells was recorded. The TVOC PID readings of samples of the vapor extracted from the monitoring wells were recorded at the start, middle and end of each of the test periods. One summa canister sample was collected from each pilot test well MW-8 and MW-16 for TO-15 VOC laboratory analysis. **Appendix E** presents the field monitoring results and plots showing the vacuum response with distance from each of the test wells. The laboratory analysis for the pilot test soil vapor samples is in **Appendix C**.

3.2.23 Pilot Test Results

The pilot test results for the wells showed that at applied vacuums of approximately 5 to 8 inches water column (WC) at each of the pilot test wells and an extraction rate of 10 standard cubic feet/minute (scfm at each well operating alone, a radius of influence (ROI) of approximately 30 to 40 feet was achieved (vacuum response of at least 0.020 inches WC column at the outer limit of the ROI) within the unsaturated zone. **Appendix E** includes the vacuum responses observed at the monitoring points at these low vacuums. At these flow rates, at least 0.7 pore volume exchanges per day will be achieved within the 30-foot radius of influence of each vent well. This is judged by GZA to be more than adequate to maintain an aerobic environment within the unsaturated zone of the petroleum impacted area.

Consistent with the assumed presence of naturally occurring bacteria degrading the fuel oil, significantly depressed oxygen and elevated carbon dioxide levels were observed in the vapor samples extracted from MW-8 and MW-16. Ambient atmospheric levels of oxygen and carbon dioxide gases are approximately 21% and 0.5%, respectively. Bacteria in the subsurface will consume oxygen (by respiration) and generate carbon dioxide as they consume the fuel oil and any other biodegradable constituents that may be present naturally. Oxygen (O_2) levels, readings between 3% and 10%, and carbon dioxide (CO^2), readings between 11% and 18%, were recorded at MW-8 and MW-16. In addition, we note given the short duration of soil vapor extraction during this pilot test, we expect that these values represent the higher end of the O_2 readings and lower end of CO_2 that will be observed during long term operation as increased air flow is drawn into the subsurface and aerobic biodegradation progresses within the fuel oil impacted zone.

Laboratory analysis of the soil vapor extracted from MW-8 and MW-16, as expected and consistent with the TVOC PID readings, detected low-level concentrations of petroleum hydrocarbons. Aggregate VOC concentrations at MW-8 and MW-16 were approximately 6 and 38 ppbv, respectively. TVOC PID readings for these locations, at the time of the sampling, were approximately 4 and 7 ppmv, respectively

The test showed that at modest applied vacuums, approximately five wells will be needed to achieve the desired radius of influence and pore volume exchanges to promote aerobic degradation over the estimated 100-foot by 100-foot residual petroleum contaminated area. As no significant LNAPL accumulation was observed in the Site wells during the last year or during the test, LNAPL that may accumulate in the wells can be removed by routine bailing, if needed. If LNAPL recovery rates were to increase (not expected), the wells may be modified to incorporate automated petroleum product recovery units.

As a contingency, while we don't anticipate that we will observe any significant dissolved petroleum constituent migration after the implementation of the full-scale biovent system, GZA has constructed the new wells to allow for conversion to use as air sparge/recirculation wells below the groundwater table, if needed. These plans would only be implemented if groundwater monitoring data indicated that migration of significant petroleum hydrocarbon concentrations was occurring or if the conversion might significantly increase the rate of fuel oil removal.

3.2.24 Conclusion

Based on the LDI:

- Contamination observed in soil on the northwestern portion to the Site is similar to soil contamination observed at other areas of the Site (I/C DEC exceedances of certain metals and/or PAHs), outside the petroleum-impacted area;
- Petroleum impacts are present in an approximately 100 foot by 100-foot area downgradient of the UST bunker; and
- Based on the pilot test, bioventing should be effective in reducing the observed petroleum contamination downgradient of the UST bunker.

The recommended alternative in the SIR (oil UST removal, in-situ soil treatment, Site fencing, long-term groundwater monitoring and recording of an ELUR) should be enacted in accordance with this RAWP.

4.0 SITE DEVELOPMENT

Three Site reuse options are being considered by the City: solar array, recreational field or redevelopment (residential, commercial and/or industrial). Any future Site redevelopment will be conducted in accordance with the final Environmental Land Use Restriction (ELUR) and Soil Management Plan (SMP) (see Section 7.5).

5.0 RELEASE BACKGROUND

The Site is listed with RIDEM as a result of the presence of certain PAHs, metals and TPH in soils at concentrations above RIDEM's I/C-DEC and/or GB Leachability Criteria.

Groundwater monitoring completed at the Site included the collection of samples from six monitoring wells for VOCs and TPH. The resultant data indicated no exceedances when compared to the Method 1 GB Groundwater Objectives, though TPH was detected at significant levels in two wells. RIDEM has not established a GB Groundwater Objective for TPH.

Additional details are included in Section 3.

6.0 PROPOSED REMEDIAL ALTERNATIVE

As presented in GZA's April 24, 2019 SIR, Alternatives #3 and #4 are the recommended remedial alternatives and are presented below as Phase I (Alternative 3) and Phase II (Alternative 4). Phase I consists of:

1. The LDI that was completed in October and November 2019 (See Section 3);
2. Emptying and cleaning the oil UST to prevent any future leaks. The tank will be left in place and removed as part of Site redevelopment;
3. In-situ soil treatment using a biovent system to remediate observed TPH impacts;
4. Extending the Site fence to encompass the entire Site perimeter (except along the Blackstone River which forms a natural barrier to trespassing) to restrict Site access.
5. Implementing a long-term monitoring program (described in Section 7.9.3), including monthly monitoring of the bio-vent/bio-sparge system and monitoring of five monitoring wells; and
6. Implementation of an ELUR[3] on the property, prohibiting future groundwater use, requiring buildings constructed onsite to include a sub-slab depressurization system and limiting land use to restricted residential activities. The ELUR will include a SMP for long-term maintenance and monitoring after the completion of remedial activities.

Phase II will be implemented when the Site is redeveloped and consists of Site capping based on the Site reuse option selected by the City. There are three Site capping options, in accordance with the three Site reuse options being considered by the City:

1. Solar array - Site capping would be a geotextile warning barrier and 6-inches of crushed stone (or a RIDEM approved equal);
2. Recreation field - Site capping would consist of a geotextile warning barrier and 1-foot of clean soil; and
3. Redevelopment (residential, commercial or industrial) - We have assumed that the proposed building/parking lot will be roughly the same footprint as the former building/parking lot and the remainder of the Site will be capped with a geotextile and 1-foot of clean soil.

An Analysis of Brownfields Cleanup Alternatives (which was also included in the SIR) is included in **Appendix F.**

7.0 PROPOSED REMEDIAL ACTIONS

The required elements of this RAWP, as outlined in Section 6.0, are presented in detail in the following subsections. For ease of review, they are keyed to Section 1.10 of the Remediation Regulations, as appropriate.

7.1 REMEDIAL OBJECTIVES (RULE 1.10.2)

The contaminants of concern identified at the Site included certain PAHs, metals and TPH in soil, as well as TPH in groundwater.

Based on the applicable regulatory criteria and the exceedances observed at the Site, the following remedial objectives have been established.

- Reduce the potential that current and future Site occupants and visitors come into contact with soils containing contaminants at concentrations above the Residential Direct Exposure Criteria (RDEC) and I/C-DEC through the use of Engineered Controls (ECs);

[3] Please note that an ELUR was filed on November 15, 1999 for 117 First Avenue (Plat 6/Lot 117). A new ELUR, consistent with the Department's current model will be recorded on the property. An ELUR has not been recorded on Plat 6 Lots 102 & 118)

- Establish procedures/protocols for soils management during the planned remedial/development activities and future Site use activities that involve disturbances of Site surfaces; and

- Protect the long-term effectiveness of the remedial measures through implementation of relevant portions of an ELUR/Institutional Control (IC).

In accordance with Section 1.10 of the Remediation Regulations, this RAWP addresses remedial objectives for all potentially impacted media (soil, groundwater, surface water/sediment and air). Remedial objectives for each of the media prescribed by the regulations are discussed below.

7.1.1 Soils (Rule 1.10.2.A3)

RDEC exceedances were limited to certain PAHs, metals and TPH. As the proposed future use of the Site is considered a commercial exposure scenario under RIDEM regulations, remedial objectives for any future soil removal and/or on-site management have been included in the SMP. The selected remedial approach is consistent with the intent of the Remediation Regulations.

The objectives of the soil remedial program will be to: 1) reduce TPH concentrations on the Site to levels compliant with the RDEC and the GB Leachability Criteria; and 2) prevent direct human exposure with contaminated surface soil through the use of an engineered cap. The first objective will be accomplished through the treatment of TPH within the source area, using the *in-situ* biovent method, which utilizes induced subsurface air flow to remove TPH from unsaturated soil. As described in Section 3.2.22 above, GZA performed an 8-hour duration pilot test for the proposed biovent system and our biovent system design, described in Section 8, is based on the result of that pilot test.

Compliance will be evaluated through the implementation of a confirmatory sampling and analytical program meeting the requirements of Section 1.10 of the Remediation Regulations. Clean-up confirmation sampling associated with the soil venting process will be conducted after a sufficient period of operation of the biovent treatment system. We anticipate that these initial confirmatory soil samples will be collected 24 to 36 months after system start-up, depending on biovent system monitoring results.

The second objective will be achieved through construction of an engineered cap. At this time, as described in Section 6.0, Site redevelopment is in the conceptual planning stages and the details of future Site capping are based on the three Site reuse options being considered by the City. Until the Site is redeveloped, the fence will be extended to encompass the entire perimeter (except along the Blackstone River which forms a natural barrier to trespassing) to restrict Site access.

7.1.2 Groundwater (Rule 1.10.2.A1)

Laboratory testing did not identify any significant degradation of groundwater quality at the Site (*i.e.,* all tested parameters were below GB Groundwater Objectives); though TPH was detected in one well above the Massachusetts RCGW-2 criteria. RIDEM has not established a GB Groundwater Objective for TPH.

The objective of the groundwater remedial program will be to reduce onsite TPH concentrations at the downgradient wells from the source area. It is likely that the TPH observed in groundwater on the Site will naturally attenuate once the TPH contaminated soil is treated by the biovent system. This will be evaluated through a long-term groundwater monitoring program.

7.1.3 Air (Rule 1.10.2.A4)

The contaminants present in Site soils were limited to certain PAHs, metals and TPH. In accordance with the SMP, dust control measures will be implemented during any future construction activities to mitigate the generation of wind-blown dust. VOCs

were observed in groundwater at two locations and TPH was observed in groundwater at three locations, indicating a potential VI risk if buildings are constructed in the future over certain portions of the Site. VI is currently an incomplete exposure pathway, as the property is currently vacant and no buildings remain. Any future onsite buildings constructed onsite should be equipped with a SSDS to mitigate potential VI exposures.

The objective of the current remedial program with respect to air quality is to mitigate the potential hazards associated with VI in future structures to be constructed at the Site. This will be addressed through reduction of soil contaminant concentrations to below applicable or relevant and appropriate VI benchmarks. This demonstration will be made in conjunction with the assessment of soil conditions described above in Section 1.10.

7.1.4 Surface Water/Sediment (Rule 1.10.2.A2)

Erosion controls will be established, as necessary, during any future construction projects.

7.2 PROPOSED REMEDY (RULE 1.10.3)

The following sections describe the remedial programs developed to address the remedial objectives described in Section 6.0. The recommended alternative involves a combination of active remedial measures, coupled with engineered and institutional controls, which address the requirements of applicable regulatory programs. Remedial measures are grouped into Phase I and Phase II activities, as described above.

7.2.1 Interim Engineered Controls (Phase I)

Prior to development, access to undeveloped areas of the Site will be restricted by fencing. Currently, fencing restricts access along the majority of the Site. Additional fencing will be installed to encompass the entire Site perimeter (except along the Blackstone River which forms a natural barrier to trespassing). Thereafter, as development proceeds, the City will erect and maintain such fencing as may be necessary to restrict access to any undeveloped and/or un-remediated portions of the Site. In addition, the onsite UST will be emptied and cleaned to prevent any future leaks. The tank can be left in place and removed as part of Site redevleopment

7.2.2 SVE System Design (Phase I)

The pilot test data indicates that five SVE test wells can achieve a radius of vacuum influence of 30 feet, at relatively low (5 to 8 inches WC) vacuums and flows of approximately 10 standard cubic feet per minute (scfm). We propose to install five 4-inch diameter PVC SVE wells (SVE-1 through SVE-5), within the residual petroleum area, at the approximate locations shown on **Figure 2**. The wells will be installed with their screen set from approximately 4 to 14 feet bgs, solid pipe from 14 to 17 feet, and a second screen from 17 to 22 feet below the slab surface, utilizing a Hollow Stem Auger. Ten feet is the estimated average depth of the groundwater table below ground surface. As shown in **Figure 2**, at these radii of influence, vacuum and soil vapor flow will be achieved over the estimated area over which TPH soil exceedances may exist. In addition, multiple wells operating together will have an increased vacuum response. With all wells operating it may be possible to operate at a lower flow rate and still achieve vacuum control and the maintenance of aerobic conditions across the residual fuel oil footprint. With a total of five SVE wells operating at vacuums of no more than 10 inches of WC, we anticipate total rates of vapor extraction from the entire SVE system would be approximately 50 scfm. Over the fuel oil impacted area this flow rate will result in 0.7 pore volume exchanges per day in the unsaturated zone (30-foot ROI area and thickness of 10 feet). We may adjust the system to operate at lower vacuums, if the flow, oxygen and carbon dioxide response is favorable.

The horizontal piping from the individual SVE well will run beneath the concrete floor into a future building or a shed. As shown on **Figure E1** in **Appendix E**, each line will have a soil vapor sampling port, a flow control valve, and an orifice/pitot tube flow meter port. An orifice flow meter will be installed on the combined SVE to allow for measurements of the rate of extracted soil vapor flow.

To achieve the desired flows and vacuums, we propose to install a 1-horsepower (Hp) regenerative blower in the remedial system room/shed, which will also house an inline particle filter, inline muffler, moisture knock-out drum, noise reduction enclosure, and blower control panel. The individual flow control valves will allow for adjustment of applied vacuum, vapor extraction rate, and associated radius of influence at each individual SVE well. A process and instrumentation diagram is given on **Figure E1** in **Appendix E**.

Based on the soil vapor screening and laboratory test results, at the proposed extraction rates, air emission controls should not be required to meet RIDEM Air Pollution Control requirements for discharge to the atmosphere. However, as a precaution, during start-up, we recommend operating with two 180-pound granular activated carbon (GAC) emission control vessels. Our calculations of air emissions, which are provided in **Appendix E**, indicate that the total pounds of VOCs in the extracted soil vapor will be below RIDEM limits for which controls are required. The two 180-pound granular activated carbon vessels will serve to minimize emissions and/or nuisance odors at least until additional data is gathered to show that levels remain low and/or decline further below RIDEM limits.

We will run a 4-week startup test with the two 180-pound GAC units for emission control. During the test, we will monitor TVOC PID readings and VOC levels weekly to develop an estimate of carbon consumption and at the end of the 4-weeks we will update our estimate of long-term emissions and the need for the GAC units. We will also monitor oxygen, carbon dioxide, and methane levels in the extracted soil vapor, to confirm the expected biodegradation response. Based upon the results of startup test, the unit will be registered with the Air Section of RIDEM. A copy of the blower, inline particle filter, inline muffler, moisture knock-out drum, noise reduction enclosure, and GAC unit specifications are in **Appendix E**. When the GAC unit is no longer needed and/or shown to be spent, we will test the GAC for hazardous waste characteristics prior to shipping off-Site for proper disposal at an approved facility.

During the 4-week start-up test we will also assess if the intended radius of vacuum influence has been achieved and if any adjustments or modifications to the SVE system are warranted. There is always the potential for the response to vapor extraction to vary from that observed during the pilot test. Unknown preferential pathways (e.g., subsurface utilities) and/or heterogeneous soil conditions may be present below the floor slab that will alter the estimated response. While we believe we have been conservative in selecting well locations and operating vacuums and flows, we will review the actual response and assess if applied vacuums may be reduced or may need to be increased and if additional extraction wells and/or monitoring points are warranted.

If after a period of time, the VOC levels in the extracted vapor are very low, the system may be vented directly to the atmosphere without GAC treatment, subject to RIDEM review and approval.

7.2.3 Contingency Product Recovery/Air Sparge/Recirculation System Monitoring (Phase 1)

If significant LNAPL thickness occurs in these proposed SVE wells, an automated product recovery system would be connected through existing underground piping to the proposed remedial shed for LNAPL storage. If dissolved constituents are a concern, these wells would be connected to a blower and/or air compressor in the remedial shed via below ground piping. The blower and/or air compressor would be used to inject air at rates of less than a few scfm to each well at intervals judged sufficient to maintain aerobic biodegradation and/or to physically air strip the petroleum constituents from the groundwater, with the soil vapor being captured within the SVE well. We don't expect this system to be required at the Site and are including it only as a contingency.

7.2.4 SVE System Monitoring (Phase i)

The following readings will be recorded on a monthly basis at each SVE well:

- Air flow rates;
- Vacuum response in inches of water column (also at soil vacuum monitoring points);

- TVOC measurements using a PID equipped with a 10.6 eV lamp;
- Oxygen, carbon dioxide and Lower Explosive Limit (LEL) measurements will be collected utilizing a Landtec infrared gas meter; and
- TVOC readings will also be collected at the GAC vessel(s) influent and effluent.

We will prepare a 4-week start-up report, a six-month data report followed by an annual report on the performance of the system for submittal to RIDEM. The first report will also include as-built plans of the system and data collected during installation work. Based upon the results of the start-up test, the GAC units will be registered with the Air Section of RIDEM. Quarterly data reports will summarize our findings during the system monitoring events. An annual report will include our opinion as to whether the desired vacuums for control of potential vapor intrusion have been maintained below the building floor and if any adjustments to operation and/or monitoring are warranted to improve performance and/or achieve control at lower energy use and/or costs.

7.2.5 Site Redevelopment (Phase II)

With regard to environmental capping, development of the Site will include design elements that will make the improvements themselves part of an environmental cap. As a result, permanent environmental capping will take place as development occurs. As jurisdictional soils and groundwater will remain onsite, an ELUR will be necessary to be recorded on the deed for the entire property (Plat Map 6 / Lots 102, 117, and 118). As an ELUR already exists for Lot 117, a revised ELUR will be recorded.

Concurrent with the Site's redevelopment, it will be capped, utilizing one of the following cap components. See **Figure 3** for the site capping specifications.

- Asphalt parking lots, concrete building slabs, and sidewalks (minimum 4-inches thick) underlain by 6-inches of clean fill (or a RIDEM approved equal).
- Any future onsite buildings constructed will be equipped with a passive sub-slab depressurization system, capable of being converted into an active system, to mitigate potential VI risk from VOCs and residual TPH contamination.
- A geotextile warning barrier, overlain by 6-inches of crushed stone (or a RIDEM approved equal). The geotextile warning barrier will meet the following technical specifications.
- A geotextile warning barrier and 12-inches of demonstrated "clean" backfill (common borrow and/or topsoil). The geotextile warning barrier will meet the following technical specifications.

MANUFACTURER	TC MIRAFI (OR EQUIVALENT)
PRODUCT NAME	N-SERIES/140-N
TYPE	NON-WOVEN GEOTEXTILE
MATERIAL OF CONSTRUCTION	POLYPROPYLENE STABLE FIBERS
APPARENT OPENING SIZE ASTM D4751 (US SIEVE)	70
FLOW RATE ASTM D4491 (GAL/MIN/FT2)	135 GAL/MIN/FT2
GRAB TENSILE STRENGTH ASTM D4632 (LBS)	120 LBS
PUNCTURE ASTM D4833 (LBS)	120 LBS

7.2.6 Off-Site Soils (Phase II)

The quality of soil brought to the Site to serve as backfill as part of Site capping will be evaluated with respect to RIDEM's RDEC.

Samples representative of the off-Site soil supply (collected as discrete grab samples or multi-aliquot composites from the source) will be required to be tested for the analyte groups described below.

Analyte	EPA Test Method
TPH	8100M
VOCs	8260
SVOCs	8270
PP-13 Metals	6010 & 7471A
PCBs	8082

The frequency of sampling and testing (for both topsoil and each sub-grade material, if required) will be:

- Full suite of analysis for up to 2,000 cubic yards; and
- Arsenic each 500 cubic yards of material

Soil samples will be collected by GZA by/under the supervision of a qualified environmental professional at their proposed source and submitted for laboratory analysis. The contractor will be informed that the soil supply must meet the RDEC. Soils not meeting these criteria will be rejected for use at the Site. The laboratory testing results of the approved soil source(s) will be provided to RIDEM as part of the *Remedial Action Closure Report*.

7.2.7 Remedial Systems Operating Log (Rule 1.10.14)

An Operating Log will be developed, maintained and will be readily available at the Site during the period of active remediation and subsequent monitoring activities. Subsequent to this period, the log will be retained for a minimum period of three years.

In addition to the data recordings identified above, the Operating Log will include, at a minimum, the following information:

- Dates and time periods during which the remedial components described herein were operating;
- Records of any laboratory analysis and field screening performed as part of the remedial action;
- Description of instances under which the Contingency Plan was implemented; and
- Inspection reports detailing compliance with the remedial specifications described herein and the actions taken to address non-compliant practices/conditions.

A copy of the Operating Log will be provided to the Department at the completion of the project as part of the *Remedial Action Closure Report*.

7.2.8 Design Standards and Technical Specifications (Rule 1.10.10)

Design standards used for the SVE system are described above.

7.2.9 Site Plans and Setup Plans (Rules 1.10.9 and 1.10.11)

The following plans are provided in the Figures section of this RAWP.

- Figure 1 – *Locus Plan*
- Figure 2 – *Exploration Location Plan*
- Figure 3 – *Site Capping Specifications*

7.2.10 Effluent Disposal (Rule 1.10.12)

As described above, extracted soil vapor will be passed through a GAC vessel registered with the OAR. On a periodic, as needed basis, the GAC vessels will be replaced with the fresh/regenerated carbon. Spent carbon will be tested and properly transported and disposed of at an off-site facility.

7.3 BEST MANAGEMENT PRACTICES

During earthwork activities conducted, the contractor will be responsible for the implementation of standard construction best management practices as appropriate, to reduce the likelihood of the release of impacted media from the Site. These will include the following practices:

- **Dust Controls** – The contractor will be prepared to implement dust control measures. The contractor will have arranged for a nearby water supply source (*e.g.*, city water supply via hydrant) at the Site to control airborne dust during soil excavation, filling, grading and other earthwork activities. Initiation of dust control measure will be the responsibility of the contractor. Stockpiled imported soils (if any) will be staged on, and covered with, polyethylene sheeting to control the generation of wind-blown dusts. Excavated onsite soils will be covered with polyethylene sheeting when the stockpiles are not being actively used. As noted below, daily shut-down procedures will include the covering and securing of all stockpiled soils with polyethylene sheeting.
- **Stormwater Controls** – To protect off-site areas from the potential run-off of impacted soils during soil excavation, the contractor will establish staked hay bales in areas of the Site susceptible to stormwater flow, *e.g.,* the downgradient excavation edge. Storm drains will be protected by the installation of either filter fabric or the placement of hay bales.
- **Cleaning of Equipment** - Cleaning will be performed using "dry decon." methods, *i.e.* use of brushes and brooms to remove the soil without the use of water. All equipment will be decontaminated using this method before leaving the Site

7.4 SECURITY PROCEDURES (RULE 1.10.15)

Access to remedial areas during earthwork activities will be limited to the contractor and oversight personnel. Should the impacted soil excavation area be required to remain open while contractor personnel are not onsite on a fulltime basis (*i.e.*, after normal working hours), it will be the contractor's responsibility to protect the excavation from unauthorized access. This may be accomplished by the erection of temporary barriers and warning tape as appropriate for the size, slope and depth of the excavation. Once the fence is erected, the Site will be secure from trespassing. During Site redevelopment, the Site will be secured during non-working hours with a construction fence, if required.

7.5 INSTITUTIONAL CONTROLS AND NOTICES (RULE 1.10.17, PHASE II)

An ELUR will be applied to the property to specify the restrictions and provisions appropriate for the current and future use of the Site. Draft ELURs (one for Plat 6/Lot 117 where an ELUR was already filed, and one for Plat 6/Lots 102 and 118) and the accompanying SMPs, have been prepared and are attached as Appendix I for RIDEM review and approval.

The ELUR will serve to:

- No residential use of the Property shall be permitted that is contrary to RIDEM approvals and restrictions;
- Prohibit the use of groundwater at the Site for drinking water;
- Require RIDEM notification should soil excavation be planned in contaminated areas and implementation of a SMP for this work;
- Require buildings constructed on-Site to include a SSDS;
- Provide for long-term maintenance, monitoring and other measures necessary to assure the integrity of the remedial action;
- Provide for annual evaluations of the Site to record that the ELUR requirements are met. These evaluations will be performed by an appropriately qualified environmental professional or an officer or Director with direct knowledge of past and present conditions at the property. A report documenting the findings of each evaluation will be provided to RIDEM.

7.6 CONTRACTORS AND/OR CONSULTANTS (RULE 1.10.8)

The contractors, consultants and contacts involved in the implementation of the proposed remedy include the parties listed below.

Firm	Role	Contacts	Phone Number
GZA, GeoEnvironmental Inc. 188 Valley Street, Suite 300 Providence RI 02909	Environmental Engineering, SVE System Installation, Field Oversight, Monitoring and Reporting	Edward Summerly Richard Carlone	401-421-4140
Hoffman Environment Services	SVE Well Installations and SVE Earthwork Contractor	Kyle Hoffman	401-477-4989
Superior Electric	Electric Service and Control Installation	Larry Dercole	401-556-8508

Note that the above contractors are subject to change.

7.7 CONTINGENCY PLAN (RULE 1.10.13)

This Contingency Plan has been prepared to establish procedures that will be followed during the all earthwork components of the proposed remedy.

Given the types of contaminants, the historic nature of the Site and the remedial activities proposed, the risk of a new release that poses an immediate threat to human health or the environment is very low. Best management practices and appropriate health and safety procedures will be followed during the implementation of all activities. An emergency response contractor will be on call during soil/waste excavation activities to assist in the response to any unforeseen conditions.

7.7.1 Basic Health and Safety Procedures

The basic health and safety procedures outlined below will be implemented while performing excavation work at the Site. The procedures are intended as a general guideline for basic, short-term excavation and maintenance activities. The contractor conducting the work will be required to follow a health and safety plan developed for their specific activities and personnel in accordance with the OSHA requirements contained in 29 CFR Part 1910.120.

Based on the documented Site conditions, the potential routes of exposure to on-site excavation or utility repair workers include dermal contact (absorption), accidental ingestion of impacted soil and groundwater, or dust inhalation. Utilization of the

appropriate personal protective equipment (PPE) and the general safety guidelines provided below will minimize the potential for worker exposure while performing construction on the Site.

7.7.2 Personal Protective Equipment (PPE)

In general, the level of protection that will be used by workers will be determined by the task that the person is performing; however, at a minimum Level D PPE will be worn at all times while performing excavation activities on the property. Level D PPE will, at a minimum, consist of the following PPE:

1. Steel-toe work boots with over-boots as needed;
2. Eye protection (safety glasses or chemical splash goggles);
3. Work gloves;
4. Hard hat; and
5. Work clothing.

7.7.3 Site Operating Procedures/Safety Guidelines

Regardless of the level of PPE necessary to complete work at the Site, the following general health and safety guidelines will be followed during the performance of any excavation activities conducted at the Site. Adherence to these guidelines will reduce the potential for worker exposure to impacted media.

1. All work conducted onsite shall be coordinated through a designated RIDEM employee responsible for the implementation of the requirements of this plan (including all health and safety procedures);
2. The location of all utilities in the vicinity of the excavation will be established prior to beginning work;
3. All spectators will remain outside the designated Exclusion Zone (established as a 50-foot perimeter beyond the area of excavation);
4. A pre-work meeting will be conducted at the beginning of each day to discuss the health and safety procedures;
5. Practice contamination avoidance: never sit down or kneel in an excavation; never lay equipment on the ground; avoid obvious sources of contamination such as puddles; and avoid unnecessary contact with objects in an excavation;
6. Be alert to any unusual changes in your physical condition; never ignore warning signs. Notify the responsible employee or their designee as to suspected exposures;
7. All equipment used in an excavation will be properly cleaned and maintained in good working order. Equipment will be inspected for signs of defect and/or contamination before use and prior to demobilization from the Property;
8. Eating, drinking, chewing gum, and smoking are prohibited in active excavation areas; and
9. The discovery of any condition that would suggest the existence of a situation more hazardous than anticipated shall result in the evacuation of site personnel from the excavation and the re-evaluation of the hazard and the level of required protection.

7.7.4 In Case of Serious Exposure or Injury

In the event of serious chemical exposure or worker injury, the responsible employee will immediately be alerted. This person will follow the steps indicated below:

1. Summon appropriate emergency response agency by using the emergency phone numbers provided below. Convey the following information:
    a. Nature of emergency,
    b. Location of victim,
    c. Specific information about exposure or accident (gases, chemical, asphyxiation, *etc.*),
    d. Length of exposure, and

e. Hazards which may be involved in rescue or treatment;

2. If taken to a hospital, notify the hospital of the background of the problem:
   a. Potential for hospital contamination,
   b. Any contaminated items and the nature of the contamination, and
   c. Estimated arrival time.

7.7.5 Emergency Phone Numbers

Emergency telephone numbers and the directions to the nearest hospital are included below. User is cautioned that this information should be checked and updated, if necessary.

Response Agency	**Phone Number**
Ambulance	911 or (401) 726-2000
Police	911 or (401) 766-1212
Fire	911 or (401) 765-2500
RIDEM/Office of Compliance & Inspection/Emergency Response Program	(401) 222-1360 or (401) 222-3070 (non-business hours)
USEPA/Hazardous Materials Spills	(800) 424-8802
Poison Control Center	(800) 222-1222
Dig Safe (Utility Clearance)	1-888-DIGSAFE
Hospital	
Landmark Medical Center Emergency Department 115 Cass Ave, Woonsocket, RI 02895	(401) 769-4100
Route to Hospital	
Total Distance: 2.4 Mile	
Estimate Time: 9 Minutes	
Directions	**Distance**
1: Turn SOUTH on 1st Ave toward Chestnut St	0.1 mi
2: Turn LEFT onto Fairmount St	0.3 mi
3: Turn RIGHT onto River St	0.5 mi
4: Turn LEFT onto Market Square	331 ft
5: Turn RIGHT onto Bernon St	249 ft
6: Turn LEFT onto Truman Dr	0.5 mi
7: Turn RIGHT at the 1st cross street onto Clinton St	0.4 mi
8: Turn RIGHT onto Cumberland St	0.3 mi
9: Turn LEFT onto Cass Ave	0.2 mi
10: Turn RIGHT	154 ft

In the event of an emergency related to a release of hazardous materials or oil the following steps will be taken:

1. **In the event of a spill/release** - extinguish all sources of ignition and isolate/block/cover all potential environmental receptors including drains, sumps, soil, etc., and determine if the spill/release is incidental[4] or non-incidental[5].

2. **Non-incidental spills/releases** - Stop/contain the spill/release at the source without endangering yourself and others.

   A. First isolate all potential environmental receptors including drains, sumps, soil, etc.
   B. Notify the site supervisor immediately and try to contain spilled material.
   C. The site supervisor or designee will conduct necessary reporting to outside agencies if:
      1. A spill/release exceeds the reportable quantity (RQ) and has entered the environment - report to RIDEM.
      2. A spill/release migrates off the property and/or results in personal injury - also report to the Fire and Police Departments.
      3. A spill/release enters a storm water drain system - also report to the Fire and Police Departments and the National Response Center (NRC).
   4. A spill/release causes a sheen or discoloration of navigable waters or adjoining shorelines - also report to the NRC.
   D. The site supervisor will conduct follow-up written notifications to applicable agencies.
   E. The site supervisor will ensure proper follow-up, corrective action and planning to prevent recurrence.

3. **Incidental spills/releases** - Immediately report the spill/release to the site supervisor and conduct the following activities.

   A. Isolate all potential environmental receptors including drains, sumps, soil, etc.
   B. Recover material spilled and clean-up spill area, decontaminate tools and equipment, and collect all rinsate and debris.

4. The site supervisor will ensure proper waste disposal, follow-up, corrective action and planning to prevent recurrence.

The following provides a listing of points of contacts who will be contacted in the event of an unanticipated incident involving hazardous materials.

Firm/Entity	Contact	Address	Phone Number
GZA, GeoEnvironmental Inc.	Edward Summerly, P.G. Richard Carlone, P.E.	188 Valley Street, Suite 300 Providence RI 02909	401-421-4140
RIDEM, Office of Waste Management	Rachel Simpson	235 Promenade Street, Providence, RI 02908	(401) 222-2792 ext. 7105

[4] **"Incidental"** spill/release is defined as a spill/release which meets ALL of the following criteria: 1) **DOES NOT** reach the environment directly (e.g., to a ground surface other than concrete or asphalt surfaces in contained areas of the facility) or indirectly (e.g., sump, sink, floor drain); 2) a small quantity (less than 25 gallons and/or below RQ) of material is spilled/released which **DOES NOT** pose potential or actual health hazards; 3) personnel in the immediate area are familiar with the hazards associated with the spilled material and can readily absorb, neutralize, or otherwise control the spilled material at the time of release; and 4) containment/clean-up does not pose or create potential or actual health and safety hazards (e.g. fire, explosion, chemical exposure, etc.).

[5] **"Non-incidental"** spills generally include one or more of the following: 1) greater than 25 gallons of spilled/released Oil and/or Hazardous Materials that **DOES** reach the environment (i.e., discharges to a floor drain, discharges to a storm drain, enters a water body, discharges to the ground surface outside the facility containment areas, etc.); 2) major spills/releases (e.g., equal to or above the reportable quantity (RQ) that cannot be readily absorbed, neutralize, or otherwise controlled at the time of release; 3) any quantity of spilled/released Oil and Hazardous Materials which personnel **are not familiar with or are unaware** of the potential or actual health and safety hazards; and 4) an injury (actual or suspected) has occurred as a result of the spill/release.

7.8 SHUT DOWN, CLOSURE & POST CLOSURE REQUIREMENTS (RULE 1.10.16)

In conjunction with an ELUR that will be recorded on the title of the property, the Owner will institute monitoring and maintenance procedures described in Sections 6.0 and 7.0, above, including maintaining all remedial systems (*i.e.,* SVE system, groundwater monitoring wells and engineered controls) in good condition. Procedures to be followed for notifying contractors of existing Site conditions in the event of utility repair or other activities that might disturb potentially contaminated soils or groundwater will also be in place as part of the SMP.

The details of all remedial system installations and start-up testing will be documented and submitted to RIDEM in quarterly progress reports and summarized in a final *Remedial Action Closure Report* (RACR). The SVE system performance monitoring program will continue until soil TPH concentrations have been reduced to below the GB Leachability Criteria, as evaluated by compliance testing, as described in Section 8, below. Groundwater monitoring will be conducted quarterly for VOCS and TPH for two years and then semi-annually for VOCs only for three years.

7.9 COMPLIANCE DETERMINATION/EVALUATION (RULES 1.10.6 & 1.10.18)

The remedial program will be considered complete when it is demonstrated that the remedial objectives provided in Section 6.0 are achieved. We understand that RIDEM will issue a *Letter of Compliance* for the Site once these conditions have been met.

7.9.1 ELUR Compliance

To evaluate the Site's compliance status with respect to the ELUR, a qualified environmental professional will conduct a yearly evaluation of the property. The evaluation will include a reconnaissance of the property at which time the condition of the areas of concern at the Site will be documented. Additionally, the evaluation will include visually apparent changes in the nature of Site use and observable changes to the physical conditions of the property (with respect to alterations that may affect the integrity of the engineered controls described in the RAWP and ELUR). The results of the evaluation will be presented to the RIDEM as annual reports. Inspections will commence approximately one year following RIDEM's approval of the RAWP.

7.9.2 Confirmatory Soil Sampling

The objective of the soil remedial program is to reduce contaminant concentrations in the unsaturated zone to levels complaint with RIDEM's GB Leachability Criteria; as described above, this will be accomplished by an SVE system. Compliance with the stated objectives will be demonstrated through the implementation of a confirmatory sampling and analytical program meeting the requirements of Section 1.10.10 of the Remediation Regulations. Clean-up confirmation sampling associated with the SVE process will be conducted after a sufficient period of full-time operation of the SVE system. We anticipate that initial confirmatory soil samples within the vented areas will be collected 24 to 36 months from system start-up. If the compliance criteria are not achieved at this time the Owner will continue operating the systems for an additional time period. After which time, another set of confirmatory samples will be collected and analyzed from those areas which initially had residuals above the remedial objectives.

Soil sample analysis will consist of TPH via EPA Method 8100. Samples will be collected as follows:

1. A geometric grid will be laid out over the treatment area prior to the start of sample collection.
2. Samples will be collected using a track mounted GeoProbe® which utilizes a 5–foot polycarbonate liner tube inside a steel drive pipe. Continuous soil samples will be collected to a depth of 2-feet below the groundwater table at each Geoprobe exploration location. Full sample tubes will be opened and observed on-site for visual and olfactory evidence of contamination.
3. Samples will be field screened for TVOCs with a PID employing a 10.6 eV lamp. Soil samples for laboratory analysis will be selected based on field TVOC screening results (PID-or equivalent), visual or olfactory observations, location within the borehole (*e.g.,* at the water table, at the base of borehole, etc.), and sample volume recovered.

7.9.3 Long-Term Monitoring (Phase 1)

A monitoring program, including monitoring of the biovent/biosparge (if installed) system and monitoring of the six existing monitoring wells will be instituted to monitor contaminant levels both within areas of active treatment and at downgradient locations. This monitoring program will be used to evaluate the effectiveness of the remedial measures and attainment of remedial objectives. As stated above, the biovent monitoring will be conducted monthly for five years and the groundwater monitoring will be conducted quarterly for two years and semi-annually for an additional three years. The need for monitoring beyond that point will be evaluated in concert with GZA, the Owner and RIDEM.

Each monitoring well will be gauged for LNAPL quarterly and will be sampled annually in general accordance with EPA's September 19, 2017 *Low Stress (low flow) Purging and Sampling Procedure* (low flow SOP) and in accordance with revised GZA SOP # 3.1.2 (refer to GZA's *Generic QAPP*). Samples will be submitted for VOC and TPH laboratory analyses in accordance with EPA Method 8260B and 8100M, respectively. The groundwater monitoring results will be provided to RIDEM as part of quarterly/annual SVE system monitoring reports.

After the remedial objectives are attained, monitoring will continue for a period of two years to evaluate if contaminant rebound is occurring. Assuming no rebound is observed, monitoring will be terminated at that time, the wells will be formally closed and the SVE system decommissioned.

7.9.4 Redevelopment and Site Capping

When the Site is redeveloped, it will be capped. The specific form and extent of the cap will be based on the Site reuse option (residential, recreational, commercial, industrial, etc.) selected by the City. There are three Site capping options listed above. The Site capping will be observed and documented. A cap inspection will be conducted annually to evaluate the cap condition and if any cap disturbances have occurred.

7.10 PROJECT SCHEDULE (RULE 1.10.7)

The final ELURs and SMPs will be recorded on the property deeds within 14 days of approval by the Department and the recorded versions forwarded back to the Department within 15 days of recording.

The following table presents a tentative project schedule. Please note that this schedule is subject to change based on the availability of subcontractors, materials, weather and other factors outside of the Owners control. At this time, the SVE system and Site fence will be constructed. The remaining engineered controls (i.e., engineered cap) will be constructed during Site redevelopment and as noted in Section 7.2.1, the exact timing of Site redevelopment is unknown.

Task	Estimated Completion (after receiving RIDEM approval)
Biovent system Installation and Startup	3 months
Implement Groundwater Monitoring Program	3 months (first sampling event will occur immediately prior to SVE System startup)
Submit *Remedial Action Closure Report*	6 months following system shutdown
Submit First ELUR Annual Status Report	12 months following recording of the ELUR with the city's clerk

8.0 CERTIFICATIONS (RULE 1.10.19)

To address Rule 1.10.19 of the Remediation Regulations, the following statements of certification are provided.

GZA GeoEnvironmental, Inc. certifies to the best of its knowledge, that this Remedial Action Work Plan is complete and accurate.

Edward A. Summerly, P.G.
Principal / District Office Manager
GZA GeoEnvironmental, Inc

The City of Woonsocket certifies, to the best of its knowledge, that this Remedial Action Work Plan is complete and accurate.

John DeSimone
City Solicitor
City of Woonsocket

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TABLES

TABLE 1
SUMMARY SOIL SAMPLING RESULTS
Former Seville Dyeing Co. Site
Woonsocket, Rhode Island
January 2020

PARAMETERS	UNITS	RIDEM DIRECT EXPOSURE CRITERIA	RIDEM GB	MW-3/S-1		MW-4		MW-4 (BD)		MW-7		MW-8/S-2B		B-1[5]/S-2D		B-2/S-2		B-3/S-2		B-5/S-2		B-6[6]		B-7/S-1		B-10		B-11/S-1	
		Industrial/ Commercial	Leachibility Criteria	11/27/2018		11/28/2018		11/28/2018		11/28/2018		11/27/2018		11/27/2018		11/27/2018		11/27/2018		11/27/2018		11/28/2018		11/27/2018		11/27/2018		11/27/2018	
				0-5 feet		0-5 feet		0-5 feet		10-15 feet		0-5 feet		5-10 feet		5-10 feet		5-10 feet		5-10 feet		0-5 feet		0-5 feet		7.5-9 feet		0-5 feet	
Metals																													
Antimony	mg/kg	820	-	0.500	U	0.500	U	0.500	U	NT		0.500	U	0.500	U	0.500	U	0.500	U	0.500	U	0.500	U	0.500	U	0.500	U	0.500	U
Arsenic	mg/kg	7.0	-	**14.7**		**45.2**		**17.3**	J	NT		**5.89**		**5.61**		**10.1**		**8.03**		**7.97**		**8.89**		**10.6**		**0.721**		**6.60**	
Beryllium	mg/kg	1.3	-	**0.857**		0.0552	U	0.0560	U	NT		**0.0867**		0.0532	U	0.0614	U	**0.0922**		**0.108**		**0.210**		**0.102**		0.120	U	**0.254**	J
Cadmium	mg/kg	1,000	-	**0.822**		**2.06**		**1.04**	J	NT		0.108	U	0.106	U	**0.603**		**0.328**		**0.399**		**0.228**		**0.479**		0.239	U	**0.215**	
Chromium	mg/kg	10,000	-	**57.6**		**74.8**		**35.7**	J	NT		**5.85**		**11.4**		**33.9**		**17.9**		**14.4**		**27.9**		**19.9**		**12.6**		**50.6**	J
Copper	mg/kg	10,000	-	**176**		**1630**		**418**	J	NT		**4.92**		**3.55**		**42.8**		**45.4**		**54.9**		**27.9**		**55.5**		**35,800**		**31.1**	
Lead	mg/kg	500	-	**33.9**		**63.3**		**36.7**	J	NT		**2.61**		**2.04**		**20.9**		**9.90**		**21.2**		**318**		**30.0**		**15.9**		**47.6**	J
Nickel	mg/kg	10,000	-	**47.5**		**118**		**40.1**	J	NT		**5.58**		**4.93**		**25.0**		**9.40**		**15.7**		**12.4**		**21.6**		**41.7**		**10.6**	
Selenium	mg/kg	10,000	-	0.292	U	0.276	U	0.280	U	NT		0.269	U	0.266	U	0.307	U	0.292	U	0.286	U	0.280	U	0.279	U	0.598	U	0.284	U
Silver	mg/kg	10,000	-	**0.158**		**1.59**		**0.402**	J	NT		0.108	U	0.106	U	**0.137**		0.117	U	0.114	U	**0.241**		**0.344**		**3.72**		**4.12**	J
Thallium	mg/kg	140	-	0.292	U	**0.914**		**0.456**	J	NT		0.269	U	0.266	U	**0.611**		**0.543**		**0.594**		0.280	U	0.279	U	0.598	U	0.284	U
Zinc	mg/kg	6,000	-	**138**		**39.2**		**88.0**	J	NT		**13.7**		**7.38**		**36.9**		**19.8**		**34.4**		**98.1**		**79.5**		**10,800**		**69.7**	J
Mercury	mg/kg	610	-	**0.251**		**0.616**		**0.0452**	J	NT		0.036	U	0.0351	U	**0.0984**		0.0386	U	**0.197**		**0.0716**		0.0368	U	0.0789	U	**0.347**	
Polychlorinated Biphenyls																													
Aroclor-1016	mg/kg	10	10	0.0117	U	0.0112	U	0.0110	U	NT		0.0107	U	0.212	U	0.0122	U	0.0116	UJ	0.0114	U	0.0112	U	0.0112	U	0.0239	U	0.0114	U
Aroclor-1221	mg/kg	10	10	0.0117	U	0.0112	U	0.0110	U	NT		0.0107	U	0.212	U	0.0122	U	0.0116	U	0.0114	U	0.0112	U	0.0112	U	0.0239	U	0.0114	U
Aroclor-1232	mg/kg	10	10	0.0117	U	0.0112	U	0.0110	U	NT		0.0107	U	0.212	U	0.0122	U	0.0116	U	0.0114	U	0.0112	U	0.0112	U	0.0239	U	0.0114	U
Aroclor-1242	mg/kg	10	10	0.0117	U	0.0112	U	0.0110	U	NT		0.0107	U	0.212	U	0.0122	U	0.0116	U	0.0114	U	0.0112	U	0.0112	U	0.0239	U	0.0114	U
Aroclor-1248	mg/kg	10	10	0.0117	U	0.0112	U	0.0110	U	NT		0.0107	U	0.212	U	0.0122	U	0.0116	U	0.0114	U	0.0112	U	0.0112	U	0.0239	U	0.0114	U
Aroclor-1254	mg/kg	10	10	0.0117	U	0.0112	U	0.0110	U	NT		0.0107	U	0.212	U	0.0122	U	0.0116	U	0.0114	U	0.0112	U	0.0112	U	0.0239	U	0.0114	U
Aroclor-1260	mg/kg	10	10	0.0117	U	0.0112	U	0.0110	U	NT		0.0107	U	0.212	U	0.0122	U	0.0116	U	0.0114	U	0.0112	U	0.0112	U	0.0239	U	0.0114	U
Aroclor-1262	mg/kg	10	10	0.0117	U	NT		NT		NT		NT		NT		NT		NT		NT		NT		NT		NT		NT	
Aroclor-1268	mg/kg	10	10	0.0117	U	NT		NT		NT		NT		NT		NT		NT		NT		NT		NT		NT		NT	
Total Petroleum Hydrocarbons																													
Total Petroleum Hydrocarbons	mg/kg	2,500	2,500	**518**		**184**		**417**	J	**4,020**		**170**		**10,800**		**41.2**		**35.8**		**241**		**1,430**		**271**		**3,670**		**425**	U
Semi-Volatile Organic Compounds																													
2-Methylnaphthalene	mg/kg	10,000	-	0.385	U	0.364	U	0.369	U	NT		0.354	U	0.701	U	0.0809	U	0.0769	U	0.377	U	0.369	U	0.368	U	**4.200**		0.375	U
Acenaphthene	mg/kg	10,000	-	0.385	U	0.364	U	0.369	U	NT		0.354	U	**2.280**		0.0809	U	0.0769	U	0.377	U	**1.620**		0.368	U	0.394	U	**0.617**	
Acenaphthylene	mg/kg	10,000	-	0.385	U	0.364	U	0.369	U	NT		0.354	U	0.701	U	0.0809	U	0.0769	U	0.377	U	0.369	U	0.368	U	0.394	U	0.375	U
Anthracene	mg/kg	10,000	-	0.385	U	0.364	U	0.369	U	NT		0.354	U	**1.127**		0.0809	U	0.0769	U	**0.415**		**2.500**		0.368	U	0.394	U	**1.640**	
Benzo(a)anthracene	mg/kg	7.8	-	**5.770**		**0.710**		**1.320**	J	NT		0.354	U	**2.040**		**0.106**		**0.123**		**1.280**		**5.130**		**2.000**		0.394	U	**3.670**	
Benzo(a)pyrene	mg/kg	0.8	-	**6.350**		**1.280**		**2.580**	J	NT		0.354	U	0.701	U	**0.0932**		**0.124**		**1.540**		**5.090**		**2.080**		0.394	U	**3.600**	
Benzo(b)fluoranthene	mg/kg	7.8	-	**12.300**		**1.560**		**3.310**	J	NT		0.354	U	0.701	U	**0.137**		**0.150**		**1.880**		**5.820**		**4.060**		0.394	U	**4.660**	
Benzo(g,h,i)perylene	mg/kg	10,000	-	**4.960**		**0.500**		**1.070**	J	NT		0.354	U	0.701	U	0.0809	U	0.0769	U	**0.781**		**1.530**		**1.520**		0.394	U	**1.460**	
Benzo(k)fluoranthene	mg/kg	78	-	**4.110**		**0.640**		**1.170**	J	NT		0.354	U	0.701	U	0.0809	U	0.0769	U	**0.712**		**2.840**		**1.430**		0.394	U	**1.520**	
Chrysene	mg/kg	780	-	**7.800**		**0.897**		**1.470**		NT		0.354	U	**5.350**		**0.104**		**0.119**		**1.320**		**4.740**		**2.680**		0.394	U	**3.230**	
Dibenzo(a,h)anthracene	mg/kg	0.8	-	**1.320**		0.364	U	0.369	U	NT		0.354	U	0.701	U	0.0809	U	0.0769	U	0.377	U	**0.522**		**0.632**		0.394	U	**0.401**	
Fluoranthene	mg/kg	10,000	-	**8.050**		**1.180**		**1.790**		NT		0.354	U	0.701	U	**0.182**		**0.176**		**2.850**		**9.980**		**2.090**		0.394	U	**7.260**	
Fluorene	mg/kg	10,000	-	0.385	U	0.364	U	0.369	U	NT		0.354	U	**3.110**		0.0809	U	0.0769	U	0.377	U	**1.690**		0.368	U	0.394	U	**0.681**	
Indeno(1,2,3-cd)pyrene	mg/kg	7.8	-	**5.030**		**0.555**		**1.150**	J	NT		0.354	U	0.701	U	0.0809	U	0.0769	U	**0.838**		**1.880**		**1.160**		0.394	U	**1.610**	
Naphthalene	mg/kg	10,000	-	0.385	U	0.364	U	0.369	U	NT		0.354	U	0.701	U	0.0809	U	0.0769	U	0.377	U	0.369	U	0.368	U	**1.010**		0.375	U
Phenanthrene	mg/kg	10,000	-	**1.820**		0.364	U	**0.533**		NT		0.354	U	**11.200**		0.0809	U	0.0769	U	**2.030**		**11.700**		0.368	U	0.394	U	**6.580**	
Pyrene	mg/kg	10,000	-	**8.160**		**1.140**		**1.730**		NT		0.354	U	**6.640**		**0.168**		**0.178**		**2.910**		**9.220**		**2.010**		0.394	U	**6.860**	

TABLE 1
SUMMARY SOIL SAMPLING RESULTS
Former Seville Dyeing Co. Site
Woonsocket, Rhode Island
January 2020

PARAMETERS	UNITS	RIDEM DIRECT EXPOSURE CRITERIA	RIDEM GB	MW-3/S-1	MW-4	MW-4 (BD)	MW-7	MW-8/S-2B	B-1[5]/S-2D	B-2/S-2	B-3/S-2	B-5/S-2	B-6[6]	B-7/S-1	B-10	B-11/S-1
		Industrial/ Commercial	Leachibility Criteria	11/27/2018	11/28/2018	11/28/2018	11/28/2018	11/27/2018	11/27/2018	11/27/2018	11/27/2018	11/27/2018	11/28/2018	11/27/2018	11/27/2018	11/27/2018
				0-5 feet	0-5 feet	0-5 feet	10-15 feet	0-5 feet	5-10 feet	5-10 feet	5-10 feet	5-10 feet	0-5 feet	0-5 feet	7.5-9 feet	0-5 feet
Volatile Organic Compounds																
1,2,4-Trimethylbenzene	mg/kg	-	-	0.021 U	0.0177 U	0.0261 U	NT	0.0218 U	**0.0449**	0.0215 U	0.0257 U	0.0255 U	0.0244 U	0.0247 U	**0.967**	0.0214 U
1,3,5-Trimethylbenzene	mg/kg	-	-	0.021 U	0.0177 U	0.0261 U	NT	0.0218 U	0.0206 U	0.0215 U	0.0257 U	0.0255 U	0.0244 U	0.0247 U	**0.281**	0.0214 U
1,2-Dichlorobenzene	mg/kg	-	-	0.010 U	0.00885 U	0.0131 U	NT	0.0109 U	0.0103 U	0.0107 U	0.0128 U	0.0128 U	0.0122 U	0.0124 U	**0.0301**	0.0107 U
4-Isopropyltoluene	mg/kg	-	-	0.010 U	0.00885 U	0.0131 U	NT	0.0109 U	0.0103 U	0.0107 U	0.0128 U	0.0128 U	0.0122 U	0.0124 U	**0.0710**	0.0107 U
Isopropylbenzene	mg/kg	10,000	-	0.010 U	0.00885 U	0.0131 U	NT	0.0109 U	**0.126**	0.0107 U	0.0128 U	0.0128 U	0.0122 U	0.0124 U	**0.0762**	0.0107 U
Methylene Chloride	mg/kg	760	-	0.010 U	0.00885 U	0.0131 U	NT	0.0109 U	0.0103 U	0.0107 U	0.0128 U	0.0128 U	0.0122 U	0.0124 U	0.0125 U	0.0107 U
Naphthalene	mg/kg	-	-	0.010 U	0.00885 U	0.0131 U	NT	0.0109 U	0.0103 U	**0.0116**	0.0128 U	0.0128 U	0.0122 U	**0.0138**	**0.182**	0.0107 U
n-Butylbenzene	mg/kg	-	-	0.010 U	0.00885 U	0.0131 U	NT	0.0109 U	**0.357**	0.0107 U	0.0128 U	0.0128 U	0.0122 U	0.0124 U	0.0125 U	0.0107 U
n-Propylbenzene	mg/kg	-	-	0.010 U	0.00885 U	0.0131 U	NT	0.0109 U	**0.212**	0.0107 U	0.0128 U	0.0128 U	0.0122 U	0.0124 U	**0.151**	0.0107 U
sec-Butylbenzene	mg/kg	-	-	0.010 U	0.00885 U	0.0131 U	NT	0.0109 U	**0.324**	0.0107 U	0.0128 U	0.0128 U	0.0122 U	0.0124 U	**0.0805**	0.0107 U
Toluene	mg/kg	10,000	54	0.010 U	0.00885 U	0.0131 U	NT	0.0109 U	0.0103 U	0.0107 U	0.0128 U	0.0128 U	0.0122 U	0.0124 U	**0.184**	0.0107 U
o-Xylene	mg/kg	-	-	0.021 U	0.00885 U	0.0261 U	NT	0.0109 U	**0.015**	0.0107 U	0.0128 U	0.0128 U	0.0244 U	0.0124 U	**0.191**	0.0107 U
m,p-Xylene	mg/kg	-	-	0.010 U	0.0177 U	0.0131 U	NT	0.0218 U	0.0206 U	0.0215 U	0.0257 U	0.0255 U	0.0122 U	0.0247 U	**0.307**	0.0214 U
Remaining VOCs	mg/kg			ND	ND	ND	U	U	U	U	U	U	U	U	U	U

Notes:
1: For the complete list of target analytes refer to the attached laboratory certificates of analysis.
2. Bold values indicate the constituent was detected above the laboratory reporting limit. Orange highlight indicates an exceedence of RIDEM's GB Leachability Criteria. Yellow highlight indicates an exceedance of RIDEM's I/C DEC Criteria.
3. "U" indicates that the parameter is not detected.
4. "NT" indicates that the parameter was not tested.
5. Sample results under MW-9 in laboratory certificates.
6. Sample results under MW-6 in laboratory certificates.
7. "D" indicates that the parameter was diluted.
8. "J" indicates that the constituent was detected at a level between the reporting limit and the method detection limit, and the value shown is an estimated quantity.
9. Sample results under MW-15 in laboratory certificates.

TABLE 1
SUMMARY SOIL SAMPLING RESULTS
Former Seville Dyeing Co. Site
Woonsocket, Rhode Island
January 2020

PARAMETERS	UNITS	RIDEM DIRECT EXPOSURE CRITERIA	MW-14[9]		MW-16/S-4B		B-13		B-13 (BD)		B-14		B-19/S-1C		B-20/S-4A		B-20/S-4B		SG-1/S-3B		SG-4/S-2D		SG-5/S-3B		Trip Blank
			10/28/2019		10/29/2019		10/28/2019		10/28/2019		10/28/2019		10/28/2019		10/28/2019		10/28/2019		10/29/2019		10/29/2019		10/29/2019		10/28/2019	
		Industrial/ Commercial	0-2 feet		16.5-20 feet		2-4 feet		2-4 feet		2-4 feet		3-5 feet		15-17 feet		17-19 feet		12-14 feet		8-10 feet		12-15 feet		
Metals																									
Antimony	mg/kg	820	4.05	U	NT		4.12	U	4.27	U	3.08	U	NT		NT		NT		NT		NT		NT		NT
Arsenic	mg/kg	7.0	**3.72**		NT		**2.65**		**3.01**		**2.11**		NT		NT		NT		NT		NT		NT		NT
Beryllium	mg/kg	1.3	**0.21**		NT		**0.13**		**0.14**		**0.12**		NT		NT		NT		NT		NT		NT		NT
Cadmium	mg/kg	1,000	0.41	U	NT		0.41	U	0.43	U	0.31	U	NT		NT		NT		NT		NT		NT		NT
Chromium	mg/kg	10,000	**8.34**		NT		**3.9**		**3.17**		**3.29**		NT		NT		NT		NT		NT		NT		NT
Copper	mg/kg	10,000	**23.8**		NT		**3.51**		**3.15**		**3.58**		NT		NT		NT		NT		NT		NT		NT
Lead	mg/kg	500	**97**		NT		**13.8**		**13**		**5.61**		NT		NT		NT		NT		NT		NT		NT
Nickel	mg/kg	10,000	**0.055**		NT		**0.234**		**0.179**		**0.268**		NT		NT		NT		NT		NT		NT		NT
Selenium	mg/kg	10,000	**8.43**		NT		**3.04**		**2.51**		**2.21**		NT		NT		NT		NT		NT		NT		NT
Silver	mg/kg	10,000	4.05	U	NT		4.12	U	4.27	U	3.08	U	NT		NT		NT		NT		NT		NT		NT
Thallium	mg/kg	140	0.41	U	NT		0.41	U	0.43	U	0.31	U	NT		NT		NT		NT		NT		NT		NT
Zinc	mg/kg	6,000	4.05	U	NT		4.12	U	4.27	U	3.08	U	NT		NT		NT		NT		NT		NT		NT
Mercury	mg/kg	610	**73.8**		NT		**15.6**	J	**7.76**	J	**9.87**		NT		NT		NT		NT		NT		NT		NT
Polychlorinated Biphenyls																									
Aroclor-1016	mg/kg	10	0.05	U	NT		0.05	U	0.05	U	0.05	U	NT		NT		NT		NT		NT		NT		NT
Aroclor-1221	mg/kg	10	0.05	U	NT		0.05	U	0.05	U	0.05	U	NT		NT		NT		NT		NT		NT		NT
Aroclor-1232	mg/kg	10	0.05	U	NT		0.05	U	0.05	U	0.05	U	NT		NT		NT		NT		NT		NT		NT
Aroclor-1242	mg/kg	10	0.05	U	NT		0.05	U	0.05	U	0.05	U	NT		NT		NT		NT		NT		NT		NT
Aroclor-1248	mg/kg	10	0.05	U	NT		0.05	U	0.05	U	0.05	U	NT		NT		NT		NT		NT		NT		NT
Aroclor-1254	mg/kg	10	0.05	U	NT		0.05	U	0.05	U	0.05	U	NT		NT		NT		NT		NT		NT		NT
Aroclor-1260	mg/kg	10	0.05	U	NT		0.05	U	0.05	U	0.05	U	NT		NT		NT		NT		NT		NT		NT
Aroclor-1262	mg/kg	10	0.05	U	NT		0.05	U	0.05	U	0.05	U	NT		NT		NT		NT		NT		NT		NT
Aroclor-1268	mg/kg	10	0.05	U	NT		0.05	U	0.05	U	0.05	U	NT		NT		NT		NT		NT		NT		NT
Total Petroleum Hydrocarbons																									
Total Petroleum Hydrocarbons	mg/kg	2,500	**477**		**46**		39.7	U	38.7	U	39	U	**1,430**		**4,340**		**68.9**		**12,500**	D	**5,140**	D	**44.3**		NT
Semi-Volatile Organic Compounds																									
2-Methylnaphthalene	mg/kg	10,000	0.368	U	NT		0.361	U	0.33	U	0.347	U	NT		NT		NT		NT		NT		NT		NT
Acenaphthene	mg/kg	10,000	0.368	U	NT		0.361	U	0.33	U	0.347	U	NT		NT		NT		NT		NT		NT		NT
Acenaphthylene	mg/kg	10,000	0.368	U	NT		0.361	U	0.33	U	0.347	U	NT		NT		NT		NT		NT		NT		NT
Anthracene	mg/kg	10,000	**0.656**		NT		0.361	U	0.33	U	0.347	U	NT		NT		NT		NT		NT		NT		NT
Benzo(a)anthracene	mg/kg	7.8	**1.58**		NT		0.361	U	0.33	U	**0.611**		NT		NT		NT		NT		NT		NT		NT
Benzo(a)pyrene	mg/kg	0.8	**1.3**		NT		0.181	U	0.166	U	**0.454**		NT		NT		NT		NT		NT		NT		NT
Benzo(b)fluoranthene	mg/kg	7.8	**1.44**		NT		0.361	U	0.33	U	**0.422**		NT		NT		NT		NT		NT		NT		NT
Benzo(g,h,i)perylene	mg/kg	10,000	**0.87**		NT		0.361	U	0.33	U	0.347	U	NT		NT		NT		NT		NT		NT		NT
Benzo(k)fluoranthene	mg/kg	78	**0.852**		NT		0.361	U	0.33	U	0.347	U	NT		NT		NT		NT		NT		NT		NT
Chrysene	mg/kg	780	**1.45**		NT		0.181	U	0.166	U	**0.518**		NT		NT		NT		NT		NT		NT		NT
Dibenzo(a,h)anthracene	mg/kg	0.8	**0.285**		NT		0.181	U	0.166	U	0.174	U	NT		NT		NT		NT		NT		NT		NT
Fluoranthene	mg/kg	10,000	**2.92**		NT		0.361	U	0.33	U	**1.51**		NT		NT		NT		NT		NT		NT		NT
Fluorene	mg/kg	10,000	0.368	U	NT		0.361	U	0.33	U	0.347	U	NT		NT		NT		NT		NT		NT		NT
Indeno(1,2,3-cd)pyrene	mg/kg	7.8	**0.779**		NT		0.361	U	0.33	U	0.347	U	NT		NT		NT		NT		NT		NT		NT
Naphthalene	mg/kg	10,000	0.368	U	NT		0.361	U	0.33	U	0.347	U	NT		NT		NT		NT		NT		NT		NT
Phenanthrene	mg/kg	10,000	**2.23**		NT		0.361	U	0.33	U	**1.48**		NT		NT		NT		NT		NT		NT		NT
Pyrene	mg/kg	10,000	**2.86**		NT		0.361	U	0.33	U	**1.19**		NT		NT		NT		NT		NT		NT		NT

TABLE 1
SUMMARY SOIL SAMPLING RESULTS
Former Seville Dyeing Co. Site
Woonsocket, Rhode Island
January 2020

PARAMETERS	UNITS	RIDEM DIRECT EXPOSURE CRITERIA	MW-14[9]		MW-16/S-4B		B-13		B-13 (BD)		B-14		B-19/S-1C	B-20/S-4A	B-20/S-4B	SG-1/S-3B	SG-4/S-2D	SG-5/S-3B	Trip Blank	
			10/28/2019		10/29/2019		10/28/2019		10/28/2019		10/28/2019		10/28/2019	10/28/2019	10/28/2019	10/29/2019	10/29/2019	10/29/2019	10/28/2019	
		Industrial/ Commercial	0-2 feet		16.5-20 feet		2-4 feet		2-4 feet		2-4 feet		3-5 feet	15-17 feet	17-19 feet	12-14 feet	8-10 feet	12-15 feet		
Volatile Organic Compounds																				
1,2,4-Trimethylbenzene	mg/kg	-	0.226	U	NT		0.173	U	0.18	U	0.159	U	NT	NT	NT	NT	NT	NT	0.200	U
1,3,5-Trimethylbenzene	mg/kg	-	0.226	U	NT		0.173	U	0.18	U	0.159	U	NT	NT	NT	NT	NT	NT	0.200	U
1,2-Dichlorobenzene	mg/kg	-	0.226	U	NT		0.173	U	0.18	U	0.159	U	NT	NT	NT	NT	NT	NT	0.200	U
4-Isopropyltoluene	mg/kg	-			NT		0.173	U	0.18	U	0.159	U	NT	NT	NT	NT	NT	NT	0.200	U
Isopropylbenzene	mg/kg	10,000	0.226	U	NT		0.173	U	0.18	U	0.159	U	NT	NT	NT	NT	NT	NT	0.200	U
Methylene Chloride	mg/kg	760	0.451	U	NT		**0.0952**	J	**0.0971**	J	0.318	U	NT	NT	NT	NT	NT	NT	**0.110**	J
Naphthalene	mg/kg	-	**0.298**		NT		**1.42**	J	**0.473**	J	**0.391**		NT	NT	NT	NT	NT	NT	0.200	U
n-Butylbenzene	mg/kg	-	0.226	U	NT		0.173	U	0.18	U	0.159	U	NT	NT	NT	NT	NT	NT	0.200	U
n-Propylbenzene	mg/kg	-	0.226	U	NT		0.173	U	0.18	U	0.159	U	NT	NT	NT	NT	NT	NT	0.200	U
sec-Butylbenzene	mg/kg	-	0.226	U	NT		0.173	U	0.18	U	0.159	U	NT	NT	NT	NT	NT	NT	0.200	U
Toluene	mg/kg	10,000	0.226	U	NT		0.173	U	0.18	U	0.159	U	NT	NT	NT	NT	NT	NT	0.200	U
o-Xylene	mg/kg	-	0.226	U	NT		0.173	U	0.18	U	0.159	U	NT	NT	NT	NT	NT	NT	0.200	U
m,p-Xylene	mg/kg	-	0.451	U	NT		0.346	U	0.36	U	0.318	U	NT	NT	NT	NT	NT	NT	0.400	U
Remaining VOCs	mg/kg		U		U		ND		ND		U		U	U	U	U	U	U	U	

Notes:
1: For the complete list of target analytes refer to the attached laboratory
2. Bold values indicate the constituent was detected above the laboratory
3. "U" indicates that the parameter is not detected.
4. "NT" indicates that the parameter was not tested.
5. Sample results under MW-9 in laboratory certificates.
6. Sample results under MW-6 in laboratory certificates.
7. "D" indicates that the parameter was diluted.
8. "J" indicates that the constituent was detected at a level between the re
9. Sample results under MW-15 in laboratory certificates.

TABLE 2
SUMMARY OF GROUNDWATER SCREENING PARAMETERS
Former Seville Dyeing Co. Site
Woonsocket, Rhode Island
January 2020

PARAMETERS	UNITS	MW-3	MW-4	MW-7	MW-8	MW-14	MW-16
		11/30/2018	11/30/2018	11/30/2018	11/30/2018	11/22/2019	11/22/2019
		Result	Result	Result	Result	Result	Result
pH	SU	6.5	6.8	NM	6.5	6.5	6.5
Temperature	(oC)	14.2	14.3	NM	13.1	12.7	14.1
Specific Conductivity	mS/cm	0.503	0.421	NM	0.703	0.350	1.114
Dissolved Oxygen	mg/L	3.6	3.3	NM	1.4	0.28	0.31
Oxidation Reduction Potential	mV	75.7	140.5	NM	-312.9	-42.3	-65.3
Turbidity	NTU	3.9	1.4	NM	36.6	4.4	2.6
Depth to water	feet	12.50	9.01	12.75	7.95	22.45	13.68

Notes
1. The above readings, with the exception of depth to water, were collected using a YSI Pro Series multi-meter with a flow-through cell and represent readings collected immediately prior to well sampling, i.e. were collected when well purging was complete. Depth to water readings shown are initial readings, i.e. were collected before well purging began.

2. NM = Not Measured.

TABLE 3
SUMMARY OF GROUNDWATER SAMPLING RESULTS
Former Seville Dyeing Co. Site
Woonsocket, Rhode Island
January 2020

PARAMETERS	UNITS	RIDEM GB GROUNDWATER QUALITY STANDARD	MASSACHUSETTS GW-2 STANDARDS	MW-3		MW-4		MW-7		MW-8		MW-8 BD (BD11302018)		Trip Blank		E-1[6]		E-2[7]		MW-14		MW-14 (BD11222019)		MW-16		E-Soil[6]		E-GW[7]		Trip Blank	
				11/30/2018		11/30/2018		11/30/2018		11/30/2018		11/30/2018		11/30/2018		11/30/2018		11/30/2018		11/22/2019		11/22/2019		11/22/2019		11/22/2019		11/22/2019		11/22/2019	
Volatile Organic Compounds																															
1,2,4-Trimethylbenzene	mg/L	-	100	0.001	U	0.001	U	0.001	U	**0.00259**		**0.00248**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
4-Chlorotoluene	mg/L	-	10	0.001	U	0.001	U	**0.0143**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Acetone	mg/L	-	50	0.005	U	0.005	U	**0.0133**	U	**0.013**	U	**0.0148**	U	**0.00673**	U	**0.0095**		**0.0107**		0.01	U	0.01	U	0.01	U	0.01	U	**0.0169**		0.01	U
Benzene	mg/L	0.14	1	0.001	U	0.001	U	0.001	U	**0.00341**		**0.0032**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Ethylbenzene	mg/L	1.6	5	0.001	U	0.001	U	0.001	U	**0.0145**		**0.0143**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Isopropylbenzene	mg/L	-	100	0.001	U	0.001	U	**0.00187**		**0.00274**		**0.00255**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Naphthalene	mg/L	-	0.7	0.001	U	0.001	U	**0.0084**		**0.0728**		**0.0702**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
n-Propylbenzene	mg/L	-	1	0.001	U	0.001	U	**0.00139**		**0.00314**		**0.00319**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
sec-Butylbenzene	mg/L	-	-	0.001	U	0.001	U	**0.00263**		**0.00124**		**0.00118**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Toluene	mg/L	1.7	40	0.001	U	0.001	U	0.001	U	**0.00106**		**0.0012**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
m,p-Xylene	mg/L	-	-	0.001	U	0.001	U	0.001	U	**0.00330**		**0.00303**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
o-Xylene	mg/L	-	-	0.001	U	0.001	U	0.001	U	**0.00248**		**0.00223**		0.001	U	0.001	U	0.001	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U
Remaining VOCs	mg/L			ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Total Petroleum Hydrocarbons																															
Total Petroleum Hydrocarbons	mg/L	-	5	0.100	U	0.100	U	**6.76**		**2.61**		**3.64**		NT		NT		NT		NT		NT		NT		0.19	U	NT		NT	

Notes:
1: For the complete list of target analytes refer to the attached laboratory certificates of analysis.
2. Bold values indicate the constituent was detected above the laboratory reporting limit. Yellow highlight indicates an exceedance of RIDEM's GB Groundwater Quality Criteria.
3. "U" indicates that the parameter is not detected.
4. "ND" indicates that the parameter is not detected.
5. "NT" indicates that the parameters was not tested.
6. E-1 and E-Soil are the soil sample equipment blanks.
7. E-2 and E-GW are the GW sample equipment blanks.

TABLE 4
SUMMARY OF SOIL VAPOR ANALYTICAL RESULTS
Former Seville Dyeing Co. Site
Woonsocket, Rhode Island
January 2020

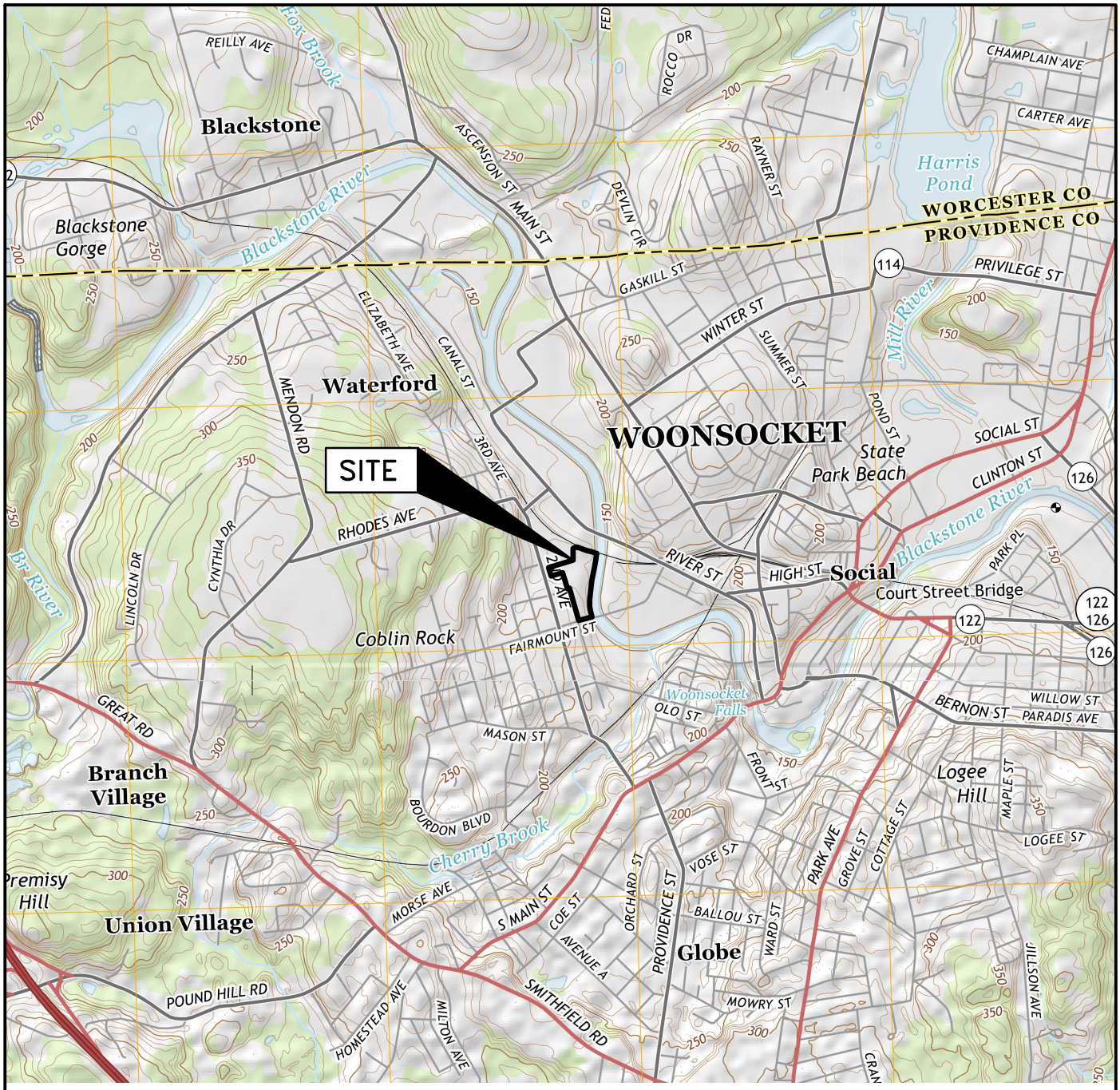
Detected Constituent of Concern	Massachusetts Soil Gas Screening Criteria October 2016		MW-8	MW-16
	Residential	Commercial	November 22, 2019	
Method EPA TO-15	**(ppbv)**		**(ppbv)**	
Propylene	NA	NA	**0.804**	**16.4**
Dichlorodifluoromethane (Freon 12)	NA	NA	**0.462**	**0.400**
Chloromethane	NA	NA	**0.548**	**0.526**
Ethyl Alcohol	NA	NA	<5.00	**11.7**
Acetone	2,700	21,000	**2.98**	**4.25**
Trichlorofluoromethane	NA	NA	**0.394**	**3.49**
Isopropyl Alcohol	NA	NA	<5.00	**0.774**
n-Hexane	NA	NA	**0.212**	**0.227**
Benzene	50	250	**0.367**	**0.354**
Toluene	1,000	82,000	**0.509**	**0.542**
		Aggregate VOCs:	6.3 ppbv	38.3 ppbv

Notes:
1. NA - indicates that the MassDEP has not established a sub-slab soil gas screening value for the parameter.
2. Samples were collected in Summa Canisters and analyzed by Method TO-15.
3. The Massachusetts Department of Environmental Protection (MassDEP) developed sub-slab soil gas screening values in October 2016.

- Indicates an exceedance of the Massachusetts (October 2016) Residential Sub-Slab Soil Gas Screening Criteria.

- Indicates an exceedance of the Massachusetts (October 2016) Residential & Commercial Sub-Slab Soil Gas Screening Criteria.

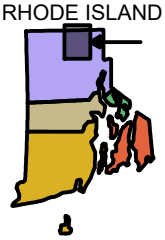
FIGURES



0 1000' 2000' 4000'

SCALE IN FEET

RHODE ISLAND



QUADRANGLE LOCATION

SOURCE:

BASE MAP FROM THE FOLLOWING USGS QUADRANGLE MAP:
WOONSOCKET, RHODE ISLAND (2015)

DIGITAL TOPOGRAPHIC MAPS PROVIDED BY USGSSTORE.GOV.

CONTOUR ELEVATIONS REFERENCE NAVD 88,
CONTOURS ARE SHOWN IN FEET AT 10' INTERVALS

N
W E
S

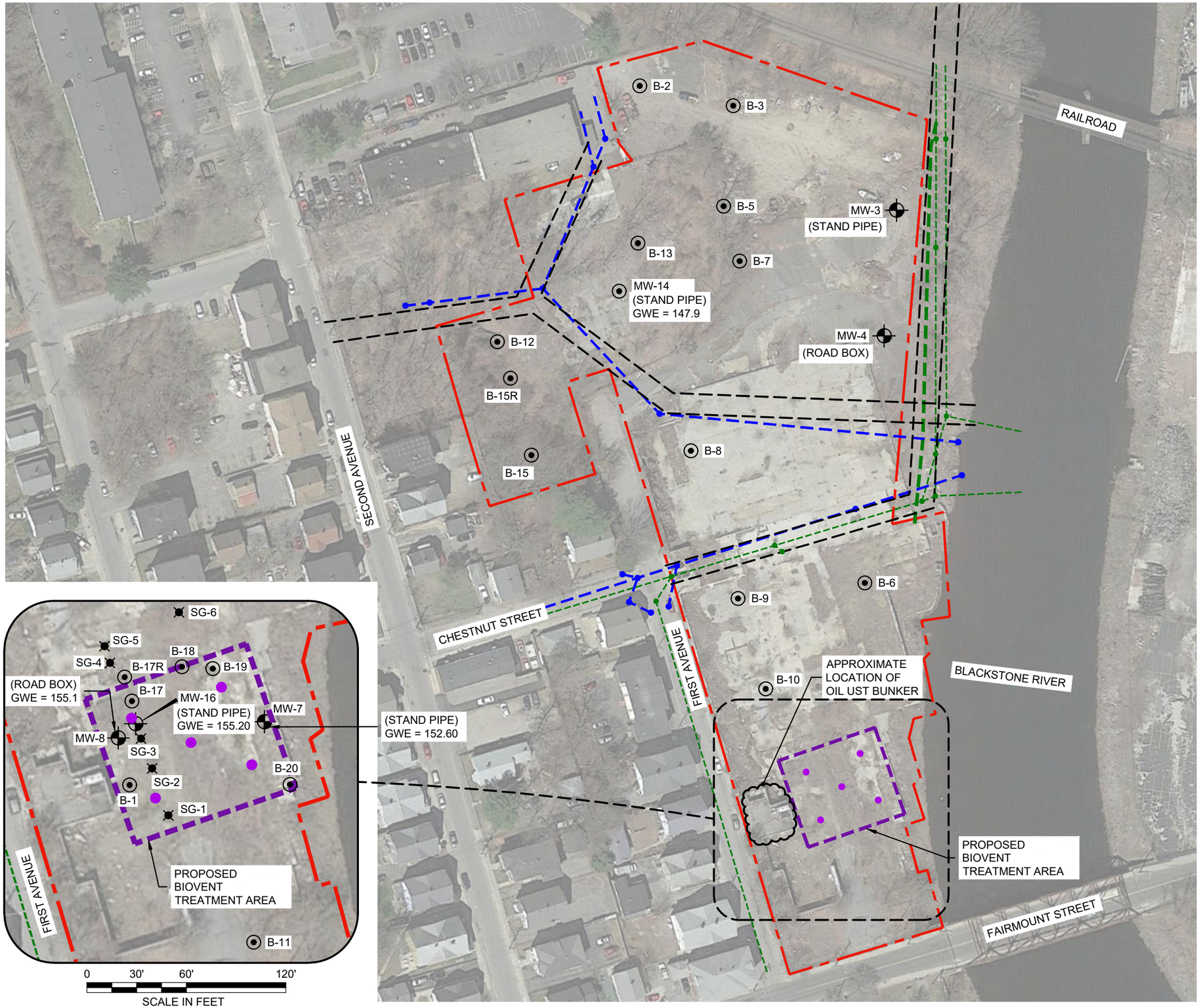
PHASE I ENVIRONMENTAL SITE ASSESSMENT
PLAT 6 - LOT 102, 117, 118
WOONSOCKET, RHODE ISLAND 02895

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
RIDEM

LOCUS MAP

PROJ MGR: RAC	REVIEWED BY: RAC	CHECKED BY: MEA	FIGURE 1
DESIGNED BY: -	DRAWN BY: GRB	SCALE: AS NOTED	
DATE: SEPTEMBER 2018	PROJECT NO. 34502.01	REVISION NO. 0	SHEET NO. 1 OF 3



REFERENCE NOTES:

1. BASE MAP DEVELOPED FROM A GOOGLE PROFESSIONAL ELECTRONIC IMAGE FILE. DIGITAL AERIAL ORTHOPHOTOGRAPHY WAS PUBLISHED ON APRIL 2018.
2. THE LOCATION OF THE EXPLORATIONS WERE APPROXIMATELY DETERMINED USING A LEICA ZENO 20 HANDHELD & AS-12 ANTENNA (MAST MOUNTED) WITH RTK CORRECTION ACCURAY OF 1 CM HORIZONTAL & 2 CM VERTICAL BY GZA PERSONNEL DURING A SITE VISIT ON NOVEMBER 11, 2018 AND JANUARY 17, 2020.
3. EXPLORATIONS PERFORMED BY HOFFMAN ENVIRONMENTAL SERVICES FROM NOVEMBER 27-28, 2018 AND OCTOBER 28 TO NOVEMBER 8, 2019, AND OBSERVED BY GZA PERSONNEL.

LEGEND:

- APPROXIMATE PROPERTY BOUNDARY
- EASEMENT LINE
- SEWER LINE
- SEWER FORCE MAIN
- DRAINAGE LINE
- B-1 — BORING
- MW-3 — MONITORING WELL
- SG-1 — SOIL GAS PROBES
- PROPOSED BIOVENT WELL

N W E S

0 50' 100' 200'
SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

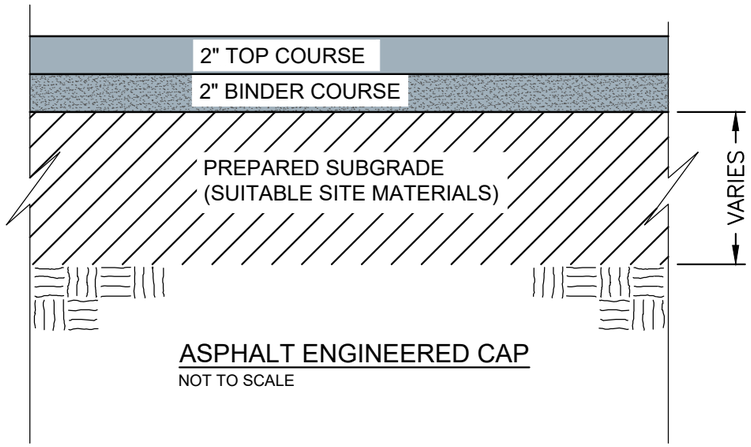
REMEDIAL ACTION WORK PLAN
PLAT 6 - LOT 102, 117, 118
WOONSOCKET, RHODE ISLAND 02895

EXPLORATION LOCATION PLAN

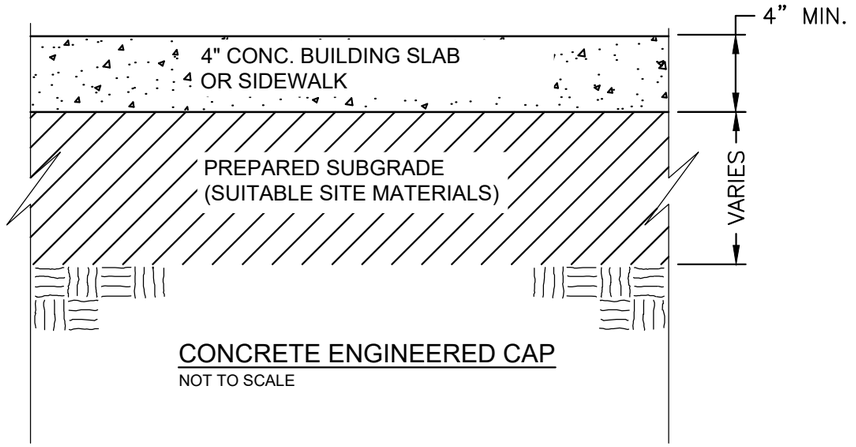
PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: RIDEM	
PROJ MGR: RAC	REVIEWED BY: EAS	CHECKED BY: MEA	FIGURE 2
DESIGNED BY: RAC	DRAWN BY: GRB	SCALE: AS NOTED	SHEET NO.
DATE: JANUARY, 2020	PROJECT NO. 34502.04	REVISION NO. 0	

REFERENCE NOTES:

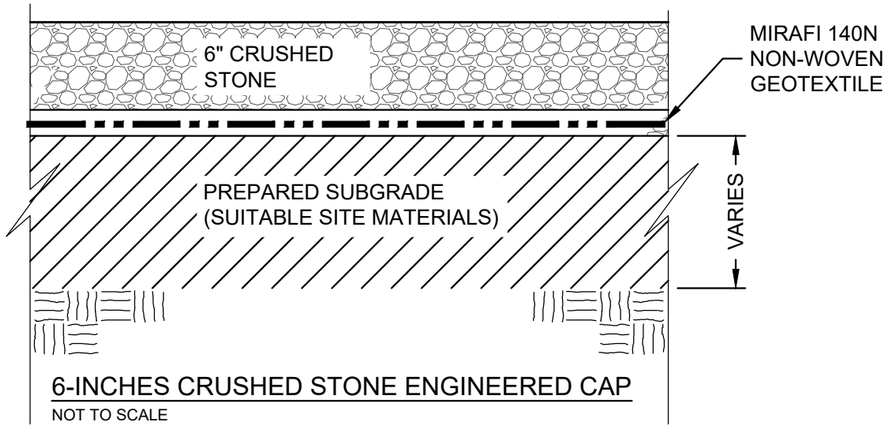
1. FOUR BASIC ENGINEERED CAP DETAILS SUGGESTED FOR USE ON SEVILLE DYE SITE OR AS DIRECTED.



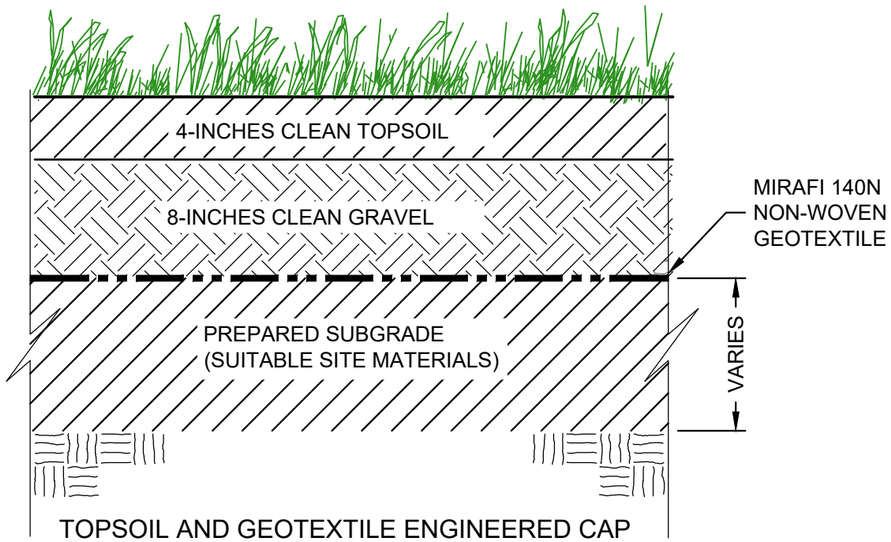
ASPHALT ENGINEERED CAP
NOT TO SCALE



CONCRETE ENGINEERED CAP
NOT TO SCALE



6-INCHES CRUSHED STONE ENGINEERED CAP
NOT TO SCALE



TOPSOIL AND GEOTEXTILE ENGINEERED CAP
NOT TO SCALE

NO.	ISSUE/DESCRIPTION	BY	DATE

REMEDIAL ACTION WORK PLAN
PLAT 6 - LOT 102, 117, 118
WOONSOCKET, RHODE ISLAND 02895

SITE CAPPING DETAILS

PREPARED BY:		PREPARED FOR:	
GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		RIDEM	
PROJ MGR: RAC	REVIEWED BY: EAS	CHECKED BY: MEA	FIGURE 3
DESIGNED BY: RAC	DRAWN BY: GRB	SCALE: AS NOTED	
DATE: JANUARY, 2020	PROJECT NO. 34502.04	REVISION NO. 0	SHEET NO.

APPENDIX A

LIMITATIONS

REMEDIAL COST OPINION LIMITATIONS

Use of Report

1. GeoEnvironmental, Inc. (GZA) prepared this Report on behalf of, and for the exclusive use of our Client at the stated time for the stated purpose(s) and location(s) identified in the Report. Use of this Report, in whole or in part, at other locations, or for other purposes, may lead to inappropriate conclusions; and we do not accept any responsibility for the consequences of such use(s). Further, reliance by any party not identified in the agreement, for any use, without our prior written permission, shall be at that party's sole risk, and without any liability to GZA.

Standard of Care

2. GZA's findings and conclusions are based on the work conducted as part of the Scope of Services set forth in the Report and/or proposal, and reflect our professional judgment. These findings and conclusions must be considered not as scientific or engineering certainties, but rather as our professional opinions concerning the limited data gathered during the course of our work.

3. GZA's services were performed using the degree of skill and care ordinarily exercised by qualified professionals performing the same type of services at the same time, under similar conditions, and at the same or a similar property. No warranty, expressed or implied, is made.

Basis of Opinion of Cost

4. GZA's opinion of cost is based on limited data which may not be sufficient to identify each and every condition existing at the site which may constitute noncompliance with applicable governmental statutes, rules, and regulations or constitute a release of oil or hazardous materials and/or may require remediation.

5. The costs on which the preliminary opinion of cost is based are limited to those conditions which were described in the Report.

6. Observations described in the Report were made under the conditions stated therein. Where access to portions of a structure or site was unavailable or limited, GZA renders no opinion as to the condition of those portions of the site or structure.

7. The conclusions presented in the Report were based solely upon the services described therein, and not on scientific tasks or procedures beyond the scope of described services or the time and budgetary constraints imposed by the Client.

Cost Assumptions

8. While the preliminary opinion of cost represents our professional judgment in this matter, actual conditions encountered during remediation may result in higher or lower costs.

9. The preliminary opinion of cost includes only those cost items identified, and should not be

assumed to include other costs such as legal, administrative, permitting or others. The preliminary opinion of cost also does not include any costs with respect to third-party claims, fines, penalties, or other charges which may be assessed against any responsible party because of either the existence of present conditions or the future existence or discovery of any such conditions.

10. The Report contains approximate cost opinions for purposes of evaluating alternative remedial programs. These estimates involve approximate quantity evaluations. Actual quantities and unit costs may vary. A preliminary cost opinion of this nature is likely to vary substantially from Contractors' Bid Prices and is not to be considered the equivalent of nor as reliable as Contractors' Bid Prices. Prices for similar work undertaken in the future will be subject to variations in market pricing, which are not within GZA's control. Detailed quantity and cost estimating should be performed by professional, experienced cost estimators to determine actual cost.

Reliance on Information provided by Others

11. In preparing the Report, GZA may have relied on certain information provided by the Client, state and local officials, and other parties referenced therein available to GZA at the time of the evaluation. GZA did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this evaluation.

Codes and Regulations

12. GZA used reasonable care in identifying and interpreting codes and regulations which are relevant to the costs estimated. These codes and regulations are subject to various, and possibly contradictory, interpretations. Compliance with codes and regulations by other parties is beyond our control.

13. Governmental agencies' interpretations, requirements, and enforcement policies vary from region to region, district office to district office, from state to state, and between federal and state agencies. In addition, statutes, rules, standards, and regulations may be legislatively changed and inter-agency and intra-agency policies may be changed from present practices. GZA has used its experience and judgment in making assumptions as to how anticipated changes in regulatory policies may affect remediation costs.

Additional Services

14. It is recommended that GZA be retained to provide engineering services during any final design, construction and/or implementation of any remedial measures recommended in this report. This will allow us the opportunity to: i) observe conditions and compliance with our design concepts and opinions; ii) allow for changes in the event that conditions are other than anticipated; iii) provide modifications to our design; and iv) assess the consequences of changes in technologies and/or regulations.

USE OF REPORT

1. GZA GeoEnvironmental, Inc. (GZA) prepared this report on behalf of, and for the exclusive use of our Client for the stated purpose(s) and location(s) identified in the Proposal for Services and/or Report. Use of this report, in whole or in part, at other locations, or for other purposes, may lead to inappropriate conclusions; and we do not accept any responsibility for the consequences of such use(s). Further, reliance by any party not expressly identified in the agreement, for any use, without our prior written permission, shall be at that party's sole risk, and without any liability to GZA.

STANDARD OF CARE

2. GZA's findings and conclusions are based on the work conducted as part of the Scope of Services set forth in the Proposal for Services and/or Report and reflect our professional judgment. These findings and conclusions must be considered not as scientific or engineering certainties, but rather as our professional opinions concerning the limited data gathered during the course of our work. Conditions other than described in this report may be found at the subject location(s).

3. GZA's services were performed using the degree of skill and care ordinarily exercised by qualified professionals performing the same type of services, at the same time, under similar conditions, at the same or a similar property. No warranty, expressed or implied, is made. Specifically, GZA does not and cannot represent that the Site contains no hazardous material, oil, or other latent condition beyond that observed by GZA during its study. Additionally, GZA makes no warranty that any response action or recommended action will achieve all of its objectives or that the findings of this study will be upheld by a local, state or federal agency.

4. In conducting our work, GZA relied upon certain information made available by public agencies, Client and/or others. GZA did not attempt to independently verify the accuracy or completeness of that information. Inconsistencies in this information which we have noted, if any, are discussed in the Report.

SUBSURFACE CONDITIONS

5. The generalized soil profile(s) provided in our Report are based on widely-spaced subsurface explorations and are intended only to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and were based on our assessment of subsurface conditions. The composition of strata, and the transitions between strata, may be more variable and more complex than indicated. For more specific information on soil conditions at a specific location refer to the exploration logs. The nature and extent of variations between these explorations may not become evident until further exploration or construction. If variations or other latent conditions then become evident, it will be necessary to reevaluate the conclusions and recommendations of this report.

6. Water level readings have been made, as described in this Report, in and monitoring wells at the specified times and under the stated conditions. These data have been reviewed and interpretations have been made in this report. Fluctuations in the level of the groundwater however occur due to temporal or spatial variations in areal recharge rates, soil heterogeneities, the presence of subsurface utilities, and/or natural or artificially induced perturbations. The observed water table may be other than indicated in the Report.

COMPLIANCE WITH CODES AND REGULATIONS

7. We used reasonable care in identifying and interpreting applicable codes and regulations necessary to execute our scope of work. These codes and regulations are subject to various, and possibly contradictory, interpretations. Interpretations and compliance with codes and regulations by other parties is beyond our control.

SCREENING AND ANALYTICAL TESTING

8. GZA collected environmental samples at the locations identified in the Report. These samples were analyzed for the specific parameters identified in the report. Additional constituents, for which analyses were not conducted, may be present in soil, groundwater, surface water, sediment and/or air. Future Site activities and uses may result in a requirement for additional testing.

9. Our interpretation of field screening and laboratory data is presented in the Report. Unless otherwise noted, we relied upon the laboratory's QA/QC program to validate these data.

10. Variations in the types and concentrations of contaminants observed at a given location or time may occur due to release mechanisms, disposal practices, changes in flow paths, and/or the influence of various physical, chemical, biological or radiological processes. Subsequently observed concentrations may be other than indicated in the Report.

INTERPRETATION OF DATA

11. Our opinions are based on available information as described in the Report, and on our professional judgment. Additional observations made over time, and/or space, may not support the opinions provided in the Report.

ADDITIONAL INFORMATION

12. In the event that the Client or others authorized to use this report obtain additional information on environmental or hazardous waste issues at the Site not contained in this report, such information shall be brought to GZA's attention forthwith. GZA will evaluate such information and, on the basis of this evaluation, may modify the conclusions stated in this report.

ADDITIONAL SERVICES

13. GZA recommends that we be retained to provide services during any future investigations, design, implementation activities, construction, and/or property development/ redevelopment at the Site. This will allow us the opportunity to: i) observe conditions and compliance with our design concepts and opinions; ii) allow for changes in the event that conditions are other than anticipated; iii) provide modifications to our design; and iv) assess the consequences of changes in technologies and/or regulations.

APPENDIX B

BORING LOGS

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

RIDEM
Seville Dyeing Company
117 & 229 First Avenue
Woonsocket, RI

EXPLORATION NO.: B-12
SHEET: 1 of 1
PROJECT NO: 03.0034502.04
REVIEWED BY: Rick Carlone

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 20
Date Start - Finish: 10/28/2019 - 10/28/2019

H. Datum:
V. Datum:

Hammer Type:
Hammer Weight (lb.):
Hammer Fall (in.):
Auger or Casing O.D./I.D Dia (in.): 2"

Sampler Type: Acetate Sleeve
Sampler O.D. (in.):
Sampler Length (in.):
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
				60	18			Top 4": Brown, topsoil S-1 (Bottom 14"): Dark brown, fine to coarse SAND, little fine Gravel, trace Silt, trace Brick, trace Asphalt	1	0.5	TOPSOIL	
5		S-2	5.0-10.0	60	2			S-2: Dark brown, fine to coarse SAND and fine GRAVEL, trace Silt			FILL	
10		S-3	10.0-15.0	60	36			S-3: Light gray-black, fine to coarse SAND, some fine Gravel, trace Silt, trace Brick, trace Metal, trace Concrete, trace Glass				
15		S-4A	15.0-20.0	60	60			S-4A: (Top 44"): Light gray-black, fine to coarse SAND, some fine Gravel, trace Silt, trace Asphalt S-4B (Bottom 16")": Gray, fine to medium SAND, some Silt, little fine Gravel, trace weathered Bedrock		18.5	GLACIAL TILL	
20								End of exploration at 20 feet.	2	20		
25												
30												

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 eV lamp. ND indicates non-detected reading below the instrument's detection of approximately 0.1ppm.
2 - Refusal at 20ft on glacial till. End of exploration.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-12

GZA TEMPLATE TEST BORING - GZA PLOG DATA TEMPLATE 03-20-18.GDT - 1/31/20 11:42 - J:\GINT PROJECT DATABASES\34502.04 SEVILLE DYEING COMPANY.GPJ

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

RIDEM
Seville Dyeing Company
117 & 229 First Avenue
Woonsocket, RI

EXPLORATION NO.: B-13
SHEET: 1 of 1
PROJECT NO: 03.0034502.04
REVIEWED BY: Rick Carlone

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 10
Date Start - Finish: 10/28/2019 - 10/28/2019

H. Datum:
V. Datum:

Hammer Type:
Hammer Weight (lb.):
Hammer Fall (in.):
Auger or Casing O.D./I.D Dia (in.): 2"

Sampler Type: Acetate Sleeve
Sampler O.D. (in.):
Sampler Length (in.):
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
				60	39			Top 4": Red brick Next 12": Grey, concrete S-1 (Bottom 23"): Brown, fine to coarse SAND, trace fine, Gravel, trace Silt	1	0.5	BRICK	
										1.5	CONCRETE	
5		S-2	5.0-10.0	60	44			S-2: Dark brown-black, fine to coarse SAND, little fine Gravel, trace Silt, trace Brick			FILL	
10										10		
								End of exploration at 10 feet.	2			
15												
20												
25												
30												

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 eV lamp. ND indicates non-detected reading below the instrument's detection of approximately 0.1ppm.
2 - End of Exploration at 10ft bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-13

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

RIDEM
Seville Dyeing Company
117 & 229 First Avenue
Woonsocket, RI

EXPLORATION NO.: B-15
SHEET: 1 of 1
PROJECT NO: 03.0034502.04
REVIEWED BY: Rick Carlone

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 7
Date Start - Finish: 10/28/2019 - 10/28/2019

H. Datum:
V. Datum:

Hammer Type:
Hammer Weight (lb.):
Hammer Fall (in.):
Auger or Casing O.D./I.D Dia (in.): 2"

Sampler Type: Acetate Sleeve
Sampler O.D. (in.):
Sampler Length (in.):
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
				60	32			Top 9": Gray concrete		0.5	CONCRETE	
								S-1A (Next 4"): Dark brown, fine to coarse SAND, little fine Gravel, trace Silt, trace Concrete				
								(Next 6"): Grey concrete	1		FILL	
								S-1B (Next 2"): Dark brown, fine to coarse SAND, little Silt, trace fine Gravel, trace Concrete				
5		S-2	5.0-7.0	24	24			S-1C (Next 9"): Brown-orange, fine to medium SAND, little Silt		5		
								S-1D (Bottom 2"): Brown-gray, fine to medium SAND, little Silt			GLACIAL TILL	
								S-2: (Top 22"): Gray, fine SAND, trace Silt		7		
								Bottom 2": Grey, rock	2			
								Refusal at 7 feet				
10												
15												
20												
25												
30												

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 eV lamp. ND indicates non-detected reading below the instrument's detection of approximately 0.1ppm.
2 - Refusal at 7ft bgs on bedrock. End of exploration.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-15

GZA TEMPLATE TEST BORING - GZA PLOG DATA TEMPLATE 03-20-18.GDT - 1/31/20 11:43 - J:\GINT PROJECT DATABASES\34502.04 SEVILLE DYEING COMPANY.GPJ

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

RIDEM
Seville Dyeing Company
117 & 229 First Avenue
Woonsocket, RI

EXPLORATION NO.: B-15R
SHEET: 1 of 1
PROJECT NO: 03.0034502.04
REVIEWED BY: Rick Carlone

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 10.6
Date Start - Finish: 10/28/2019 - 10/28/2019

H. Datum:
V. Datum:

Hammer Type:
Hammer Weight (lb.):
Hammer Fall (in.):
Auger or Casing O.D./I.D Dia (in.): 2"

Sampler Type: Acetate Sleeve
Sampler O.D. (in.):
Sampler Length (in.):
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
		S-1	0.0-5.0	60	0			S-1: No recovery				
5				60	58			S-2A (Top 6"): Brown-orange, fine to medium SAND, little fine Gravel, trace Silt S-2B (Next 4"): Dark brown, fine to coarse SAND, trace fine Gravel, trace Silt (Next 4"): Gray, concrete S-2C (Next 26"): Gray, fine SAND, some fine Gravel, trace Silt S-2D (Bottom 18"): Light gray-black, fine to coarse SAND, some fine Gravel, trace Silt	1		FILL	
10										10.6		
								End of exploration at 10.6 feet.				
15												
20												
25												
30												

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 eV lamp. ND indicates non-detected reading below the instrument's detection of approximately 0.1ppm.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-15R

GZA TEMPLATE TEST BORING - GZA PLOG DATA TEMPLATE 03-20-18.GDT - 1/31/20 11:43 - J:\GINT PROJECT DATABASES\34502.04 SEVILLE DYEING COMPANY.GPJ

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

RIDEM
Seville Dyeing Company
117 & 229 First Avenue
Woonsocket, RI

EXPLORATION NO.: B-17
SHEET: 1 of 1
PROJECT NO: 03.0034502.04
REVIEWED BY: Rick Carlone

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 4
Date Start - Finish: 10/28/2019 - 10/28/2019

H. Datum:
V. Datum:

Hammer Type:
Hammer Weight (lb.):
Hammer Fall (in.):
Auger or Casing O.D./I.D Dia (in.): 2"

Sampler Type: Acetate Sleeve
Sampler O.D. (in.):
Sampler Length (in.):
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
		S-1	0.0-4.0	48	0			S-1: No Recovery			CONCRETE	
										4		
5								Refusal at 4 feet	1			
10												
15												
20												
25												
30												

REMARKS

1 - Refusal at 4 ft bgs on concrete. End of exploration.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-17

GZA TEMPLATE TEST BORING - GZA PLOG DATA TEMPLATE 03-20-18.GDT - 1/31/20 11:43 - J:\GINT PROJECT DATABASES\34502.04 SEVILLE DYEING COMPANY.GPJ

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

RIDEM
Seville Dyeing Company
117 & 229 First Avenue
Woonsocket, RI

EXPLORATION NO.: B-17R
SHEET: 1 of 1
PROJECT NO: 03.0034502.04
REVIEWED BY: Rick Carlone

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 4
Date Start - Finish: 10/28/2019 - 10/28/2019

H. Datum:
V. Datum:

Hammer Type:
Hammer Weight (lb.):
Hammer Fall (in.):
Auger or Casing O.D./I.D Dia (in.): 2"

Sampler Type: Acetate Sleeve
Sampler O.D. (in.):
Sampler Length (in.):
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
		S-1	0.0-4.0	48	0			S-1: No Recovery			CONCRETE	
										4		
5								Refusal at 4 feet	1			
10												
15												
20												
25												
30												

REMARKS

1 - Refusal at 4ft bgs on concrete. End of exploration.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-17R

GZA TEMPLATE TEST BORING - GZA PLOG DATA TEMPLATE 03-20-18.GDT - 1/31/20 11:43 - J:\GINT PROJECT DATABASES\34502.04 SEVILLE DYEING COMPANY.GPJ

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

RIDEM
Seville Dyeing Company
117 & 229 First Avenue
Woonsocket, RI

EXPLORATION NO.: B-18
SHEET: 1 of 1
PROJECT NO: 03.0034502.04
REVIEWED BY: Rick Carlone

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 14
Date Start - Finish: 10/28/2019 - 10/28/2019

H. Datum:
V. Datum:

Hammer Type:
Hammer Weight (lb.):
Hammer Fall (in.):
Auger or Casing O.D./I.D Dia (in.): 2"

Sampler Type: Acetate Sleeve
Sampler O.D. (in.):
Sampler Length (in.):
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
				60	39			Top 12": Grey, concrete S-1A (Middle 3"): Dark brown, fine to coarse SAND, little fine Gravel, trace Silt S-1B (Bottom 24"): Brown, fine to coarse SAND, little fine Gravel, trace Silt, trace Brick	1	1	CONCRETE	
5		S-2A	5.0-10.0	60	19			S-2A: (Top 4"): Brown, fine to coarse SAND, little fine Gravel, trace Silt, trace Brick S-2B (Next 6"):Brown-black, fine to coarse SAND, little fine Gravel, trace Silt, green stained fibrous material S-2C (Next 4"): Black, fine to coarse SAND, trace Silt, wet, petroleum odor, fibrous material	2		FILL	
10		S-3A	10.0-14.0	48	46			S-3A: (Top 16"): Black, fine to coarse SAND, trace fine Gravel, trace Silt, petroleum odor S-3B (Bottom 30"): Gray- dark gray, fine to coarse SAND, little fine Gravel, trace Silt		10.5 11	CONCRETE FILL	
										14		
15								Refusal at 14 feet	3			
20												
25												
30												

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 eV lamp. ND indicates non-detected reading below the instrument's detection of approximately 0.1ppm.
2 - Soil gas probe (1"PVC) installed at 9ft bgs. Screened from 9'-4' bgs.
3 - Refusal at 14ft bgs. End of exploration.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-18

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

RIDEM
Seville Dyeing Company
117 & 229 First Avenue
Woonsocket, RI

EXPLORATION NO.: B-19
SHEET: 1 of 1
PROJECT NO: 03.0034502.04
REVIEWED BY: Rick Carlone

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 5.25
Date Start - Finish: 10/28/2019 - 10/28/2019

H. Datum:
V. Datum:

Hammer Type:
Hammer Weight (lb.):
Hammer Fall (in.):
Auger or Casing O.D./I.D Dia (in.): 2"

Sampler Type: Acetate Sleeve
Sampler O.D. (in.):
Sampler Length (in.):
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
				60	43			Top 10": Gray, concrete		0.5	CONCRETE	
								S-1A (Next 10"): Brown, fine to coarse SAND, some fine Gravel, trace Silt	1	2	FILL	
								(Next 12"): Gray, concrete		3	CONCRETE	
								S-1B (Next 7"): Brown, fine to coarse SAND, some fine Gravel, trace Silt				
5								S-1C (Bottom 4"): Black, fine to coarse SAND, little fine Gravel, trace Silt, petroleum odor			FILL	
										5.25		
								Refusal at 5.25 feet	2			
10												
15												
20												
25												
30												

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 eV lamp. ND indicates non-detected reading below the instrument's detection of approximately 0.1ppm.
2 - Refusal on concrete at ±5.25' bgs; End of exploration.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-19

GZA TEMPLATE TEST BORING - GZA PLOG DATA TEMPLATE 03-20-18.GDT - 1/31/20 11:43 - J:\GINT PROJECT DATABASES\34502.04 SEVILLE DYEING COMPANY.GPJ

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

RIDEM
Seville Dyeing Company
117 & 229 First Avenue
Woonsocket, RI

EXPLORATION NO.: B-20
SHEET: 1 of 1
PROJECT NO: 03.0034502.04
REVIEWED BY: Rick Carlone

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 19
Date Start - Finish: 10/28/2019 - 10/28/2019

H. Datum:
V. Datum:

Hammer Type:
Hammer Weight (lb.):
Hammer Fall (in.):
Auger or Casing O.D./I.D Dia (in.): 2"

Sampler Type: Acetate Sleeve
Sampler O.D. (in.):
Sampler Length (in.):
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
				60	38			Top 17": Gray concrete		1	CONCRETE	
								S-1A (Next 14"): brown-black, fine to coarse SAND, some fine Gravel, trace Silt, trace Brick, trace Glass	1			
								S-1B (Next 3"): Orange-brown, fine to coarse SAND, trace fine Gravel, trace Silt				
								S-1C (Bottom 4"): Brown-black, fine to coarse SAND, some fine Gravel, trace Silt, trace Brick, trace Glass				
5		S-2A	5.0-10.0	60	31			S-2A: (Top 8"): Brown/black, fine to coarse SAND, some fine Gravel, trace Silt, trace Brick, trace Glass				
								S-2B (Bottom 23"): Black, fine to coarse SAND, trace fine Gravel, trace Silt, trace Asphalt			FILL	
10		S-3A	10.0-15.0	60	60			S-3A: (Top 9"): Black, fine to coarse SAND, trace fine Gravel, trace Silt, trace Asphalt				
								S-3B (Bottom 23"): Brown/gray/white, fine to coarse SAND, some fine Gravel, trace Silt				
15		S-4A	15.0-19.0	48	48			S-4A: (Top 30"): Black, fine to coarse SAND, little fine Gravel, trace Silt, petroleum like odor				
								S-4B (Bottom 18"): Gray, fine to medium SAND, little Silt, trace fine Gravel		17	GLACIAL TILL	
									2	19		
20								Refusal at 19 feet				
25												
30												

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 eV lamp. ND indicates non-detected reading below the instrument's detection of approximately 0.1ppm.
2 - Refusal at ±19' bgs on bedrock; End of exploration.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: B-20

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

RIDEM
Seville Dyeing Company
117 & 229 First Avenue
Woonsocket, RI

EXPLORATION NO.: MW-14
SHEET: 1 of 2
PROJECT NO: 03.0034502.04
REVIEWED BY: Rick Carlone

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 34.5
Date Start - Finish: 10/29/2019 - 10/29/2019

H. Datum:
V. Datum:

Hammer Type:
Hammer Weight (lb.):
Hammer Fall (in.):
Auger or Casing O.D./I.D Dia (in.): 2"

Sampler Type: Acetate Sleeve
Sampler O.D. (in.):
Sampler Length (in.):
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
10/28/2019	12:23		28	

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
		S-1	0.0-5.0	60	26			S-1: Top 2": Brown topsoil S-1A (Next 8"): Gray-white, concrete S-1B (Next 8"): Black, fine to coarse SAND, some fine Gravel, trace Silt S-1C (Bottom 8"): Gray-brown, fine to coarse SAND, little fine Gravel, trace Silt, trace Brick	1	1.2 0.5	0.5	TOPSOIL		Road Box
5		S-2A	5.0-10.0	60	45			S-2A: (Top 17"): Tan, fine to coarse SAND, trace fine Gravel, trace Silt S-2B (Bottom 28"): Dark brown-black, fine to coarse SAND, little fine Gravel, trace Silt, trace Brick, trace Asphalt		0.6 6.6				
10		S-3A	10.0-15.0	60	41			S-3A: (Top 12"): Tan-gray, fine to coarse SAND, little fine Gravel, trace Silt S-3B (Bottom 29"): Dark brown-black, fine to coarse SAND, little fine Gravel, trace Silt, trace Brick, trace Glass, trace Asphalt		1.1 9.3		FILL		Native Sand
15		S-4A	15.0-20.0	60	33			S-4A: Top 15": Gray, fine to coarse SAND, trace fine Gravel, trace Silt, trace Glass S-4B (Bottom 18"): Dark brown-black, fine to coarse SAND, little Silt, trace fine Gravel, trace Glass		3.0 2.6				
20		S-5	20.0-25.0	60	24			S-5: Dark gray, fine to coarse SAND, some Silt, trace fine Gravel		0.3	20			Bentonite Seal
25		S-6A	25.0-30.0	60	38			S-6A: (Top 6"): Dark gray, fine to coarse SAND, little Silt, trace fine Gravel S-6B (Bottom 32"): Dark gray, fine to coarse SAND, some fine Gravel, trace Silt, wet	2	5.3		GLACIAL TILL		Filter Sand Well Screen
30														

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 eV lamp. ND indicates non-detected reading below the instrument's detection of approximately 0.1ppm.
2 - Groundwater observed at ±28' bgs.
3 - Observation well (2"PVC) installed at 34.5' bgs; screened from 34.5' to 24.5' bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: MW-14

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

RIDEM
Seville Dyeing Company
117 & 229 First Avenue
Woonsocket, RI

EXPLORATION NO.: MW-14
SHEET: 2 of 2
PROJECT NO: 03.0034502.04
REVIEWED BY: Rick Carlone

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 34.5
Date Start - Finish: 10/29/2019 - 10/29/2019

H. Datum:
V. Datum:

Hammer Type:
Hammer Weight (lb.):
Hammer Fall (in.):
Auger or Casing O.D./I.D Dia (in.): 2"

Sampler Type: Acetate Sleeve
Sampler O.D. (in.):
Sampler Length (in.):
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
10/28/2019	12:23		28	

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
		S-7	30.0-34.5	54	0			S-7: NO RECOVERY	3			GLACIAL TILL		
35								End of exploration at 34.5 feet.	4		34.5			
40														
45														
50														
55														
60														

REMARKS

4 - End of exploration at ±34.5' bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: MW-14

GZA TEMPLATE TEST BORING W/ EQUIP.; 1/31/2020; 11:43:33 AM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

RIDEM
Seville Dyeing Company
117 & 229 First Avenue
Woonsocket, RI

EXPLORATION NO.: MW-16
SHEET: 1 of 1
PROJECT NO: 03.0034502.04
REVIEWED BY: Rick Carlone

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push/ HSA

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 20
Date Start - Finish: 10/29/2019 - 11/8/2019

H. Datum:
V. Datum:

Hammer Type:
Hammer Weight (lb.):
Hammer Fall (in.):
Auger or Casing O.D./I.D Dia (in.): 2"

Sampler Type: Acetate Sleeve
Sampler O.D. (in.):
Sampler Length (in.):
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
10/29/2019	11:45		15	

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
				60	45			Top 2": Brown, topsoil		0.5	TOPSOIL	
								S-1A (Next 6"): Gray, concrete, dark brown, fine to coarse SAND, trace fine to coarse GRAVEL, trace Silt	1			
								S-1B (Next 6"): Black, fine to coarse SAND,, trace fine Gravel, trace Silt				
								S-1C (Next 15"): Tan, fine to coarse SAND, little fine to coarse Gravel, trace Silt				
5								S-1D (Next 5"): Black, fine to coarse SAND, trace fine Gravel, trace Silt				
		S-2A	5.0-10.0	60	48			S-1E (Bottom 6"): Dark brown, fine to medium SAND, trace coarse Sand, trace fine Gravel, trace Silt				
								S-2A: (Top 16"): Dark brown, fine to medium SAND, trace coarse Sand, trace fine Gravel, trace Silt				
								S-2B (Next 19"): Light brown, fine SAND, little coarse Gravel, little fine Gravel, trace Silt			FILL	
10		S-3A	10.0-15.0	60	52			S-2C (Bottom 13"): Black-white, fine to coarse SAND, little fine to coarse GRAVEL, trace Silt				
								S-3A: (Top 8"): Dark brown, fine to coarse SAND, little fine Gravel, trace Silt	2			
								S-3B (Bottom 44"): Black, fine to coarse SAND, some fine to coarse Gravel, trace Silt, petroleum odor, petroleum staining				
15		S-4A	15.0-20.0	60	60			S-4A: (Top 18"): Black, fine to coarse SAND, little fine to coarse Gravel,	3			
								trace Silt, wet, petroleum odor, petroleum staining	3			
								S-4B (Bottom 42"): Green-gray, fine to coarse SAND, little fine to coarse Gravel, little Silt, weathered rock shale, wet		17		
											GLACIAL TILL	
20										20		
								End of exploration at 20 feet.				
25												
30												

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 eV lamp. ND indicates non-detected reading below the instrument's detection of approximately 0.1ppm.
2 - Groundwater observed at ±15' bgs.
3 - Observation well (2"PVC) installed at 20' bgs; screened from 20' to 5' bgs.
3 - End of exploration at ±20' bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: MW-16

GZA TEMPLATE TEST BORING - GZA PLOG DATA TEMPLATE 03-20-18.GDT - 1/31/20 11:43 - J:\GINT PROJECT DATABASES\34502.04 SEVILLE DYEING COMPANY.GPJ

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

RIDEM
Seville Dyeing Company
117 & 229 First Avenue
Woonsocket, RI

EXPLORATION NO.: SG-1
SHEET: 1 of 1
PROJECT NO: 03.0034502.04
REVIEWED BY: Rick Carlone

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 14
Date Start - Finish: 10/29/2019 - 10/29/2019

H. Datum:
V. Datum:

Hammer Type:
Hammer Weight (lb.):
Hammer Fall (in.):
Auger or Casing O.D./I.D Dia (in.): 2"

Sampler Type: Acetate Sleeve
Sampler O.D. (in.):
Sampler Length (in.):
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
				60	42			Top 6" Dark brown, topsoil		0.5	TOPSOIL	
								S-1A (Next 29"): Black, fine to coarse SAND, little fine Gravel, trace Silt, trace Brick, trace Wood, trace Metal, trace Debris	1			
								Next 3": Gray concrete			FILL	
								S-1B (Bottom 4"): Dark brown, fine to coarse SAND, trace fine Gravel, trace Silt		4		
5										5	CONCRETE	
		S-2A	5.0-10.0	60	49			S-2A: (Top 9"): Brown, fine SAND, trace Silt, trace Organics				
								S-2B (Next 6"): Dark brown, fine SAND, little Silt				
								S-2C (Next 26"): Light brown, fine SAND, trace fine Gravel, trace Silt				
								S-2D (Bottom 8"): Tan, fine to coarse SAND, some fine to coarse Gravel, trace Silt	2		FILL	
									3			
10		S-3A	10.0-14.0	48	43			S-3A: (Top 9"): Tan, fine to coarse SAND, some fine to coarse Gravel, trace Silt				
								S-3B (Next 17"): Black, fine to coarse SAND, little fine to coarse Gravel, trace Silt, petroleum odor, petroleum staining		12		
								S-3C (Bottom 17"): Green-gray, fine to coarse SAND, little fine Gravel, little Silt, weathered rock shale			GLACIAL TILL	
									4	14		
15								End of exploration at 14 feet.				
20												
25												
30												

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 eV lamp. ND indicates non-detected reading below the instrument's detection of approximately 0.1ppm.
2 - Petroleum odor/staining observed in S-3B.
3 - Soil gas probe (1" PVC) installed at ±9' bgs; screened from 9-4' bgs.
4 - End of exploration at ±14' bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: SG-1

GZA TEMPLATE TEST BORING - GZA PLOG DATA TEMPLATE 03-20-18.GDT - 1/31/20 11:43 - J:\GINT PROJECT DATABASES\34502.04 SEVILLE DYEING COMPANY.GPJ

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

RIDEM
Seville Dyeing Company
117 & 229 First Avenue
Woonsocket, RI

EXPLORATION NO.: SG-2
SHEET: 1 of 1
PROJECT NO: 03.0034502.04
REVIEWED BY: Rick Carlone

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 10
Date Start - Finish: 10/29/2019 - 10/29/2019

H. Datum:
V. Datum:

Hammer Type:
Hammer Weight (lb.):
Hammer Fall (in.):
Auger or Casing O.D./I.D Dia (in.): 2"

Sampler Type: Acetate Sleeve
Sampler O.D. (in.):
Sampler Length (in.):
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
				60	52			Top 5": Brown, topsoil S-1A (Next 7"): Dark brown, fine to coarse SAND, little fine to coarse Gravel, trace Silt S-1B (Next 11"): Brown-orange, fine to coarse SAND, little fine Gravel, trace Silt, trace Glass S-1C (Next 22"): Black, fine to coarse SAND, little fine to coarse Gravel, trace Silt, trace Wood, trace Plastic, trace Brick, trace Ash S-1D (Bottom 9"): Brown, fine to medium SAND, trace fine to medium Gravel, trace Silt S-2A: Top 23": Dark brown, fine to medium SAND, little Silt, trace Organics, trace Wood S-2B (Bottom 11"): Light brown, fine SAND, little Silt, trace fine to medium Gravel	1	0.5	TOPSOIL	
5		S-2A	5.0-10.0	60	34						FILL	
10								Refusal at 10 feet	2 3	10		
15												
20												
25												
30												

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 eV lamp. ND indicates non-detected reading below the instrument's detection of approximately 0.1ppm.
2 - Soil gas probe (1" PVC) installed at ±9' bgs; screened from 9-4' bgs.
3 - Refusal at ±10' bgs; End of exploration.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: SG-2

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

RIDEM
Seville Dyeing Company
117 & 229 First Avenue
Woonsocket, RI

EXPLORATION NO.: SG-3
SHEET: 1 of 1
PROJECT NO: 03.0034502.04
REVIEWED BY: Rick Carlone

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 10
Date Start - Finish: 10/29/2019 - 10/29/2019

H. Datum:
V. Datum:

Hammer Type:
Hammer Weight (lb.):
Hammer Fall (in.):
Auger or Casing O.D./I.D Dia (in.): 2"

Sampler Type: Acetate Sleeve
Sampler O.D. (in.):
Sampler Length (in.):
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
				60	34			Top 5": Brown, topsoil S-1A (Next 6"): Dark brown, fine to coarse SAND, trace fine Gravel, trace Silt, trace Ash S-1B (Next 10"): Black, fine to coarse SAND, trace fine Gravel, trace Silt, trace Brick, trace Ash S-1C (Bottom 13"): Brown-gray, fine to coarse SAND, little fine to coarse Gravel, trace Silt	1	0.5	TOPSOIL	
5		S-2A	5.0-10.0	60	36			S-2A: Top 8": Dark brown, fine SAND, little Silt, trace fine Gravel S-2B (Next 12"): Brown, fine SAND, little Silt S-3C (Bottom 16"): White-black, fine to coarse SAND, some fine to coarse Gravel, trace Silt, petroleum odor, petroleum staining	2		FILL	
10								Refusal at 10 feet	3	10		
15												
20												
25												
30												

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 eV lamp. ND indicates non-detected reading below the instrument's detection of approximately 0.1ppm.
2 - Soil gas probe (1" PVC) installed at ±9' bgs; screened from 9-4' bgs.
3 - Refusal at ±10' bgs; End of exploration.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: SG-3

GZA TEMPLATE TEST BORING - GZA PLOG DATA TEMPLATE 03-20-18.GDT - 1/31/20 11:43 - J:\GINT PROJECT DATABASES\34502.04 SEVILLE DYEING COMPANY.GPJ

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

RIDEM
Seville Dyeing Company
117 & 229 First Avenue
Woonsocket, RI

EXPLORATION NO.: SG-4
SHEET: 1 of 1
PROJECT NO: 03.0034502.04
REVIEWED BY: Rick Carlone

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 10
Date Start - Finish: 10/29/2019 - 10/29/2019

H. Datum:
V. Datum:

Hammer Type:
Hammer Weight (lb.):
Hammer Fall (in.):
Auger or Casing O.D./I.D Dia (in.): 2"

Sampler Type: Acetate Sleeve
Sampler O.D. (in.):
Sampler Length (in.):
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (per 6 in.)	Sample SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
				60	28			Top 1": Dark brown, topsoil S-1A (Next 9"): Tan, fine to coarse SAND, little fine to coarse Gravel, little Brick, trace Silt S-1B (Bottom 3"): Brown, fine SAND, little Silt	1	0.5	TOPSOIL	
5		S-2A	5.0-10.0	60	51			S-2A: Top 14": Brown-dark brown, fine SAND, little Silt, trace Organics S-2B (Next 15"): Light brown, fine SAND, little Silt S-2C (Next 10"): Tan, fine to coarse SAND, little fine to coarse Gravel, trace Silt S-2D (Bottom 12"): Black, fine to coarse SAND, little fine to coarse Gravel, trace Silt, petroleum odor, petroleum staining, wet	2 3 4		FILL	
10								End of exploration at 10 feet.	5	10		
15												
20												
25												
30												

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 eV lamp. ND indicates non-detected reading below the instrument's detection of approximately 0.1ppm.
2 - Pipe with insulation and void encountered at 4.5' bgs.
3 - Soil gas probe (1" PVC) installed at ±8' bgs; screened from 8-3' bgs.
4 - Perched water, petroleum staining oder observed at ±9.5'-10' bgs.
5 - End of exploration at ±10' bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: SG-4

GZA TEMPLATE TEST BORING - GZA PLOG DATA TEMPLATE 03-20-18.GDT - 1/31/20 11:43 - J:\GINT PROJECT DATABASES\34502.04 SEVILLE DYEING COMPANY.GPJ

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

RIDEM
Seville Dyeing Company
117 & 229 First Avenue
Woonsocket, RI

EXPLORATION NO.: SG-5
SHEET: 1 of 1
PROJECT NO: 03.0034502.04
REVIEWED BY: Rick Carlone

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 15
Date Start - Finish: 10/29/2019 - 10/29/2019

H. Datum:
V. Datum:

Hammer Type:
Hammer Weight (lb.):
Hammer Fall (in.):
Auger or Casing O.D./I.D Dia (in.): 2"

Sampler Type: Acetate Sleeve
Sampler O.D. (in.):
Sampler Length (in.):
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (per 6 in.)	SPT Value	Sample Description (Modified Burmister Classification)	Remark	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
		S-1	0.0-5.0	60	0			S-1: No recovery	1 2		UNKNOWN	
5		S-2A	5.0-10.0	60	43			S-2A: (Top 19"): Light brown, fine SAND, trace Silt, trace Organics S-2B (Next 8"): Tan, fine SAND, trace Silt S-2C (Bottom 16"): Black-white, fine to coarse SAND, little fine to coarse Gravel, trace Silt, trace Cement		5	FILL	
10		S-3A	10.0-15.0	60	58			S-3A: (Top 22"): White-black, fine to coarse SAND, little fine Gravel, trace Silt, trace Brick S-3B (Bottom 36"): Green-gray, fine to coarse SAND, little fine Gravel, little Silt, weathered rock shale		12	GLACIAL TILL	
15									3	15		
								End of exploration at 10 feet.				
20												
25												
30												

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 eV lamp. ND indicates non-detected reading below the instrument's detection of approximately 0.1ppm.
2 - Liner melted for S-1 unable to recover soil sample.
3 - End of exploration at ±15' bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: SG-5

APPENDIX C

LABORATORY CERTIFICATES

CERTIFICATE OF ANALYSIS

Richard Carlone
GZA GeoEnvironmental, Inc.
188 Valley Street
Providence, RI 02909

RE: Seville Dyeing Company (03.0034502.04)
ESS Laboratory Work Order Number: 19J1092

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 3:20 pm, Nov 15, 2019

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19J1092

SAMPLE RECEIPT

The following samples were received on October 30, 2019 for the analyses specified on the enclosed Chain of Custody Record.

Revision 1 November 15, 2019: This report has been revised to include TPH Fingerprint analysis to samples 19J1092-01, -02, -05, and -06 per client's request.

Lab Number	Sample Name	Matrix	Analysis
19J1092-01	B-19 S-1C	Soil	8100M, N/A
19J1092-02	B-20 S-4A	Soil	8100M, N/A
19J1092-03	B-20 S-4B	Soil	8100M
19J1092-04	MW-16 S-4B	Soil	8100M
19J1092-05	SG-1 S-3B	Soil	8100M, N/A
19J1092-06	SG-4 S-2D	Soil	8100M, N/A
19J1092-07	SG-5 S-3B	Soil	8100M

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19J1092

PROJECT NARRATIVE

8100M Total Petroleum Hydrocarbons

19J1092-05 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
O-Terphenyl (330% @ 40-140%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19J1092

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B-19 S-1C
Date Sampled: 10/28/19 14:00
Percent Solids: 93
Initial Volume: 19.8
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J1092
ESS Laboratory Sample ID: 19J1092-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/30/19 20:36

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**1430** (40.7)		8100M		1	10/31/19 17:01	C9J0625	CJ93071

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*95 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B-19 S-1C
Date Sampled: 10/28/19 14:00
Percent Solids: 93
Initial Volume: 19.8
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J1092
ESS Laboratory Sample ID: 19J1092-01
Sample Matrix: Soil
Units: N/A
Analyst: CAD
Prepared: 10/30/19 20:36

Fingerprint ID

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Fingerprint	**Resembles: Diesel Fuel & Lubricating Oil Ranges.**								

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B-20 S-4A
Date Sampled: 10/28/19 15:15
Percent Solids: 92
Initial Volume: 19.7
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J1092
ESS Laboratory Sample ID: 19J1092-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/30/19 20:36

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**4340** (41.3)		8100M		1	10/31/19 17:38	C9J0625	CJ93071

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*134 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B-20 S-4A
Date Sampled: 10/28/19 15:15
Percent Solids: 92
Initial Volume: 19.7
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J1092
ESS Laboratory Sample ID: 19J1092-02
Sample Matrix: Soil
Units: N/A
Analyst: CAD
Prepared: 10/30/19 20:36

Fingerprint ID

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Fingerprint	**Resembles: Diesel Fuel & Lubricating Oil Ranges.**								

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B-20 S-4B
Date Sampled: 10/28/19 15:30
Percent Solids: 89
Initial Volume: 19.5
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J1092
ESS Laboratory Sample ID: 19J1092-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/30/19 20:36

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**68.9** (43.4)		8100M		1	10/31/19 18:14	C9J0625	CJ93071

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*93 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: MW-16 S-4B
Date Sampled: 10/29/19 11:45
Percent Solids: 88
Initial Volume: 19.8
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J1092
ESS Laboratory Sample ID: 19J1092-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/30/19 20:36

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**46.0** (43.0)		8100M		1	10/31/19 18:50	C9J0625	CJ93071

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*77 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: SG-1 S-3B
Date Sampled: 10/29/19 14:15
Percent Solids: 95
Initial Volume: 19.9
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J1092
ESS Laboratory Sample ID: 19J1092-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/30/19 20:36

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**12500** (399)		8100M		10	10/31/19 20:03	C9J0625	CJ93071

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*330 %*	*SM*	*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: SG-1 S-3B
Date Sampled: 10/29/19 14:15
Percent Solids: 95
Initial Volume: 19.9
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J1092
ESS Laboratory Sample ID: 19J1092-05
Sample Matrix: Soil
Units: N/A
Analyst: CAD
Prepared: 10/30/19 20:36

Fingerprint ID

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Fingerprint	**Resembles: Diesel Fuel & Lubricating Oil Ranges.**								

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: SG-4 S-2D
Date Sampled: 10/29/19 15:05
Percent Solids: 94
Initial Volume: 19.5
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J1092
ESS Laboratory Sample ID: 19J1092-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/30/19 20:36

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**5140** (407)		8100M		10	10/31/19 20:39	C9J0625	CJ93071

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*116 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: SG-4 S-2D
Date Sampled: 10/29/19 15:05
Percent Solids: 94
Initial Volume: 19.5
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J1092
ESS Laboratory Sample ID: 19J1092-06
Sample Matrix: Soil
Units: N/A
Analyst: CAD
Prepared: 10/30/19 20:36

Fingerprint ID

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Fingerprint	**Resembles: Diesel Fuel & Lubricating Oil Ranges.**								

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: SG-5 S-3B
Date Sampled: 10/29/19 15:30
Percent Solids: 86
Initial Volume: 19.6
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J1092
ESS Laboratory Sample ID: 19J1092-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/30/19 20:36

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (44.3)		8100M		1	10/31/19 19:27	C9J0625	CJ93071

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*91 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19J1092

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CJ93071 - 3546										
Blank										
Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							
Surrogate: O-Terphenyl	*4.79*		mg/kg wet	*5.000*		*96*	*40-140*			
LCS										
Decane (C10)	1.9	0.2	mg/kg wet	2.500		74	40-140			
Docosane (C22)	2.4	0.2	mg/kg wet	2.500		98	40-140			
Dodecane (C12)	2.0	0.2	mg/kg wet	2.500		79	40-140			
Eicosane (C20)	2.4	0.2	mg/kg wet	2.500		95	40-140			
Hexacosane (C26)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Hexadecane (C16)	2.2	0.2	mg/kg wet	2.500		86	40-140			
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		98	40-140			
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		63	30-140			
Octacosane (C28)	2.5	0.2	mg/kg wet	2.500		98	40-140			
Octadecane (C18)	2.3	0.2	mg/kg wet	2.500		92	40-140			
Tetracosane (C24)	2.4	0.2	mg/kg wet	2.500		98	40-140			
Tetradecane (C14)	2.1	0.2	mg/kg wet	2.500		83	40-140			
Total Petroleum Hydrocarbons	31.3	37.5	mg/kg wet	35.00		89	40-140			
Triacontane (C30)	2.4	0.2	mg/kg wet	2.500		98	40-140			
Surrogate: O-Terphenyl	*4.69*		mg/kg wet	*5.000*		*94*	*40-140*			
LCS Dup										
Decane (C10)	1.9	0.2	mg/kg wet	2.500		78	40-140	4	25	
Docosane (C22)	2.6	0.2	mg/kg wet	2.500		102	40-140	4	25	
Dodecane (C12)	2.0	0.2	mg/kg wet	2.500		82	40-140	4	25	
Eicosane (C20)	2.5	0.2	mg/kg wet	2.500		100	40-140	5	25	
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		100	40-140	3	25	
Hexadecane (C16)	2.3	0.2	mg/kg wet	2.500		90	40-140	5	25	
Nonadecane (C19)	2.6	0.2	mg/kg wet	2.500		102	40-140	5	25	
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		66	30-140	5	25	
Octacosane (C28)	2.5	0.2	mg/kg wet	2.500		100	40-140	2	25	
Octadecane (C18)	2.4	0.2	mg/kg wet	2.500		96	40-140	5	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19J1092

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CJ93071 - 3546										
Tetracosane (C24)	2.5	0.2	mg/kg wet	2.500		102	40-140	4	25	
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		87	40-140	4	25	
Total Petroleum Hydrocarbons	32.4	37.5	mg/kg wet	35.00		92	40-140	3	25	
Triacontane (C30)	2.5	0.2	mg/kg wet	2.500		99	40-140	1	25	
Surrogate: O-Terphenyl	*4.78*		mg/kg wet	*5.000*		*96*	*40-140*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company ESS Laboratory Work Order: 19J1092

Notes and Definitions

Z-01	Resembles: Diesel Fuel & Lubricating Oil Ranges.
U	Analyte included in the analysis, but not detected
SM	Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19J1092

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

Shipped/Delivered Via: Client

ESS Project ID: 19J1092
Date Received: 10/30/2019
Project Due Date: 11/6/2019
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 2.4 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / (NA)
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? Yes / (No)
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / (No)
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? (Yes) / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	406966	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	406965	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	406964	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
04	406963	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
05	406962	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
06	406961	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
07	406960	Yes	NA	Yes	4 oz. Jar - Unpres	NP	

2nd Review

Were all containers scanned into storage/lab? Initials SA
Are barcode labels on correct containers? Yes / No
Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA
Are all Hex Chrome stickers attached? Yes / No / NA
Are all QC stickers attached? Yes / No / NA
Are VOA stickers attached if bubbles noted? Yes / No / NA

Completed By: Date & Time: 10/30/19 1700
Reviewed By: Date & Time: 10/30/19 18:14
Delivered

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

ESS Project ID: 19J1092

Date Received: 10/30/2019

By: 10/30/19 18:14

CHAIN OF CUSTODY

ESS Laboratory
Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

ESS Lab # 1957092

Turn Time: 5 Days
Regulatory State: RI
Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP
Reporting Limits:
Electonic Deliverables: ☒ Data Checker ☒ Excel ☒ Other (Please Specify →) PDF

Company Name: GZA
Project #: 34502.04
Project Name: Seville Dye
Contact Person: Richard Carlone
Address: 148 Valley St, Suite 300
City: Providence
State: RI
Zip Code: 02909
PO #:
Telephone Number:
FAX Number:
Email Address: richard.carlone@gza.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: TPH	TPH Fingerprint*
1	10/28/19	1400	Grab	Soil	B-99/S-1C	X	X
2	10/29/19	1515	Grab	Soil	B-20/S-4A	X	X
3	10/29/19	1530	Grab	Soil	B-20/S-4B	X	
4	10/29/19	1145	Grab	Soil	MW-16/S-4B	X	
5	10/29/19	1415	Grab	Soil	SG-1/S-3B	X	X
6	10/29/19	1505	Grab	Soil	SG-4/S-2D	X	X
7	10/29/19	1530	Grab	Soil	SG-5/S-3B	X	

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial — AG: 9
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* — 1
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other* — 1
Number of Containers per Sample: 1

Laboratory Use Only
Cooler Present: Y ○ Drop Off
Seals Intact: NA ○ Pickup
Cooler Temperature: 2.4 °C

Sampled by : Rowan Hanes

Comments: Please specify "Other" preservative and containers types in this space
*REV1 TPH Fingerprint added per client 11/8/19 LLB

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
10/30/19 1100	10-30-19 1100		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
10/30/19 4:07	10/30/19 1607		

CHAIN OF CUSTODY

ESS Laboratory
Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

ESS Lab # 1957092

Turn Time: 5 Days
Regulatory State: RI
Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP
Reporting Limits:
Electonic Deliverables: ☒ Data Checker ☒ Excel ☒ Other (Please Specify →) PDF

Company Name	Project #	Project Name
GZA	34502.04	Seville Dye

Contact Person	Address	
Richard Carlone	148 Valley St, Suite 300	

City	State	Zip Code	PO #
Providence	RI	02909	

Telephone Number	FAX Number	Email Address
		richard.carlone@gza.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: TPH
1	10/28/19	1400	Grab	Soil	B-99/S-1C	X
2	10/29/19	1515	Grab	Soil	B-20/S-4A	X
3	10/29/19	1530	Grab	Soil	B-20/S-4B	X
4	10/29/19	1145	Grab	Soil	MW-16/S-4B	X
5	10/29/19	1415	Grab	Soil	SG-1/S-3B	X
6	10/29/19	1505	Grab	Soil	SG-4/S-2D	X
7	10/29/19	1530	Grab	Soil	SG-5/S-3B	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial — AG
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* — 9
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other* — 1
Number of Containers per Sample: 1

Laboratory Use Only
Cooler Present: Y ○ Drop Off
Seals Intact: N ○ Pickup
Cooler Temperature: 2.4 °C

Sampled by : Rowan Hanes
Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
10/30/19 1100	10-30-19 11:00		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
10/30/19 4:07	10/30/19 1607		

CERTIFICATE OF ANALYSIS

Richard Carlone
GZA GeoEnvironmental, Inc.
188 Valley Street
Providence, RI 02909

RE: Seville Dyeing Company (03.0034502.04)
ESS Laboratory Work Order Number: 19K0746

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 4:14 pm, Dec 06, 2019

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19K0746

SAMPLE RECEIPT

The following samples were received on November 22, 2019 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
19K0746-01	MW-14	Ground Water	8260B
19K0746-02	MW-16	Ground Water	8260B
19K0746-03	E-Soil	Ground Water	6010C, 6020A, 7010, 7470A, 8082A, 8100M, 8260B, 8270D SIM PAH
19K0746-04	E-GW	Ground Water	8260B
19K0746-05	Drum	Ground Water	2540D, 8260B, 8270D, 8270D SIM
19K0746-06	BD11222019	Ground Water	8260B
19K0746-07	Trip Blank	Ground Water	8260B

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19K0746

PROJECT NARRATIVE

8082A Polychlorinated Biphenyls (PCB)

CK92702-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Aroclor 1016 (23% @ 20%)

8270D Semi-Volatile Organic Compounds

C9K0419-CCV2 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (117% @ 80-120%), 4,6-Dinitro-2-Methylphenol (110% @ 80-120%), Benzoic Acid (93% @ 80-120%)

C9K0419-CCV2 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Hexachlorocyclopentadiene (39% @ 20%)

C9K0419-CCV2 **Initial Calibration Verification recovery is below lower control limit (ICV-).**
2,4-Dinitrotoluene

CK92556-BS1 **Blank Spike recovery is below lower control limit (B-).**
Hexachloroethane (38% @ 40-140%)

CK92556-BSD1 **Blank Spike recovery is below lower control limit (B-).**
Hexachloroethane (34% @ 40-140%)

CK92556-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Pyridine (25% @ 20%)

8270D(SIM) Semi-Volatile Organic Compounds

C9K0451-CCV1 **Calibration required quadratic regression (Q).**
2,4,6-Tribromophenol (134% @ 80-120%), Pentachlorophenol (99% @ 80-120%)

C9K0451-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2,4,6-Tribromophenol (34% @ 20%)

CK92556-BS2 **Surrogate recovery(ies) above upper control limit (S+).**
2,4,6-Tribromophenol (132% @ 15-110%)

CK92556-BSD2 **Surrogate recovery(ies) above upper control limit (S+).**
2,4,6-Tribromophenol (134% @ 15-110%)

No other observations noted.

End of Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company ESS Laboratory Work Order: 19K0746

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: MW-14
Date Sampled: 11/22/19 12:04
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/26/19 16:36	C9K0432	CK92632
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/26/19 16:36	C9K0432	CK92632
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/26/19 16:36	C9K0432	CK92632
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/26/19 16:36	C9K0432	CK92632
1-Chlorohexane	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
2-Butanone	ND (0.0100)		8260B		1	11/26/19 16:36	C9K0432	CK92632
2-Chlorotoluene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
2-Hexanone	ND (0.0100)		8260B		1	11/26/19 16:36	C9K0432	CK92632
4-Chlorotoluene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Acetone	ND (0.0100)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Benzene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Bromobenzene	ND (0.0020)		8260B		1	11/26/19 16:36	C9K0432	CK92632

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: MW-14
Date Sampled: 11/22/19 12:04
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Bromodichloromethane	ND (0.0006)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Bromoform	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Bromomethane	ND (0.0020)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Carbon Disulfide	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Chlorobenzene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Chloroethane	ND (0.0020)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Chloroform	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Chloromethane	ND (0.0020)		8260B		1	11/26/19 16:36	C9K0432	CK92632
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Dibromochloromethane	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Dibromomethane	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Diethyl Ether	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Di-isopropyl ether	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Ethylbenzene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Hexachloroethane	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Isopropylbenzene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Methylene Chloride	ND (0.0020)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Naphthalene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
n-Butylbenzene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
n-Propylbenzene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
sec-Butylbenzene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Styrene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
tert-Butylbenzene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Tetrachloroethene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: MW-14
Date Sampled: 11/22/19 12:04
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Toluene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Trichloroethene	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Vinyl Acetate	ND (0.0050)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Vinyl Chloride	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Xylene O	ND (0.0010)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Xylene P,M	ND (0.0020)		8260B		1	11/26/19 16:36	C9K0432	CK92632
Xylenes (Total)	ND (0.00200)		8260B		1	11/26/19 16:36		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*110 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*87 %*		*70-130*
Surrogate: Dibromofluoromethane	*104 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: MW-16
Date Sampled: 11/22/19 13:04
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/26/19 17:02	C9K0432	CK92632
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/26/19 17:02	C9K0432	CK92632
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/26/19 17:02	C9K0432	CK92632
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/26/19 17:02	C9K0432	CK92632
1-Chlorohexane	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
2-Butanone	ND (0.0100)		8260B		1	11/26/19 17:02	C9K0432	CK92632
2-Chlorotoluene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
2-Hexanone	ND (0.0100)		8260B		1	11/26/19 17:02	C9K0432	CK92632
4-Chlorotoluene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Acetone	ND (0.0100)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Benzene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Bromobenzene	ND (0.0020)		8260B		1	11/26/19 17:02	C9K0432	CK92632

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: MW-16
Date Sampled: 11/22/19 13:04
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Bromodichloromethane	ND (0.0006)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Bromoform	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Bromomethane	ND (0.0020)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Carbon Disulfide	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Chlorobenzene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Chloroethane	ND (0.0020)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Chloroform	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Chloromethane	ND (0.0020)		8260B		1	11/26/19 17:02	C9K0432	CK92632
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Dibromochloromethane	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Dibromomethane	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Diethyl Ether	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Di-isopropyl ether	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Ethylbenzene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Hexachloroethane	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Isopropylbenzene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Methylene Chloride	ND (0.0020)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Naphthalene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
n-Butylbenzene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
n-Propylbenzene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
sec-Butylbenzene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Styrene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
tert-Butylbenzene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Tetrachloroethene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: MW-16
Date Sampled: 11/22/19 13:04
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Toluene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Trichloroethene	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Vinyl Acetate	ND (0.0050)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Vinyl Chloride	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Xylene O	ND (0.0010)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Xylene P,M	ND (0.0020)		8260B		1	11/26/19 17:02	C9K0432	CK92632
Xylenes (Total)	ND (0.00200)		8260B		1	11/26/19 17:02		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*110 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*90 %*		*70-130*
Surrogate: Dibromofluoromethane	*102 %*		*70-130*
Surrogate: Toluene-d8	*101 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: E-Soil
Date Sampled: 11/22/19 11:10
Percent Solids: N/A

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-03
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.001)		6020A		1	NAR	11/25/19 11:20	50	25	CK92237
Arsenic	ND (0.002)		7010		1	KJK	11/26/19 17:00	50	25	CK92237
Beryllium	ND (0.0005)		6010C		1	KJK	11/22/19 21:31	50	25	CK92237
Cadmium	ND (0.0025)		6010C		1	KJK	11/22/19 21:31	50	25	CK92237
Chromium	ND (0.010)		6010C		1	KJK	11/22/19 21:31	50	25	CK92237
Copper	ND (0.010)		6010C		1	KJK	11/22/19 21:31	50	25	CK92237
Lead	ND (0.010)		6010C		1	KJK	11/22/19 21:31	50	25	CK92237
Mercury	ND (0.00020)		7470A		1	MKS	11/25/19 11:42	20	40	CK92238
Nickel	ND (0.025)		6010C		1	KJK	11/22/19 21:31	50	25	CK92237
Selenium	ND (0.005)		7010		1	KJK	11/26/19 22:23	50	25	CK92237
Silver	ND (0.005)		6010C		1	KJK	11/22/19 21:31	50	25	CK92237
Thallium	ND (0.0005)		6020A		1	NAR	11/25/19 11:20	50	25	CK92237
Zinc	ND (0.025)		6010C		1	KJK	11/22/19 21:31	50	25	CK92237

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: E-Soil
Date Sampled: 11/22/19 11:10
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MJV
Prepared: 11/27/19 12:03

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.00009)		8082A		1	12/02/19 18:37		CK92702
Aroclor 1221	ND (0.00009)		8082A		1	12/02/19 18:37		CK92702
Aroclor 1232	ND (0.00009)		8082A		1	12/02/19 18:37		CK92702
Aroclor 1242	ND (0.00009)		8082A		1	12/02/19 18:37		CK92702
Aroclor 1248	ND (0.00009)		8082A		1	12/02/19 18:37		CK92702
Aroclor 1254	ND (0.00009)		8082A		1	12/02/19 18:37		CK92702
Aroclor 1260	ND (0.00009)		8082A		1	12/02/19 18:37		CK92702
Aroclor 1262	ND (0.00009)		8082A		1	12/02/19 18:37		CK92702
Aroclor 1268	ND (0.00009)		8082A		1	12/02/19 18:37		CK92702

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*79 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*75 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*78 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*77 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: E-Soil
Date Sampled: 11/22/19 11:10
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: CAD
Prepared: 11/25/19 12:31

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (0.19)		8100M		1	11/25/19 17:07	C9K0396	CK92501

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*85 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: E-Soil
Date Sampled: 11/22/19 11:10
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/26/19 17:28	C9K0432	CK92632
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/26/19 17:28	C9K0432	CK92632
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/26/19 17:28	C9K0432	CK92632
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/26/19 17:28	C9K0432	CK92632
1-Chlorohexane	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
2-Butanone	ND (0.0100)		8260B		1	11/26/19 17:28	C9K0432	CK92632
2-Chlorotoluene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
2-Hexanone	ND (0.0100)		8260B		1	11/26/19 17:28	C9K0432	CK92632
4-Chlorotoluene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Acetone	ND (0.0100)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Benzene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Bromobenzene	ND (0.0020)		8260B		1	11/26/19 17:28	C9K0432	CK92632

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: E-Soil
Date Sampled: 11/22/19 11:10
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Bromodichloromethane	ND (0.0006)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Bromoform	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Bromomethane	ND (0.0020)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Carbon Disulfide	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Chlorobenzene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Chloroethane	ND (0.0020)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Chloroform	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Chloromethane	ND (0.0020)		8260B		1	11/26/19 17:28	C9K0432	CK92632
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Dibromochloromethane	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Dibromomethane	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Diethyl Ether	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Di-isopropyl ether	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Ethylbenzene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Hexachloroethane	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Isopropylbenzene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Methylene Chloride	ND (0.0020)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Naphthalene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
n-Butylbenzene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
n-Propylbenzene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
sec-Butylbenzene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Styrene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
tert-Butylbenzene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Tetrachloroethene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: E-Soil
Date Sampled: 11/22/19 11:10
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Toluene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Trichloroethene	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Vinyl Acetate	ND (0.0050)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Vinyl Chloride	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Xylene O	ND (0.0010)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Xylene P,M	ND (0.0020)		8260B		1	11/26/19 17:28	C9K0432	CK92632
Xylenes (Total)	ND (0.00200)		8260B		1	11/26/19 17:28		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*109 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*85 %*		*70-130*
Surrogate: Dibromofluoromethane	*104 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: E-Soil
Date Sampled: 11/22/19 11:10
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: VSC
Prepared: 11/27/19 14:00

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.0002)		8270D SIM PAH		1	11/27/19 23:33	C9K0451	CK92703
Acenaphthene	ND (0.0002)		8270D SIM PAH		1	11/27/19 23:33	C9K0451	CK92703
Acenaphthylene	ND (0.0002)		8270D SIM PAH		1	11/27/19 23:33	C9K0451	CK92703
Anthracene	ND (0.0002)		8270D SIM PAH		1	11/27/19 23:33	C9K0451	CK92703
Benzo(a)anthracene	ND (0.00005)		8270D SIM PAH		1	11/27/19 23:33	C9K0451	CK92703
Benzo(a)pyrene	ND (0.00005)		8270D SIM PAH		1	11/27/19 23:33	C9K0451	CK92703
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM PAH		1	11/27/19 23:33	C9K0451	CK92703
Benzo(g,h,i)perylene	ND (0.0002)		8270D SIM PAH		1	11/27/19 23:33	C9K0451	CK92703
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM PAH		1	11/27/19 23:33	C9K0451	CK92703
Chrysene	ND (0.00005)		8270D SIM PAH		1	11/27/19 23:33	C9K0451	CK92703
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM PAH		1	11/27/19 23:33	C9K0451	CK92703
Fluoranthene	ND (0.0002)		8270D SIM PAH		1	11/27/19 23:33	C9K0451	CK92703
Fluorene	ND (0.0002)		8270D SIM PAH		1	11/27/19 23:33	C9K0451	CK92703
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM PAH		1	11/27/19 23:33	C9K0451	CK92703
Naphthalene	ND (0.0002)		8270D SIM PAH		1	11/27/19 23:33	C9K0451	CK92703
Phenanthrene	ND (0.0002)		8270D SIM PAH		1	11/27/19 23:33	C9K0451	CK92703
Pyrene	ND (0.0002)		8270D SIM PAH		1	11/27/19 23:33	C9K0451	CK92703

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*55 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*64 %*		*30-130*
Surrogate: Nitrobenzene-d5	*89 %*		*30-130*
Surrogate: p-Terphenyl-d14	*90 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: E-GW
Date Sampled: 11/22/19 13:20
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/26/19 17:53	C9K0432	CK92632
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/26/19 17:53	C9K0432	CK92632
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/26/19 17:53	C9K0432	CK92632
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/26/19 17:53	C9K0432	CK92632
1-Chlorohexane	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
2-Butanone	ND (0.0100)		8260B		1	11/26/19 17:53	C9K0432	CK92632
2-Chlorotoluene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
2-Hexanone	ND (0.0100)		8260B		1	11/26/19 17:53	C9K0432	CK92632
4-Chlorotoluene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Acetone	**0.0169** (0.0100)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Benzene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Bromobenzene	ND (0.0020)		8260B		1	11/26/19 17:53	C9K0432	CK92632

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: E-GW
Date Sampled: 11/22/19 13:20
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Bromodichloromethane	ND (0.0006)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Bromoform	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Bromomethane	ND (0.0020)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Carbon Disulfide	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Chlorobenzene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Chloroethane	ND (0.0020)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Chloroform	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Chloromethane	ND (0.0020)		8260B		1	11/26/19 17:53	C9K0432	CK92632
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Dibromochloromethane	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Dibromomethane	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Diethyl Ether	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Di-isopropyl ether	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Ethylbenzene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Hexachloroethane	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Isopropylbenzene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Methylene Chloride	ND (0.0020)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Naphthalene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
n-Butylbenzene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
n-Propylbenzene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
sec-Butylbenzene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Styrene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
tert-Butylbenzene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Tetrachloroethene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: E-GW
Date Sampled: 11/22/19 13:20
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Toluene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Trichloroethene	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Vinyl Acetate	ND (0.0050)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Vinyl Chloride	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Xylene O	ND (0.0010)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Xylene P,M	ND (0.0020)		8260B		1	11/26/19 17:53	C9K0432	CK92632
Xylenes (Total)	ND (0.00200)		8260B		1	11/26/19 17:53		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*108 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*86 %*		*70-130*
Surrogate: Dibromofluoromethane	*102 %*		*70-130*
Surrogate: Toluene-d8	*103 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: Drum
Date Sampled: 11/22/19 13:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/26/19 18:19	C9K0432	CK92632
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/26/19 18:19	C9K0432	CK92632
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/26/19 18:19	C9K0432	CK92632
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/26/19 18:19	C9K0432	CK92632
1-Chlorohexane	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
2-Butanone	ND (0.0100)		8260B		1	11/26/19 18:19	C9K0432	CK92632
2-Chlorotoluene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
2-Hexanone	ND (0.0100)		8260B		1	11/26/19 18:19	C9K0432	CK92632
4-Chlorotoluene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Acetone	**0.499** (0.0100)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Benzene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Bromobenzene	ND (0.0020)		8260B		1	11/26/19 18:19	C9K0432	CK92632

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: Drum
Date Sampled: 11/22/19 13:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Bromodichloromethane	ND (0.0006)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Bromoform	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Bromomethane	ND (0.0020)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Carbon Disulfide	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Chlorobenzene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Chloroethane	ND (0.0020)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Chloroform	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Chloromethane	ND (0.0020)		8260B		1	11/26/19 18:19	C9K0432	CK92632
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Dibromochloromethane	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Dibromomethane	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Diethyl Ether	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Di-isopropyl ether	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Ethylbenzene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Hexachloroethane	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Isopropylbenzene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Methylene Chloride	ND (0.0020)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Naphthalene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
n-Butylbenzene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
n-Propylbenzene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
sec-Butylbenzene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Styrene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
tert-Butylbenzene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Tetrachloroethene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: Drum
Date Sampled: 11/22/19 13:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Toluene	**0.0091** (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Trichloroethene	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Vinyl Acetate	ND (0.0050)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Vinyl Chloride	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Xylene O	ND (0.0010)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Xylene P,M	ND (0.0020)		8260B		1	11/26/19 18:19	C9K0432	CK92632
Xylenes (Total)	ND (0.00200)		8260B		1	11/26/19 18:19		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*104 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*81 %*		*70-130*
Surrogate: Dibromofluoromethane	*99 %*		*70-130*
Surrogate: Toluene-d8	*93 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: Drum
Date Sampled: 11/22/19 13:30
Percent Solids: N/A
Initial Volume: 1060
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: TAJ
Prepared: 11/25/19 17:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
1,2-Dichlorobenzene	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
1,3-Dichlorobenzene	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
1,4-Dichlorobenzene	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	11/26/19 20:36	C9K0419	CK92556
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
2,4-Dichlorophenol	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
2,4-Dimethylphenol	ND (0.047)		8270D		1	11/26/19 20:36	C9K0419	CK92556
2,4-Dinitrophenol	ND (0.047)		8270D		1	11/26/19 20:36	C9K0419	CK92556
2,4-Dinitrotoluene	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
2,6-Dinitrotoluene	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
2-Chloronaphthalene	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
2-Chlorophenol	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
2-Methylphenol	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
2-Nitroaniline	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
2-Nitrophenol	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	11/26/19 20:36	C9K0419	CK92556
3+4-Methylphenol	ND (0.019)		8270D		1	11/26/19 20:36	C9K0419	CK92556
3-Nitroaniline	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	11/26/19 20:36	C9K0419	CK92556
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
4-Chloroaniline	ND (0.019)		8270D		1	11/26/19 20:36	C9K0419	CK92556
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
4-Nitroaniline	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
4-Nitrophenol	ND (0.047)		8270D		1	11/26/19 20:36	C9K0419	CK92556
Acetophenone	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
Aniline	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
Azobenzene	ND (0.019)		8270D		1	11/26/19 20:36	C9K0419	CK92556
Benzoic Acid	ND (0.094)		8270D		1	11/26/19 20:36	C9K0419	CK92556

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: Drum
Date Sampled: 11/22/19 13:30
Percent Solids: N/A
Initial Volume: 1060
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: TAJ
Prepared: 11/25/19 17:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	11/26/19 20:36	C9K0419	CK92556
Butylbenzylphthalate	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
Carbazole	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
Dibenzofuran	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
Diethylphthalate	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
Dimethylphthalate	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
Di-n-butylphthalate	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
Di-n-octylphthalate	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
Hexachlorobutadiene	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
Hexachlorocyclopentadiene	ND (0.024)		8270D		1	11/26/19 20:36	C9K0419	CK92556
Hexachloroethane	ND (0.005)		8270D		1	11/26/19 20:36	C9K0419	CK92556
Isophorone	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
Nitrobenzene	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
N-Nitrosodimethylamine	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
N-nitrosodiphenylamine	ND (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
Phenol	**0.016** (0.009)		8270D		1	11/26/19 20:36	C9K0419	CK92556
Pyridine	ND (0.094)		8270D		1	11/26/19 20:36	C9K0419	CK92556

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*77 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*110 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*80 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*76 %*		*30-130*
Surrogate: 2-Fluorophenol	*70 %*		*15-110*
Surrogate: Nitrobenzene-d5	*82 %*		*30-130*
Surrogate: Phenol-d6	*79 %*		*15-110*
Surrogate: p-Terphenyl-d14	*60 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: Drum
Date Sampled: 11/22/19 13:30
Percent Solids: N/A
Initial Volume: 1060
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: VSC
Prepared: 11/25/19 17:00

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.00019)		8270D SIM		1	11/27/19 21:09	C9K0451	CK92556
Acenaphthene	**0.00020** (0.00019)		8270D SIM		1	11/27/19 21:09	C9K0451	CK92556
Acenaphthylene	ND (0.00019)		8270D SIM		1	11/27/19 21:09	C9K0451	CK92556
Anthracene	**0.00033** (0.00019)		8270D SIM		1	11/27/19 21:09	C9K0451	CK92556
Benzo(a)anthracene	**0.00040** (0.00005)		8270D SIM		1	11/27/19 21:09	C9K0451	CK92556
Benzo(a)pyrene	**0.00027** (0.00005)		8270D SIM		1	11/27/19 21:09	C9K0451	CK92556
Benzo(b)fluoranthene	**0.00029** (0.00005)		8270D SIM		1	11/27/19 21:09	C9K0451	CK92556
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	11/27/19 21:09	C9K0451	CK92556
Benzo(k)fluoranthene	**0.00011** (0.00005)		8270D SIM		1	11/27/19 21:09	C9K0451	CK92556
Chrysene	**0.00037** (0.00005)		8270D SIM		1	11/27/19 21:09	C9K0451	CK92556
Dibenzo(a,h)Anthracene	**0.00005** (0.00005)		8270D SIM		1	11/27/19 21:09	C9K0451	CK92556
Fluoranthene	**0.00098** (0.00019)		8270D SIM		1	11/27/19 21:09	C9K0451	CK92556
Fluorene	**0.00021** (0.00019)		8270D SIM		1	11/27/19 21:09	C9K0451	CK92556
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	11/27/19 21:09	C9K0451	CK92556
Indeno(1,2,3-cd)Pyrene	**0.00017** (0.00005)		8270D SIM		1	11/27/19 21:09	C9K0451	CK92556
Naphthalene	ND (0.00019)		8270D SIM		1	11/27/19 21:09	C9K0451	CK92556
Pentachlorophenol	ND (0.00085)		8270D SIM		1	11/27/19 21:09	C9K0451	CK92556
Phenanthrene	**0.00108** (0.00019)		8270D SIM		1	11/27/19 21:09	C9K0451	CK92556
Pyrene	**0.00102** (0.00019)		8270D SIM		1	11/27/19 21:09	C9K0451	CK92556

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*67 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*97 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*69 %*		*30-130*
Surrogate: Nitrobenzene-d5	*117 %*		*30-130*
Surrogate: p-Terphenyl-d14	*58 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: Drum
Date Sampled: 11/22/19 13:30
Percent Solids: N/A

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-05
Sample Matrix: Ground Water

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Suspended Solids	**82** (10)		2540D		1	CCP	11/26/19 14:17	mg/L	CK92612

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: BD11222019
Date Sampled: 11/22/19 08:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/26/19 18:44	C9K0432	CK92632
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/26/19 18:44	C9K0432	CK92632
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/26/19 18:44	C9K0432	CK92632
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/26/19 18:44	C9K0432	CK92632
1-Chlorohexane	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
2-Butanone	ND (0.0100)		8260B		1	11/26/19 18:44	C9K0432	CK92632
2-Chlorotoluene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
2-Hexanone	ND (0.0100)		8260B		1	11/26/19 18:44	C9K0432	CK92632
4-Chlorotoluene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Acetone	ND (0.0100)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Benzene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Bromobenzene	ND (0.0020)		8260B		1	11/26/19 18:44	C9K0432	CK92632

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: BD11222019
Date Sampled: 11/22/19 08:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Bromodichloromethane	ND (0.0006)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Bromoform	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Bromomethane	ND (0.0020)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Carbon Disulfide	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Chlorobenzene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Chloroethane	ND (0.0020)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Chloroform	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Chloromethane	ND (0.0020)		8260B		1	11/26/19 18:44	C9K0432	CK92632
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Dibromochloromethane	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Dibromomethane	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Diethyl Ether	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Di-isopropyl ether	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Ethylbenzene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Hexachloroethane	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Isopropylbenzene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Methylene Chloride	ND (0.0020)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Naphthalene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
n-Butylbenzene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
n-Propylbenzene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
sec-Butylbenzene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Styrene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
tert-Butylbenzene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Tetrachloroethene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: BD11222019
Date Sampled: 11/22/19 08:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Toluene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Trichloroethene	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Vinyl Acetate	ND (0.0050)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Vinyl Chloride	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Xylene O	ND (0.0010)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Xylene P,M	ND (0.0020)		8260B		1	11/26/19 18:44	C9K0432	CK92632
Xylenes (Total)	ND (0.00200)		8260B		1	11/26/19 18:44		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*111 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*87 %*		*70-130*
Surrogate: Dibromofluoromethane	*104 %*		*70-130*
Surrogate: Toluene-d8	*103 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: Trip Blank
Date Sampled: 11/22/19 08:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/26/19 11:56	C9K0432	CK92632
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/26/19 11:56	C9K0432	CK92632
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/26/19 11:56	C9K0432	CK92632
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/26/19 11:56	C9K0432	CK92632
1-Chlorohexane	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
2-Butanone	ND (0.0100)		8260B		1	11/26/19 11:56	C9K0432	CK92632
2-Chlorotoluene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
2-Hexanone	ND (0.0100)		8260B		1	11/26/19 11:56	C9K0432	CK92632
4-Chlorotoluene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Acetone	ND (0.0100)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Benzene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Bromobenzene	ND (0.0020)		8260B		1	11/26/19 11:56	C9K0432	CK92632

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: Trip Blank
Date Sampled: 11/22/19 08:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Bromodichloromethane	ND (0.0006)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Bromoform	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Bromomethane	ND (0.0020)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Carbon Disulfide	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Chlorobenzene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Chloroethane	ND (0.0020)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Chloroform	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Chloromethane	ND (0.0020)		8260B		1	11/26/19 11:56	C9K0432	CK92632
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Dibromochloromethane	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Dibromomethane	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Diethyl Ether	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Di-isopropyl ether	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Ethylbenzene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Hexachloroethane	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Isopropylbenzene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Methylene Chloride	ND (0.0020)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Naphthalene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
n-Butylbenzene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
n-Propylbenzene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
sec-Butylbenzene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Styrene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
tert-Butylbenzene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Tetrachloroethene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: Trip Blank
Date Sampled: 11/22/19 08:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19K0746
ESS Laboratory Sample ID: 19K0746-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Toluene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Trichloroethene	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Vinyl Acetate	ND (0.0050)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Vinyl Chloride	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Xylene O	ND (0.0010)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Xylene P,M	ND (0.0020)		8260B		1	11/26/19 11:56	C9K0432	CK92632
Xylenes (Total)	ND (0.00200)		8260B		1	11/26/19 11:56		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*108 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*87 %*		*70-130*
Surrogate: Dibromofluoromethane	*103 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19K0746

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CK92237 - 3005A/200.7										
Blank										
Arsenic	ND	0.002	mg/L							
Beryllium	ND	0.0005	mg/L							
Cadmium	ND	0.0025	mg/L							
Chromium	ND	0.010	mg/L							
Copper	ND	0.010	mg/L							
Lead	ND	0.010	mg/L							
Nickel	ND	0.025	mg/L							
Silver	ND	0.005	mg/L							
Zinc	ND	0.025	mg/L							
Blank										
Antimony	ND	0.001	mg/L							
Thallium	ND	0.0005	mg/L							
Blank										
Selenium	ND	0.005	mg/L							
LCS										
Beryllium	0.0244	0.0005	mg/L	0.02500		98	80-120			
Cadmium	0.119	0.0025	mg/L	0.1250		95	80-120			
Chromium	0.250	0.010	mg/L	0.2500		100	80-120			
Copper	0.255	0.010	mg/L	0.2500		102	80-120			
Lead	0.254	0.010	mg/L	0.2500		102	80-120			
Nickel	0.255	0.025	mg/L	0.2500		102	80-120			
Silver	0.126	0.005	mg/L	0.1250		101	80-120			
Zinc	0.249	0.025	mg/L	0.2500		100	80-120			
LCS										
Antimony	0.249	0.005	mg/L	0.2500		99	80-120			
Thallium	0.235	0.002	mg/L	0.2500		94	80-120			
LCS										
Arsenic	0.225	0.062	mg/L	0.2500		90	80-120			
Selenium	0.499	0.125	mg/L	0.5000		100	80-120			
LCS Dup										
Beryllium	0.0240	0.0005	mg/L	0.02500		96	80-120	2	20	
Cadmium	0.118	0.0025	mg/L	0.1250		95	80-120	0.9	20	
Chromium	0.243	0.010	mg/L	0.2500		97	80-120	2	20	
Copper	0.250	0.010	mg/L	0.2500		100	80-120	2	20	
Lead	0.250	0.010	mg/L	0.2500		100	80-120	2	20	
Nickel	0.248	0.025	mg/L	0.2500		99	80-120	3	20	
Silver	0.124	0.005	mg/L	0.1250		99	80-120	2	20	
Zinc	0.244	0.025	mg/L	0.2500		98	80-120	2	20	
LCS Dup										
Antimony	0.243	0.005	mg/L	0.2500		97	80-120	2	20	
Thallium	0.235	0.002	mg/L	0.2500		94	80-120	0.06	20	
LCS Dup										

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19K0746

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CK92237 - 3005A/200.7										
Arsenic	0.209	0.062	mg/L	0.2500		84	80-120	8	20	
Selenium	0.540	0.125	mg/L	0.5000		108	80-120	8	20	
Batch CK92238 - 245.1/7470A										
Blank										
Mercury	ND	0.00020	mg/L							
Blank										
Mercury	ND	0.00020	mg/L							
LCS										
Mercury	0.00587	0.00020	mg/L	0.006042		97	80-120			
LCS Dup										
Mercury	0.00586	0.00020	mg/L	0.006042		97	80-120	0.2	20	
8082A Polychlorinated Biphenyls (PCB)										
Batch CK92702 - 3510C										
Blank										
Aroclor 1016	ND	0.00005	mg/L							
Aroclor 1016 [2C]	ND	0.00005	mg/L							
Aroclor 1221	ND	0.00005	mg/L							
Aroclor 1221 [2C]	ND	0.00005	mg/L							
Aroclor 1232	ND	0.00005	mg/L							
Aroclor 1232 [2C]	ND	0.00005	mg/L							
Aroclor 1242	ND	0.00005	mg/L							
Aroclor 1242 [2C]	ND	0.00005	mg/L							
Aroclor 1248	ND	0.00005	mg/L							
Aroclor 1248 [2C]	ND	0.00005	mg/L							
Aroclor 1254	ND	0.00005	mg/L							
Aroclor 1254 [2C]	ND	0.00005	mg/L							
Aroclor 1260	ND	0.00005	mg/L							
Aroclor 1260 [2C]	ND	0.00005	mg/L							
Aroclor 1262	ND	0.00005	mg/L							
Aroclor 1262 [2C]	ND	0.00005	mg/L							
Aroclor 1268	ND	0.00005	mg/L							
Aroclor 1268 [2C]	ND	0.00005	mg/L							
Surrogate: Decachlorobiphenyl	*ND*		mg/L	*0.00005000*		*85*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*ND*		mg/L	*0.00005000*		*87*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*ND*		mg/L	*0.00005000*		*68*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*ND*		mg/L	*0.00005000*		*74*	*30-150*			
LCS										
Aroclor 1016	0.00103	0.00005	mg/L	0.001000		103	40-140			
Aroclor 1016 [2C]	0.00094	0.00005	mg/L	0.001000		94	40-140			
Aroclor 1260	0.00099	0.00005	mg/L	0.001000		99	40-140			
Aroclor 1260 [2C]	0.00099	0.00005	mg/L	0.001000		99	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19K0746

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CK92702 - 3510C										
Surrogate: Decachlorobiphenyl	*0.0000510*		mg/L	*0.00005000*		*102*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0000516*		mg/L	*0.00005000*		*103*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0000474*		mg/L	*0.00005000*		*95*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0000486*		mg/L	*0.00005000*		*97*	*30-150*			
LCS Dup										
Aroclor 1016	0.00082	0.00005	mg/L	0.001000		82	40-140	23	20	D+
Aroclor 1016 [2C]	0.00077	0.00005	mg/L	0.001000		77	40-140	20	20	
Aroclor 1260	0.00086	0.00005	mg/L	0.001000		86	40-140	14	20	
Aroclor 1260 [2C]	0.00087	0.00005	mg/L	0.001000		87	40-140	12	20	
Surrogate: Decachlorobiphenyl	*0.0000455*		mg/L	*0.00005000*		*91*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0000466*		mg/L	*0.00005000*		*93*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0000317*		mg/L	*0.00005000*		*63*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0000320*		mg/L	*0.00005000*		*64*	*30-150*			
8100M Total Petroleum Hydrocarbons										
Batch CK92501 - 3510C										
Blank										
Decane (C10)	ND	0.005	mg/L							
Docosane (C22)	ND	0.005	mg/L							
Dodecane (C12)	ND	0.005	mg/L							
Eicosane (C20)	ND	0.005	mg/L							
Hexacosane (C26)	ND	0.005	mg/L							
Hexadecane (C16)	ND	0.005	mg/L							
Nonadecane (C19)	ND	0.005	mg/L							
Nonane (C9)	ND	0.005	mg/L							
Octacosane (C28)	ND	0.005	mg/L							
Octadecane (C18)	ND	0.005	mg/L							
Tetracosane (C24)	ND	0.005	mg/L							
Tetradecane (C14)	ND	0.005	mg/L							
Total Petroleum Hydrocarbons	ND	0.20	mg/L							
Triacontane (C30)	ND	0.005	mg/L							
Surrogate: O-Terphenyl	*0.0848*		mg/L	*0.1000*		*85*	*40-140*			
LCS										
Decane (C10)	0.031	0.005	mg/L	0.05000		62	40-140			
Docosane (C22)	0.040	0.005	mg/L	0.05000		80	40-140			
Dodecane (C12)	0.035	0.005	mg/L	0.05000		70	40-140			
Eicosane (C20)	0.040	0.005	mg/L	0.05000		79	40-140			
Hexacosane (C26)	0.038	0.005	mg/L	0.05000		76	40-140			
Hexadecane (C16)	0.039	0.005	mg/L	0.05000		77	40-140			
Nonadecane (C19)	0.043	0.005	mg/L	0.05000		86	40-140			
Nonane (C9)	0.026	0.005	mg/L	0.05000		53	30-140			
Octacosane (C28)	0.037	0.005	mg/L	0.05000		74	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19K0746

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CK92501 - 3510C										
Octadecane (C18)	0.039	0.005	mg/L	0.05000		78	40-140			
Tetracosane (C24)	0.039	0.005	mg/L	0.05000		78	40-140			
Tetradecane (C14)	0.038	0.005	mg/L	0.05000		76	40-140			
Total Petroleum Hydrocarbons	0.515	0.20	mg/L	0.7000		74	40-140			
Triacontane (C30)	0.035	0.005	mg/L	0.05000		70	40-140			
Surrogate: O-Terphenyl	*0.0825*		mg/L	*0.1000*		*83*	*40-140*			
LCS										
Decane (C10)	0.005	0.005	mg/L	0.01000		52	40-140			
Docosane (C22)	0.009	0.005	mg/L	0.01000		87	40-140			
Dodecane (C12)	0.006	0.005	mg/L	0.01000		61	40-140			
Eicosane (C20)	0.008	0.005	mg/L	0.01000		84	40-140			
Hexacosane (C26)	0.008	0.005	mg/L	0.01000		79	40-140			
Hexadecane (C16)	0.008	0.005	mg/L	0.01000		79	40-140			
Nonadecane (C19)	0.008	0.005	mg/L	0.01000		81	40-140			
Nonane (C9)	0.005	0.005	mg/L	0.01000		46	30-140			
Octacosane (C28)	0.008	0.005	mg/L	0.01000		76	40-140			
Octadecane (C18)	0.009	0.005	mg/L	0.01000		87	40-140			
Tetracosane (C24)	0.008	0.005	mg/L	0.01000		84	40-140			
Tetradecane (C14)	0.008	0.005	mg/L	0.01000		78	40-140			
Total Petroleum Hydrocarbons	0.104	0.20	mg/L	0.1400		74	40-140			
Triacontane (C30)	0.007	0.005	mg/L	0.01000		71	40-140			
Surrogate: O-Terphenyl	*0.0835*		mg/L	*0.1000*		*83*	*40-140*			
LCS Dup										
Decane (C10)	0.030	0.005	mg/L	0.05000		60	40-140	3	25	
Docosane (C22)	0.042	0.005	mg/L	0.05000		84	40-140	4	25	
Dodecane (C12)	0.036	0.005	mg/L	0.05000		72	40-140	2	25	
Eicosane (C20)	0.041	0.005	mg/L	0.05000		83	40-140	4	25	
Hexacosane (C26)	0.040	0.005	mg/L	0.05000		80	40-140	6	25	
Hexadecane (C16)	0.039	0.005	mg/L	0.05000		78	40-140	1	25	
Nonadecane (C19)	0.044	0.005	mg/L	0.05000		89	40-140	3	25	
Nonane (C9)	0.026	0.005	mg/L	0.05000		51	30-140	2	25	
Octacosane (C28)	0.039	0.005	mg/L	0.05000		78	40-140	5	25	
Octadecane (C18)	0.041	0.005	mg/L	0.05000		81	40-140	4	25	
Tetracosane (C24)	0.041	0.005	mg/L	0.05000		83	40-140	5	25	
Tetradecane (C14)	0.039	0.005	mg/L	0.05000		78	40-140	3	25	
Total Petroleum Hydrocarbons	0.532	0.20	mg/L	0.7000		76	40-140	3	25	
Triacontane (C30)	0.037	0.005	mg/L	0.05000		74	40-140	5	25	
Surrogate: O-Terphenyl	*0.0828*		mg/L	*0.1000*		*83*	*40-140*			
8260B Volatile Organic Compounds										
Batch CK92632 - 5030B										
Blank										

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19K0746

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CK92632 - 5030B										
1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0100	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0100	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0006	mg/L							
Bromoform	ND	0.0010	mg/L							
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0004	mg/L							
Dibromochloromethane	ND	0.0010	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19K0746

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CK92632 - 5030B										
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0020	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	*0.0271*		mg/L	*0.02500*		*108*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0214*		mg/L	*0.02500*		*86*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0255*		mg/L	*0.02500*		*102*	*70-130*			
Surrogate: Toluene-d8	*0.0257*		mg/L	*0.02500*		*103*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	10.3		ug/L	10.00		103	70-130			
1,1,1-Trichloroethane	10.4		ug/L	10.00		104	70-130			
1,1,2,2-Tetrachloroethane	10.9		ug/L	10.00		109	70-130			
1,1,2-Trichloroethane	9.60		ug/L	10.00		96	70-130			
1,1-Dichloroethane	10.4		ug/L	10.00		104	70-130			
1,1-Dichloroethene	10.3		ug/L	10.00		103	70-130			
1,1-Dichloropropene	10.2		ug/L	10.00		102	70-130			
1,2,3-Trichlorobenzene	9.12		ug/L	10.00		91	70-130			
1,2,3-Trichloropropane	9.65		ug/L	10.00		96	70-130			
1,2,4-Trichlorobenzene	8.58		ug/L	10.00		86	70-130			
1,2,4-Trimethylbenzene	10.6		ug/L	10.00		106	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19K0746

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CK92632 - 5030B										
1,2-Dibromo-3-Chloropropane	9.40		ug/L	10.00		94	70-130			
1,2-Dibromoethane	9.69		ug/L	10.00		97	70-130			
1,2-Dichlorobenzene	9.71		ug/L	10.00		97	70-130			
1,2-Dichloroethane	9.99		ug/L	10.00		100	70-130			
1,2-Dichloropropane	9.38		ug/L	10.00		94	70-130			
1,3,5-Trimethylbenzene	10.5		ug/L	10.00		105	70-130			
1,3-Dichlorobenzene	10.1		ug/L	10.00		101	70-130			
1,3-Dichloropropane	9.94		ug/L	10.00		99	70-130			
1,4-Dichlorobenzene	10.0		ug/L	10.00		100	70-130			
1,4-Dioxane - Screen	194		ug/L	200.0		97	0-332			
1-Chlorohexane	8.99		ug/L	10.00		90	70-130			
2,2-Dichloropropane	10.9		ug/L	10.00		109	70-130			
2-Butanone	51.1		ug/L	50.00		102	70-130			
2-Chlorotoluene	10.3		ug/L	10.00		103	70-130			
2-Hexanone	47.9		ug/L	50.00		96	70-130			
4-Chlorotoluene	10.3		ug/L	10.00		103	70-130			
4-Isopropyltoluene	10.0		ug/L	10.00		100	70-130			
4-Methyl-2-Pentanone	52.0		ug/L	50.00		104	70-130			
Acetone	48.2		ug/L	50.00		96	70-130			
Benzene	9.90		ug/L	10.00		99	70-130			
Bromobenzene	9.98		ug/L	10.00		100	70-130			
Bromochloromethane	10.0		ug/L	10.00		100	70-130			
Bromodichloromethane	9.65		ug/L	10.00		96	70-130			
Bromoform	9.68		ug/L	10.00		97	70-130			
Bromomethane	12.3		ug/L	10.00		123	70-130			
Carbon Disulfide	9.94		ug/L	10.00		99	70-130			
Carbon Tetrachloride	10.6		ug/L	10.00		106	70-130			
Chlorobenzene	9.54		ug/L	10.00		95	70-130			
Chloroethane	9.44		ug/L	10.00		94	70-130			
Chloroform	10.3		ug/L	10.00		103	70-130			
Chloromethane	10.2		ug/L	10.00		102	70-130			
cis-1,2-Dichloroethene	10.2		ug/L	10.00		102	70-130			
cis-1,3-Dichloropropene	9.99		ug/L	10.00		100	70-130			
Dibromochloromethane	10.3		ug/L	10.00		103	70-130			
Dibromomethane	10.1		ug/L	10.00		101	70-130			
Dichlorodifluoromethane	9.06		ug/L	10.00		91	70-130			
Diethyl Ether	10.0		ug/L	10.00		100	70-130			
Di-isopropyl ether	10.3		ug/L	10.00		103	70-130			
Ethyl tertiary-butyl ether	9.76		ug/L	10.00		98	70-130			
Ethylbenzene	9.77		ug/L	10.00		98	70-130			
Hexachlorobutadiene	10.3		ug/L	10.00		103	70-130			
Hexachloroethane	9.40		ug/L	10.00		94	70-130			
Isopropylbenzene	10.2		ug/L	10.00		102	70-130			
Methyl tert-Butyl Ether	10.1		ug/L	10.00		101	70-130			
Methylene Chloride	10.3		ug/L	10.00		103	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19K0746

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CK92632 - 5030B										
Naphthalene	9.12		ug/L	10.00		91	70-130			
n-Butylbenzene	10.3		ug/L	10.00		103	70-130			
n-Propylbenzene	10.1		ug/L	10.00		101	70-130			
sec-Butylbenzene	10.2		ug/L	10.00		102	70-130			
Styrene	8.41		ug/L	10.00		84	70-130			
tert-Butylbenzene	10.2		ug/L	10.00		102	70-130			
Tertiary-amyl methyl ether	9.88		ug/L	10.00		99	70-130			
Tetrachloroethene	8.12		ug/L	10.00		81	70-130			
Tetrahydrofuran	8.81		ug/L	10.00		88	70-130			
Toluene	9.70		ug/L	10.00		97	70-130			
trans-1,2-Dichloroethene	9.73		ug/L	10.00		97	70-130			
trans-1,3-Dichloropropene	9.62		ug/L	10.00		96	70-130			
Trichloroethene	9.44		ug/L	10.00		94	70-130			
Trichlorofluoromethane	10.6		ug/L	10.00		106	70-130			
Vinyl Acetate	9.91		ug/L	10.00		99	70-130			
Vinyl Chloride	9.34		ug/L	10.00		93	70-130			
Xylene O	10.4		ug/L	10.00		104	70-130			
Xylene P,M	20.7		ug/L	20.00		103	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0249*		mg/L	*0.02500*		*99*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0248*		mg/L	*0.02500*		*99*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0254*		mg/L	*0.02500*		*101*	*70-130*			
Surrogate: Toluene-d8	*0.0240*		mg/L	*0.02500*		*96*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	10.2		ug/L	10.00		102	70-130	1	25	
1,1,1-Trichloroethane	9.88		ug/L	10.00		99	70-130	6	25	
1,1,2,2-Tetrachloroethane	10.6		ug/L	10.00		106	70-130	3	25	
1,1,2-Trichloroethane	8.99		ug/L	10.00		90	70-130	7	25	
1,1-Dichloroethane	10.1		ug/L	10.00		101	70-130	3	25	
1,1-Dichloroethene	10.2		ug/L	10.00		102	70-130	1	25	
1,1-Dichloropropene	9.94		ug/L	10.00		99	70-130	3	25	
1,2,3-Trichlorobenzene	8.69		ug/L	10.00		87	70-130	5	25	
1,2,3-Trichloropropane	9.49		ug/L	10.00		95	70-130	2	25	
1,2,4-Trichlorobenzene	8.34		ug/L	10.00		83	70-130	3	25	
1,2,4-Trimethylbenzene	10.7		ug/L	10.00		107	70-130	0.4	25	
1,2-Dibromo-3-Chloropropane	8.91		ug/L	10.00		89	70-130	5	25	
1,2-Dibromoethane	9.59		ug/L	10.00		96	70-130	1	25	
1,2-Dichlorobenzene	9.63		ug/L	10.00		96	70-130	0.8	25	
1,2-Dichloroethane	9.55		ug/L	10.00		96	70-130	5	25	
1,2-Dichloropropane	9.11		ug/L	10.00		91	70-130	3	25	
1,3,5-Trimethylbenzene	10.6		ug/L	10.00		106	70-130	0.3	25	
1,3-Dichlorobenzene	9.89		ug/L	10.00		99	70-130	2	25	
1,3-Dichloropropane	9.83		ug/L	10.00		98	70-130	1	25	
1,4-Dichlorobenzene	10.1		ug/L	10.00		101	70-130	0.5	25	
1,4-Dioxane - Screen	180		ug/L	200.0		90	0-332	7	200	
1-Chlorohexane	8.88		ug/L	10.00		89	70-130	1	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19K0746

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CK92632 - 5030B										
2,2-Dichloropropane	10.6		ug/L	10.00		106	70-130	3	25	
2-Butanone	48.2		ug/L	50.00		96	70-130	6	25	
2-Chlorotoluene	10.3		ug/L	10.00		103	70-130	0.2	25	
2-Hexanone	46.8		ug/L	50.00		94	70-130	2	25	
4-Chlorotoluene	10.2		ug/L	10.00		102	70-130	0.9	25	
4-Isopropyltoluene	9.84		ug/L	10.00		98	70-130	2	25	
4-Methyl-2-Pentanone	49.7		ug/L	50.00		99	70-130	5	25	
Acetone	44.0		ug/L	50.00		88	70-130	9	25	
Benzene	9.55		ug/L	10.00		96	70-130	4	25	
Bromobenzene	9.98		ug/L	10.00		100	70-130	0	25	
Bromochloromethane	9.78		ug/L	10.00		98	70-130	2	25	
Bromodichloromethane	9.34		ug/L	10.00		93	70-130	3	25	
Bromoform	9.27		ug/L	10.00		93	70-130	4	25	
Bromomethane	11.4		ug/L	10.00		114	70-130	8	25	
Carbon Disulfide	9.76		ug/L	10.00		98	70-130	2	25	
Carbon Tetrachloride	10.3		ug/L	10.00		103	70-130	3	25	
Chlorobenzene	9.42		ug/L	10.00		94	70-130	1	25	
Chloroethane	8.99		ug/L	10.00		90	70-130	5	25	
Chloroform	9.97		ug/L	10.00		100	70-130	3	25	
Chloromethane	9.43		ug/L	10.00		94	70-130	7	25	
cis-1,2-Dichloroethene	9.95		ug/L	10.00		100	70-130	2	25	
cis-1,3-Dichloropropene	9.75		ug/L	10.00		98	70-130	2	25	
Dibromochloromethane	9.84		ug/L	10.00		98	70-130	5	25	
Dibromomethane	9.84		ug/L	10.00		98	70-130	3	25	
Dichlorodifluoromethane	8.66		ug/L	10.00		87	70-130	5	25	
Diethyl Ether	9.83		ug/L	10.00		98	70-130	2	25	
Di-isopropyl ether	10.1		ug/L	10.00		101	70-130	2	25	
Ethyl tertiary-butyl ether	9.62		ug/L	10.00		96	70-130	1	25	
Ethylbenzene	9.81		ug/L	10.00		98	70-130	0.4	25	
Hexachlorobutadiene	9.91		ug/L	10.00		99	70-130	3	25	
Hexachloroethane	9.29		ug/L	10.00		93	70-130	1	25	
Isopropylbenzene	10.1		ug/L	10.00		101	70-130	0.8	25	
Methyl tert-Butyl Ether	9.83		ug/L	10.00		98	70-130	3	25	
Methylene Chloride	10.6		ug/L	10.00		106	70-130	2	25	
Naphthalene	8.55		ug/L	10.00		86	70-130	6	25	
n-Butylbenzene	10.1		ug/L	10.00		101	70-130	3	25	
n-Propylbenzene	10.1		ug/L	10.00		101	70-130	0.3	25	
sec-Butylbenzene	10.2		ug/L	10.00		102	70-130	0.2	25	
Styrene	8.24		ug/L	10.00		82	70-130	2	25	
tert-Butylbenzene	10.2		ug/L	10.00		102	70-130	0.1	25	
Tertiary-amyl methyl ether	9.68		ug/L	10.00		97	70-130	2	25	
Tetrachloroethene	7.92		ug/L	10.00		79	70-130	2	25	
Tetrahydrofuran	8.78		ug/L	10.00		88	70-130	0.3	25	
Toluene	9.56		ug/L	10.00		96	70-130	1	25	
trans-1,2-Dichloroethene	9.77		ug/L	10.00		98	70-130	0.4	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19K0746

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CK92632 - 5030B										
trans-1,3-Dichloropropene	9.40		ug/L	10.00		94	70-130	2	25	
Trichloroethene	9.43		ug/L	10.00		94	70-130	0.1	25	
Trichlorofluoromethane	10.4		ug/L	10.00		104	70-130	3	25	
Vinyl Acetate	9.64		ug/L	10.00		96	70-130	3	25	
Vinyl Chloride	8.72		ug/L	10.00		87	70-130	7	25	
Xylene O	10.3		ug/L	10.00		103	70-130	2	25	
Xylene P,M	20.5		ug/L	20.00		103	70-130	0.6	25	
Surrogate: 1,2-Dichloroethane-d4	*0.0244*		mg/L	*0.02500*		*98*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0245*		mg/L	*0.02500*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0248*		mg/L	*0.02500*		*99*	*70-130*			
Surrogate: Toluene-d8	*0.0242*		mg/L	*0.02500*		*97*	*70-130*			
8270D Semi-Volatile Organic Compounds										
Batch CK92556 - 3520C										
Blank										
1,1-Biphenyl	ND	0.010	mg/L							
1,2,4-Trichlorobenzene	ND	0.010	mg/L							
1,2-Dichlorobenzene	ND	0.010	mg/L							
1,3-Dichlorobenzene	ND	0.010	mg/L							
1,4-Dichlorobenzene	ND	0.010	mg/L							
2,3,4,6-Tetrachlorophenol	ND	0.050	mg/L							
2,4,5-Trichlorophenol	ND	0.010	mg/L							
2,4,6-Trichlorophenol	ND	0.010	mg/L							
2,4-Dichlorophenol	ND	0.010	mg/L							
2,4-Dimethylphenol	ND	0.050	mg/L							
2,4-Dinitrophenol	ND	0.050	mg/L							
2,4-Dinitrotoluene	ND	0.010	mg/L							
2,6-Dinitrotoluene	ND	0.010	mg/L							
2-Chloronaphthalene	ND	0.010	mg/L							
2-Chlorophenol	ND	0.010	mg/L							
2-Methylphenol	ND	0.010	mg/L							
2-Nitroaniline	ND	0.010	mg/L							
2-Nitrophenol	ND	0.010	mg/L							
3,3´-Dichlorobenzidine	ND	0.020	mg/L							
3+4-Methylphenol	ND	0.020	mg/L							
3-Nitroaniline	ND	0.010	mg/L							
4,6-Dinitro-2-Methylphenol	ND	0.050	mg/L							
4-Bromophenyl-phenylether	ND	0.010	mg/L							
4-Chloro-3-Methylphenol	ND	0.010	mg/L							
4-Chloroaniline	ND	0.020	mg/L							
4-Chloro-phenyl-phenyl ether	ND	0.010	mg/L							
4-Nitroaniline	ND	0.010	mg/L							
4-Nitrophenol	ND	0.050	mg/L							
Acetophenone	ND	0.010	mg/L							
Aniline	ND	0.010	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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ESS Laboratory Work Order: 19K0746

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CK92556 - 3520C										
Azobenzene	ND	0.020	mg/L							
Benzoic Acid	ND	0.100	mg/L							
Benzyl Alcohol	ND	0.010	mg/L							
bis(2-Chloroethoxy)methane	ND	0.010	mg/L							
bis(2-Chloroethyl)ether	ND	0.010	mg/L							
bis(2-chloroisopropyl)Ether	ND	0.010	mg/L							
bis(2-Ethylhexyl)phthalate	ND	0.006	mg/L							
Butylbenzylphthalate	ND	0.010	mg/L							
Carbazole	ND	0.010	mg/L							
Dibenzofuran	ND	0.010	mg/L							
Diethylphthalate	ND	0.010	mg/L							
Dimethylphthalate	ND	0.010	mg/L							
Di-n-butylphthalate	ND	0.010	mg/L							
Di-n-octylphthalate	ND	0.010	mg/L							
Hexachlorobutadiene	ND	0.010	mg/L							
Hexachlorocyclopentadiene	ND	0.025	mg/L							
Hexachloroethane	ND	0.005	mg/L							
Isophorone	ND	0.010	mg/L							
Nitrobenzene	ND	0.010	mg/L							
N-Nitrosodimethylamine	ND	0.010	mg/L							
N-Nitroso-Di-n-Propylamine	ND	0.010	mg/L							
N-nitrosodiphenylamine	ND	0.010	mg/L							
Phenol	ND	0.010	mg/L							
Pyridine	ND	0.100	mg/L							
Surrogate: 1,2-Dichlorobenzene-d4	*0.0680*		mg/L	*0.1000*		*68*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.124*		mg/L	*0.1500*		*83*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.112*		mg/L	*0.1500*		*75*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0695*		mg/L	*0.1000*		*69*	*30-130*			
Surrogate: 2-Fluorophenol	*0.0916*		mg/L	*0.1500*		*61*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0794*		mg/L	*0.1000*		*79*	*30-130*			
Surrogate: Phenol-d6	*0.0917*		mg/L	*0.1500*		*61*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.0732*		mg/L	*0.1000*		*73*	*30-130*			
LCS										
1,1-Biphenyl	0.065	0.010	mg/L	0.1000		65	40-140			
1,2,4-Trichlorobenzene	0.061	0.010	mg/L	0.1000		61	40-140			
1,2-Dichlorobenzene	0.046	0.010	mg/L	0.1000		46	40-140			
1,3-Dichlorobenzene	0.042	0.010	mg/L	0.1000		42	40-140			
1,4-Dichlorobenzene	0.042	0.010	mg/L	0.1000		42	40-140			
2,3,4,6-Tetrachlorophenol	0.091	0.050	mg/L	0.1000		91	40-140			
2,4,5-Trichlorophenol	0.098	0.010	mg/L	0.1000		97	30-130			
2,4,6-Trichlorophenol	0.092	0.010	mg/L	0.1000		92	30-130			
2,4-Dichlorophenol	0.083	0.010	mg/L	0.1000		83	30-130			
2,4-Dimethylphenol	0.075	0.050	mg/L	0.1000		75	30-130			
2,4-Dinitrophenol	0.117	0.050	mg/L	0.1000		117	30-130			
2,4-Dinitrotoluene	0.094	0.010	mg/L	0.1000		94	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19K0746

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CK92556 - 3520C										
2,6-Dinitrotoluene	0.091	0.010	mg/L	0.1000		91	40-140			
2-Chloronaphthalene	0.066	0.010	mg/L	0.1000		66	40-140			
2-Chlorophenol	0.072	0.010	mg/L	0.1000		72	30-130			
2-Methylphenol	0.075	0.010	mg/L	0.1000		75	30-130			
2-Nitroaniline	0.091	0.010	mg/L	0.1000		91	40-140			
2-Nitrophenol	0.079	0.010	mg/L	0.1000		79	30-130			
3,3´-Dichlorobenzidine	0.080	0.020	mg/L	0.1000		80	40-140			
3+4-Methylphenol	0.118	0.020	mg/L	0.2000		59	30-130			
3-Nitroaniline	0.088	0.010	mg/L	0.1000		88	40-140			
4,6-Dinitro-2-Methylphenol	0.102	0.050	mg/L	0.1000		102	30-130			
4-Bromophenyl-phenylether	0.080	0.010	mg/L	0.1000		80	40-140			
4-Chloro-3-Methylphenol	0.090	0.010	mg/L	0.1000		90	30-130			
4-Chloroaniline	0.057	0.020	mg/L	0.1000		57	40-140			
4-Chloro-phenyl-phenyl ether	0.075	0.010	mg/L	0.1000		75	40-140			
4-Nitroaniline	0.078	0.010	mg/L	0.1000		78	40-140			
4-Nitrophenol	0.086	0.050	mg/L	0.1000		86	30-130			
Acetophenone	0.060	0.010	mg/L	0.1000		60	40-140			
Aniline	0.040	0.010	mg/L	0.1000		40	40-140			
Azobenzene	0.073	0.020	mg/L	0.1000		73	40-140			
Benzoic Acid	0.083	0.100	mg/L	0.1000		83	40-140			
Benzyl Alcohol	0.079	0.010	mg/L	0.1000		79	40-140			
bis(2-Chloroethoxy)methane	0.066	0.010	mg/L	0.1000		66	40-140			
bis(2-Chloroethyl)ether	0.067	0.010	mg/L	0.1000		67	40-140			
bis(2-chloroisopropyl)Ether	0.066	0.010	mg/L	0.1000		66	40-140			
bis(2-Ethylhexyl)phthalate	0.078	0.006	mg/L	0.1000		78	40-140			
Butylbenzylphthalate	0.076	0.010	mg/L	0.1000		76	40-140			
Carbazole	0.081	0.010	mg/L	0.1000		81	40-140			
Dibenzofuran	0.077	0.010	mg/L	0.1000		77	40-140			
Diethylphthalate	0.087	0.010	mg/L	0.1000		87	40-140			
Dimethylphthalate	0.084	0.010	mg/L	0.1000		84	40-140			
Di-n-butylphthalate	0.094	0.010	mg/L	0.1000		94	40-140			
Di-n-octylphthalate	0.075	0.010	mg/L	0.1000		75	40-140			
Hexachlorobutadiene	0.058	0.010	mg/L	0.1000		58	40-140			
Hexachlorocyclopentadiene	0.065	0.025	mg/L	0.1000		65	40-140			
Hexachloroethane	0.038	0.005	mg/L	0.1000		38	40-140			B-
Isophorone	0.067	0.010	mg/L	0.1000		67	40-140			
Nitrobenzene	0.070	0.010	mg/L	0.1000		70	40-140			
N-Nitrosodimethylamine	0.066	0.010	mg/L	0.1000		66	40-140			
N-Nitroso-Di-n-Propylamine	0.068	0.010	mg/L	0.1000		68	40-140			
N-nitrosodiphenylamine	0.075	0.010	mg/L	0.1000		75	40-140			
Phenol	0.068	0.010	mg/L	0.1000		68	30-130			
Pyridine	0.050	0.100	mg/L	0.1000		50	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*0.0668*		mg/L	*0.1000*		*67*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.145*		mg/L	*0.1500*		*97*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.113*		mg/L	*0.1500*		*75*	*15-110*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19K0746

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CK92556 - 3520C										
Surrogate: 2-Fluorobiphenyl	*0.0732*		mg/L	*0.1000*		*73*	*30-130*			
Surrogate: 2-Fluorophenol	*0.104*		mg/L	*0.1500*		*69*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0757*		mg/L	*0.1000*		*76*	*30-130*			
Surrogate: Phenol-d6	*0.104*		mg/L	*0.1500*		*69*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.0834*		mg/L	*0.1000*		*83*	*30-130*			
LCS Dup										
1,1-Biphenyl	0.068	0.010	mg/L	0.1000		68	40-140	5	20	
1,2,4-Trichlorobenzene	0.058	0.010	mg/L	0.1000		58	40-140	4	20	
1,2-Dichlorobenzene	0.046	0.010	mg/L	0.1000		46	40-140	0.6	20	
1,3-Dichlorobenzene	0.042	0.010	mg/L	0.1000		42	40-140	1	20	
1,4-Dichlorobenzene	0.043	0.010	mg/L	0.1000		43	40-140	0.4	20	
2,3,4,6-Tetrachlorophenol	0.095	0.050	mg/L	0.1000		95	40-140	4	20	
2,4,5-Trichlorophenol	0.098	0.010	mg/L	0.1000		98	30-130	0.6	20	
2,4,6-Trichlorophenol	0.095	0.010	mg/L	0.1000		95	30-130	3	20	
2,4-Dichlorophenol	0.085	0.010	mg/L	0.1000		85	30-130	2	20	
2,4-Dimethylphenol	0.079	0.050	mg/L	0.1000		79	30-130	5	20	
2,4-Dinitrophenol	0.117	0.050	mg/L	0.1000		117	30-130	0.03	20	
2,4-Dinitrotoluene	0.096	0.010	mg/L	0.1000		96	40-140	2	20	
2,6-Dinitrotoluene	0.094	0.010	mg/L	0.1000		94	40-140	3	20	
2-Chloronaphthalene	0.070	0.010	mg/L	0.1000		70	40-140	7	20	
2-Chlorophenol	0.073	0.010	mg/L	0.1000		73	30-130	1	20	
2-Methylphenol	0.075	0.010	mg/L	0.1000		75	30-130	0.2	20	
2-Nitroaniline	0.093	0.010	mg/L	0.1000		93	40-140	2	20	
2-Nitrophenol	0.084	0.010	mg/L	0.1000		84	30-130	6	20	
3,3´-Dichlorobenzidine	0.079	0.020	mg/L	0.1000		79	40-140	2	20	
3+4-Methylphenol	0.116	0.020	mg/L	0.2000		58	30-130	2	20	
3-Nitroaniline	0.086	0.010	mg/L	0.1000		86	40-140	2	20	
4,6-Dinitro-2-Methylphenol	0.106	0.050	mg/L	0.1000		106	30-130	3	20	
4-Bromophenyl-phenylether	0.083	0.010	mg/L	0.1000		83	40-140	3	20	
4-Chloro-3-Methylphenol	0.090	0.010	mg/L	0.1000		90	30-130	0.1	20	
4-Chloroaniline	0.058	0.020	mg/L	0.1000		58	40-140	2	20	
4-Chloro-phenyl-phenyl ether	0.078	0.010	mg/L	0.1000		78	40-140	5	20	
4-Nitroaniline	0.078	0.010	mg/L	0.1000		78	40-140	0.4	20	
4-Nitrophenol	0.084	0.050	mg/L	0.1000		84	30-130	1	20	
Acetophenone	0.066	0.010	mg/L	0.1000		66	40-140	9	20	
Aniline	0.043	0.010	mg/L	0.1000		43	40-140	9	20	
Azobenzene	0.075	0.020	mg/L	0.1000		75	40-140	4	20	
Benzoic Acid	0.082	0.100	mg/L	0.1000		82	40-140	0.9	20	
Benzyl Alcohol	0.086	0.010	mg/L	0.1000		86	40-140	9	20	
bis(2-Chloroethoxy)methane	0.072	0.010	mg/L	0.1000		72	40-140	10	20	
bis(2-Chloroethyl)ether	0.072	0.010	mg/L	0.1000		72	40-140	6	20	
bis(2-chloroisopropyl)Ether	0.072	0.010	mg/L	0.1000		72	40-140	9	20	
bis(2-Ethylhexyl)phthalate	0.083	0.006	mg/L	0.1000		83	40-140	6	20	
Butylbenzylphthalate	0.080	0.010	mg/L	0.1000		80	40-140	5	20	
Carbazole	0.083	0.010	mg/L	0.1000		83	40-140	2	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19K0746

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CK92556 - 3520C										
Dibenzofuran	0.080	0.010	mg/L	0.1000		80	40-140	4	20	
Diethylphthalate	0.090	0.010	mg/L	0.1000		90	40-140	3	20	
Dimethylphthalate	0.088	0.010	mg/L	0.1000		88	40-140	4	20	
Di-n-butylphthalate	0.096	0.010	mg/L	0.1000		96	40-140	2	20	
Di-n-octylphthalate	0.080	0.010	mg/L	0.1000		80	40-140	7	20	
Hexachlorobutadiene	0.050	0.010	mg/L	0.1000		50	40-140	16	20	
Hexachlorocyclopentadiene	0.066	0.025	mg/L	0.1000		66	40-140	0.7	20	
Hexachloroethane	0.034	0.005	mg/L	0.1000		34	40-140	13	20	B-
Isophorone	0.072	0.010	mg/L	0.1000		72	40-140	7	20	
Nitrobenzene	0.076	0.010	mg/L	0.1000		76	40-140	9	20	
N-Nitrosodimethylamine	0.074	0.010	mg/L	0.1000		74	40-140	11	20	
N-Nitroso-Di-n-Propylamine	0.073	0.010	mg/L	0.1000		73	40-140	8	20	
N-nitrosodiphenylamine	0.076	0.010	mg/L	0.1000		76	40-140	0.9	20	
Phenol	0.068	0.010	mg/L	0.1000		68	30-130	0.3	20	
Pyridine	0.064	0.100	mg/L	0.1000		64	40-140	25	20	D+
Surrogate: 1,2-Dichlorobenzene-d4	*0.0745*		mg/L	*0.1000*		*75*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.149*		mg/L	*0.1500*		*99*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.114*		mg/L	*0.1500*		*76*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0777*		mg/L	*0.1000*		*78*	*30-130*			
Surrogate: 2-Fluorophenol	*0.0929*		mg/L	*0.1500*		*62*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0837*		mg/L	*0.1000*		*84*	*30-130*			
Surrogate: Phenol-d6	*0.105*		mg/L	*0.1500*		*70*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.0872*		mg/L	*0.1000*		*87*	*30-130*			
8270D(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CK92703 - 3510C										
Blank										
2-Methylnaphthalene	ND	0.0002	mg/L							
Acenaphthene	ND	0.0002	mg/L							
Acenaphthylene	ND	0.0002	mg/L							
Anthracene	ND	0.0002	mg/L							
Benzo(a)anthracene	ND	0.00005	mg/L							
Benzo(a)pyrene	ND	0.00005	mg/L							
Benzo(b)fluoranthene	ND	0.00005	mg/L							
Benzo(g,h,i)perylene	ND	0.0002	mg/L							
Benzo(k)fluoranthene	ND	0.00005	mg/L							
Chrysene	ND	0.00005	mg/L							
Dibenzo(a,h)Anthracene	ND	0.00005	mg/L							
Fluoranthene	ND	0.0002	mg/L							
Fluorene	ND	0.0002	mg/L							
Indeno(1,2,3-cd)Pyrene	ND	0.00005	mg/L							
Naphthalene	ND	0.0002	mg/L							
Phenanthrene	ND	0.0002	mg/L							
Pyrene	ND	0.0002	mg/L							
Surrogate: 1,2-Dichlorobenzene-d4	*0.000951*		mg/L	*0.002500*		*38*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19K0746

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CK92703 - 3510C										
Surrogate: 2-Fluorobiphenyl	*0.00120*		mg/L	*0.002500*		*48*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.00174*		mg/L	*0.002500*		*70*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.00219*		mg/L	*0.002500*		*88*	*30-130*			
LCS										
2-Methylnaphthalene	0.0024	0.0002	mg/L	0.004000		59	40-140			
Acenaphthene	0.0028	0.0002	mg/L	0.004000		71	40-140			
Acenaphthylene	0.0028	0.0002	mg/L	0.004000		69	40-140			
Anthracene	0.0033	0.0002	mg/L	0.004000		83	40-140			
Benzo(a)anthracene	0.0032	0.00005	mg/L	0.004000		80	40-140			
Benzo(a)pyrene	0.0032	0.00005	mg/L	0.004000		81	40-140			
Benzo(b)fluoranthene	0.0036	0.00005	mg/L	0.004000		90	40-140			
Benzo(g,h,i)perylene	0.0032	0.0002	mg/L	0.004000		80	40-140			
Benzo(k)fluoranthene	0.0033	0.00005	mg/L	0.004000		83	40-140			
Chrysene	0.0033	0.00005	mg/L	0.004000		83	40-140			
Dibenzo(a,h)Anthracene	0.0032	0.00005	mg/L	0.004000		81	40-140			
Fluoranthene	0.0033	0.0002	mg/L	0.004000		82	40-140			
Fluorene	0.0030	0.0002	mg/L	0.004000		76	40-140			
Indeno(1,2,3-cd)Pyrene	0.0031	0.00005	mg/L	0.004000		78	40-140			
Naphthalene	0.0021	0.0002	mg/L	0.004000		53	40-140			
Phenanthrene	0.0033	0.0002	mg/L	0.004000		82	40-140			
Pyrene	0.0036	0.0002	mg/L	0.004000		90	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*0.00126*		mg/L	*0.002500*		*50*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*0.00172*		mg/L	*0.002500*		*69*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.00180*		mg/L	*0.002500*		*72*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.00241*		mg/L	*0.002500*		*97*	*30-130*			
LCS Dup										
2-Methylnaphthalene	0.0025	0.0002	mg/L	0.004000		64	40-140	8	20	
Acenaphthene	0.0029	0.0002	mg/L	0.004000		74	40-140	3	20	
Acenaphthylene	0.0028	0.0002	mg/L	0.004000		71	40-140	3	20	
Anthracene	0.0033	0.0002	mg/L	0.004000		82	40-140	1	20	
Benzo(a)anthracene	0.0031	0.00005	mg/L	0.004000		78	40-140	2	20	
Benzo(a)pyrene	0.0032	0.00005	mg/L	0.004000		80	40-140	0.7	20	
Benzo(b)fluoranthene	0.0033	0.00005	mg/L	0.004000		84	40-140	8	20	
Benzo(g,h,i)perylene	0.0031	0.0002	mg/L	0.004000		76	40-140	4	20	
Benzo(k)fluoranthene	0.0035	0.00005	mg/L	0.004000		87	40-140	6	20	
Chrysene	0.0032	0.00005	mg/L	0.004000		80	40-140	4	20	
Dibenzo(a,h)Anthracene	0.0032	0.00005	mg/L	0.004000		80	40-140	0.8	20	
Fluoranthene	0.0033	0.0002	mg/L	0.004000		81	40-140	0.8	20	
Fluorene	0.0030	0.0002	mg/L	0.004000		75	40-140	1	20	
Indeno(1,2,3-cd)Pyrene	0.0031	0.00005	mg/L	0.004000		78	40-140	0.4	20	
Naphthalene	0.0024	0.0002	mg/L	0.004000		59	40-140	10	20	
Phenanthrene	0.0032	0.0002	mg/L	0.004000		79	40-140	3	20	
Pyrene	0.0035	0.0002	mg/L	0.004000		87	40-140	3	20	
Surrogate: 1,2-Dichlorobenzene-d4	*0.00108*		mg/L	*0.002500*		*43*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19K0746

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CK92703 - 3510C										
Surrogate: 2-Fluorobiphenyl	*0.00158*		mg/L	*0.002500*		*63*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.00189*		mg/L	*0.002500*		*75*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.00225*		mg/L	*0.002500*		*90*	*30-130*			
8270D(SIM) Semi-Volatile Organic Compounds										
Batch CK92556 - 3520C										
Blank										
2-Methylnaphthalene	ND	0.00020	mg/L							
Acenaphthene	ND	0.00020	mg/L							
Acenaphthylene	ND	0.00020	mg/L							
Anthracene	ND	0.00020	mg/L							
Benzo(a)anthracene	ND	0.00005	mg/L							
Benzo(a)pyrene	ND	0.00005	mg/L							
Benzo(b)fluoranthene	ND	0.00005	mg/L							
Benzo(g,h,i)perylene	ND	0.00020	mg/L							
Benzo(k)fluoranthene	ND	0.00005	mg/L							
Chrysene	ND	0.00005	mg/L							
Dibenzo(a,h)Anthracene	ND	0.00005	mg/L							
Fluoranthene	ND	0.00020	mg/L							
Fluorene	ND	0.00020	mg/L							
Hexachlorobenzene	ND	0.00020	mg/L							
Indeno(1,2,3-cd)Pyrene	ND	0.00005	mg/L							
Naphthalene	ND	0.00020	mg/L							
Pentachlorophenol	ND	0.00090	mg/L							
Phenanthrene	ND	0.00020	mg/L							
Pyrene	ND	0.00020	mg/L							
Surrogate: 1,2-Dichlorobenzene-d4	*0.0468*		mg/L	*0.1000*		*47*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.0493*		mg/L	*0.1500*		*33*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0485*		mg/L	*0.1000*		*48*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.0768*		mg/L	*0.1000*		*77*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.0357*		mg/L	*0.1000*		*36*	*30-130*			
LCS										
2-Methylnaphthalene	0.0797	0.00400	mg/L	0.1000		80	40-140			
Acenaphthene	0.0937	0.00400	mg/L	0.1000		94	40-140			
Acenaphthylene	0.0900	0.00400	mg/L	0.1000		90	40-140			
Anthracene	0.0938	0.00400	mg/L	0.1000		94	40-140			
Benzo(a)anthracene	0.0887	0.00100	mg/L	0.1000		89	40-140			
Benzo(a)pyrene	0.0892	0.00100	mg/L	0.1000		89	40-140			
Benzo(b)fluoranthene	0.0966	0.00100	mg/L	0.1000		97	40-140			
Benzo(g,h,i)perylene	0.0871	0.00400	mg/L	0.1000		87	40-140			
Benzo(k)fluoranthene	0.0933	0.00100	mg/L	0.1000		93	40-140			
Chrysene	0.0887	0.00100	mg/L	0.1000		89	40-140			
Dibenzo(a,h)Anthracene	0.0893	0.00100	mg/L	0.1000		89	40-140			
Fluoranthene	0.0946	0.00400	mg/L	0.1000		95	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19K0746

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Semi-Volatile Organic Compounds										
Batch CK92556 - 3520C										
Fluorene	0.0924	0.00400	mg/L	0.1000		92	40-140			
Hexachlorobenzene	0.129	0.00400	mg/L	0.1000		129	40-140			
Indeno(1,2,3-cd)Pyrene	0.0915	0.00100	mg/L	0.1000		92	40-140			
Naphthalene	0.0689	0.00400	mg/L	0.1000		69	40-140			
Pentachlorophenol	0.127	0.0180	mg/L	0.1000		127	30-130			
Phenanthrene	0.0929	0.00400	mg/L	0.1000		93	40-140			
Pyrene	0.0982	0.00400	mg/L	0.1000		98	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*0.0769*		mg/L	*0.1000*		*77*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.198*		mg/L	*0.1500*		*132*	*15-110*			*S+*
Surrogate: 2-Fluorobiphenyl	*0.0894*		mg/L	*0.1000*		*89*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.105*		mg/L	*0.1000*		*105*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.0993*		mg/L	*0.1000*		*99*	*30-130*			
LCS Dup										
2-Methylnaphthalene	0.0839	0.00400	mg/L	0.1000		84	40-140	5	20	
Acenaphthene	0.102	0.00400	mg/L	0.1000		102	40-140	9	20	
Acenaphthylene	0.0970	0.00400	mg/L	0.1000		97	40-140	8	20	
Anthracene	0.0968	0.00400	mg/L	0.1000		97	40-140	3	20	
Benzo(a)anthracene	0.0933	0.00100	mg/L	0.1000		93	40-140	5	20	
Benzo(a)pyrene	0.0946	0.00100	mg/L	0.1000		95	40-140	6	20	
Benzo(b)fluoranthene	0.102	0.00100	mg/L	0.1000		102	40-140	6	20	
Benzo(g,h,i)perylene	0.0961	0.00400	mg/L	0.1000		96	40-140	10	20	
Benzo(k)fluoranthene	0.102	0.00100	mg/L	0.1000		102	40-140	8	20	
Chrysene	0.0944	0.00100	mg/L	0.1000		94	40-140	6	20	
Dibenzo(a,h)Anthracene	0.0980	0.00100	mg/L	0.1000		98	40-140	9	20	
Fluoranthene	0.0973	0.00400	mg/L	0.1000		97	40-140	3	20	
Fluorene	0.0973	0.00400	mg/L	0.1000		97	40-140	5	20	
Hexachlorobenzene	0.135	0.00400	mg/L	0.1000		135	40-140	5	20	
Indeno(1,2,3-cd)Pyrene	0.0993	0.00100	mg/L	0.1000		99	40-140	8	20	
Naphthalene	0.0715	0.00400	mg/L	0.1000		71	40-140	4	20	
Pentachlorophenol	0.128	0.0180	mg/L	0.1000		128	30-130	0.7	20	
Phenanthrene	0.0963	0.00400	mg/L	0.1000		96	40-140	4	20	
Pyrene	0.104	0.00400	mg/L	0.1000		104	40-140	6	20	
Surrogate: 1,2-Dichlorobenzene-d4	*0.0888*		mg/L	*0.1000*		*89*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.202*		mg/L	*0.1500*		*134*	*15-110*			*S+*
Surrogate: 2-Fluorobiphenyl	*0.102*		mg/L	*0.1000*		*102*	*30-130*			
Surrogate: Nitrobenzene-d5	*0.119*		mg/L	*0.1000*		*119*	*30-130*			
Surrogate: p-Terphenyl-d14	*0.105*		mg/L	*0.1000*		*105*	*30-130*			
Classical Chemistry										
Batch CK92612 - General Preparation										
Blank										
Total Suspended Solids	ND	5	mg/L							
LCS										
Total Suspended Solids	34		mg/L	34.60		98	80-120			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company ESS Laboratory Work Order: 19K0746

Notes and Definitions

U	Analyte included in the analysis, but not detected
S+	Surrogate recovery(ies) above upper control limit (S+).
Q	Calibration required quadratic regression (Q).
ICV-	Initial Calibration Verification recovery is below lower control limit (ICV-).
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
B-	Blank Spike recovery is below lower control limit (B-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19K0746

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

Shipped/Delivered Via: Client

ESS Project ID: 19K0746
Date Received: 11/22/2019
Project Due Date: 12/3/2019
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 2.3 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / (NA)
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? Yes / (No)
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? (Yes) / No
    a. Air bubbles in aqueous VOAs? (Yes) / No
    b. Does methanol cover soil completely? Yes / No / (NA)

13. Are the samples properly preserved? (Yes) / No
    a. If metals preserved upon receipt: Date: _____ Time: _____ By: _____
    b. Low Level VOA vials frozen: Date: _____ Time: _____ By: _____

Sample Receiving Notes:

Air Bubble in TB

14. Was there a need to contact Project Manager? (Yes) / No
    a. Was there a need to contact the client? (Yes) / No
    Who was contacted? _____ Date: _____ Time: _____ By: _____

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	415695	Yes	No	Yes	VOA Vial - HCl	HCl	
01	415696	Yes	No	Yes	VOA Vial - HCl	HCl	
01	415697	Yes	No	Yes	VOA Vial - HCl	HCl	
02	415692	Yes	No	Yes	VOA Vial - HCl	HCl	
02	415693	Yes	No	Yes	VOA Vial - HCl	HCl	
02	415694	Yes	No	Yes	VOA Vial - HCl	HCl	
03	415689	Yes	No	Yes	VOA Vial - HCl	HCl	
03	415690	Yes	No	Yes	VOA Vial - HCl	HCl	
03	415691	Yes	No	Yes	VOA Vial - HCl	HCl	
03	415700	Yes	NA	Yes	1L Amber - Unpres	NP	
03	415701	Yes	NA	Yes	1L Amber - Unpres	NP	
03	415702	Yes	NA	Yes	1L Amber - Unpres	NP	
03	415703	Yes	NA	Yes	1L Amber - Unpres	NP	
03	415704	Yes	NA	Yes	1L Amber - H2SO4	H2SO4	
03	415705	Yes	NA	Yes	1L Amber - H2SO4	H2SO4	
03	415707	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
04	415686	Yes	No	Yes	VOA Vial - HCl	HCl	
04	415687	Yes	No	Yes	VOA Vial - HCl	HCl	
04	415688	Yes	No	Yes	VOA Vial - HCl	HCl	
05	415683	Yes	No	Yes	VOA Vial - HCl	HCl	
05	415684	Yes	No	Yes	VOA Vial - HCl	HCl	
05	415685	Yes	No	Yes	VOA Vial - HCl	HCl	
05	415698	Yes	NA	Yes	1L Amber - Unpres	NP	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

ESS Project ID: 19K0746
Date Received: 11/22/2019

05	415699	Yes	NA	Yes	1L Amber - Unpres	NP
05	415706	Yes	NA	Yes	250 mL Poly - Unpres	NP
06	415680	Yes	No	Yes	VOA Vial - HCl	HCl
06	415681	Yes	No	Yes	VOA Vial - HCl	HCl
06	415682	Yes	No	Yes	VOA Vial - HCl	HCl
07	415677	Yes	~~No~~ Yes PRN	Yes	VOA Vial - HCl	HCl

2nd Review

Were all containers scanned into storage/lab? Initials MC

Are barcode labels on correct containers? Yes / No

Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA

Are all Hex Chrome stickers attached? Yes / No / NA

Are all QC stickers attached? Yes / No / NA

Are VOA stickers attached if bubbles noted? Yes / No / NA

Completed By: [signature] Date & Time: 11/22/19 @ 17:42

Reviewed By: [signature] Date & Time: 11/22/19 1748

Delivered By: [signature] 11/22/19 1748

CHAIN OF CUSTODY

ESS Laboratory
Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

ESS Lab # 19K0746

Turn Time: 5 Days

Regulatory State

Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

Reporting Limits

Electonic Deliverables: ☑ Data Checker ☒ Excel ☒ Other (Please Specify →) PDF

Company Name	Project #	Project Name
GZA	34502.04	Seville Rye
Contact Person	**Address**	
Richard Carlone	100 Valley St, Suite 300	
City	**State**	**Zip Code** / **PO #**
Providence	RI	02909
Telephone Number	**FAX Number**	**Email Address**
		richard.carlone@gza.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOCs	SVOCs	PAHs	TPH	PCB	PP-13 Metals	TSS
1	11/22/19	1204	Grab	GW	MW-14	X						
2	11/22/19	1304	Grab	GW	MW-16	X						
3	11/22/19	1110	Grab	GW	EB - Soil	X		X	X	X	X	
4	11/22/19	1320	Grab	GW	EB - GW	X	X					X
5	11/22/19	1330	Grab	GW	Drum	X						
6	11/22/19	0800	Grab	GW	BD11222019	X						
7	11/22/19	0800			Trip Blank							

Container Type:	AC-Air Cassette	AG-Amber Glass	B-BOD Bottle	C-Cubitainer	J-Jar	O-Other	P-Poly	S-Sterile	V-Vial	V	AG	AG	AG	AG	P	P
	11-Other*									7	6	6	6	6	3	3
Container Volume:	1-100 mL	2-2.5 gal	3-250 mL	4-300 mL	5-500 mL	6-1L	7-VOA	8-2 oz	9-4 oz	10-8 oz	2	1	1	3	1	4	1
	11-Other*																
Preservation Code:	1-Non Preserved	2-HCl	3-H2SO4	4-HNO3	5-NaOH	6-Methanol	7-Na2S2O3	8-ZnAce, NaOH	9-NH4Cl	10-DI H2O	11-Other*	3	2	2	2	2	1	1
											Number of Containers per Sample:							

Laboratory Use Only

Cooler Present: yes ○ Drop Off
Seals Intact: ○ Pickup
Cooler Temperature: 2.3 °C ice

Sampled by: Rowan Hayes

Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
11/22/19 1435	11/22/19 1435		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

ANALYTICAL REPORT

Lab Number:	L1956801
Client:	GZA GeoEnvironmental, Inc. 188 Valley St Suite 300 Providence, RI 02903
ATTN:	Rick Carlone
Phone:	(401) 421-4140
Project Name:	SEVILLE DYEING
Project Number:	34502.04
Report Date:	12/04/19

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

Six Park Row, Mansfield, MA 02048
508-261-7467 (Fax) -- -- - emccarter@mansfieldma.com

Project Name: SEVILLE DYEING
Project Number: 34502.04

Lab Number: L1956801
Report Date: 12/04/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1956801-01	MW-16	SOIL_VAPOR	WOONSOCKET, RI	11/22/19 11:20	11/25/19
L1956801-02	MW-8	SOIL_VAPOR	WOONSOCKET, RI	11/22/19 13:40	11/25/19

Project Name:	SEVILLE DYEING	**Lab Number:**	L1956801
Project Number:	34502.04	**Report Date:**	12/04/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	SEVILLE DYEING	**Lab Number:**	L1956801
Project Number:	34502.04	**Report Date:**	12/04/19

Case Narrative (continued)

Volatile Organics in Air

Canisters were released from the laboratory on November 20, 2019. The canister certification results are provided as an addendum.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Christopher J. Anderson

Title: Technical Director/Representative Date: 12/04/19

AIR

Project Name: SEVILLE DYEING
Project Number: 34502.04

Lab Number: L1956801
Report Date: 12/04/19

SAMPLE RESULTS

Lab ID: L1956801-01
Client ID: MW-16
Sample Location: WOONSOCKET, RI

Date Collected: 11/22/19 11:20
Date Received: 11/25/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 12/04/19 01:23
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Propylene	16.4	0.500	--	28.2	0.861	--		1
Dichlorodifluoromethane	0.400	0.200	--	1.98	0.989	--		1
Chloromethane	0.526	0.200	--	1.09	0.413	--		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethyl Alcohol	11.7	5.00	--	22.0	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	4.25	1.00	--	10.1	2.38	--		1
Trichlorofluoromethane	3.49	0.200	--	19.6	1.12	--		1
iso-Propyl Alcohol	0.774	0.500	--	1.90	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1

Project Name: SEVILLE DYEING
Project Number: 34502.04

Lab Number: L1956801
Report Date: 12/04/19

SAMPLE RESULTS

Lab ID: L1956801-01
Client ID: MW-16
Sample Location: WOONSOCKET, RI

Date Collected: 11/22/19 11:20
Date Received: 11/25/19
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	0.227	0.200	--	0.800	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	0.354	0.200	--	1.13	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
Xylene (Total)	ND	0.200	--	ND	0.869	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,2-Dichloroethene (total)	ND	0.200	--	ND	0.793	--		1
Toluene	0.542	0.200	--	2.04	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
1,3-Dichloropropene, Total	ND	0.200	--	ND	0.908	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1

Project Name: SEVILLE DYEING
Project Number: 34502.04

Lab Number: L1956801
Report Date: 12/04/19

SAMPLE RESULTS

Lab ID: L1956801-01
Client ID: MW-16
Sample Location: WOONSOCKET, RI

Date Collected: 11/22/19 11:20
Date Received: 11/25/19
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	96		60-140
Bromochloromethane	94		60-140
chlorobenzene-d5	93		60-140

Project Name: SEVILLE DYEING
Project Number: 34502.04

Lab Number: L1956801
Report Date: 12/04/19

SAMPLE RESULTS

Lab ID: L1956801-02
Client ID: MW-8
Sample Location: WOONSOCKET, RI

Date Collected: 11/22/19 13:40
Date Received: 11/25/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 12/04/19 02:03
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Propylene	0.804	0.500	--	1.38	0.861	--		1
Dichlorodifluoromethane	0.462	0.200	--	2.28	0.989	--		1
Chloromethane	0.548	0.200	--	1.13	0.413	--		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethyl Alcohol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	2.98	1.00	--	7.08	2.38	--		1
Trichlorofluoromethane	0.394	0.200	--	2.21	1.12	--		1
iso-Propyl Alcohol	ND	0.500	--	ND	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1

Project Name: SEVILLE DYEING
Project Number: 34502.04

Lab Number: L1956801
Report Date: 12/04/19

SAMPLE RESULTS

Lab ID: L1956801-02
Client ID: MW-8
Sample Location: WOONSOCKET, RI

Date Collected: 11/22/19 13:40
Date Received: 11/25/19
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	0.212	0.200	--	0.747	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	0.367	0.200	--	1.17	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
Xylene (Total)	ND	0.200	--	ND	0.869	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,2-Dichloroethene (total)	ND	0.200	--	ND	0.793	--		1
Toluene	0.509	0.200	--	1.92	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
1,3-Dichloropropene, Total	ND	0.200	--	ND	0.908	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1

Project Name: SEVILLE DYEING
Project Number: 34502.04

Lab Number: L1956801
Report Date: 12/04/19

SAMPLE RESULTS

Lab ID: L1956801-02
Client ID: MW-8
Sample Location: WOONSOCKET, RI

Date Collected: 11/22/19 13:40
Date Received: 11/25/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	96		60-140
Bromochloromethane	94		60-140
chlorobenzene-d5	95		60-140

Project Name: SEVILLE DYEING
Project Number: 34502.04
Lab Number: L1956801
Report Date: 12/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 12/03/19 14:36

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1316134-4								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Acetaldehyde	ND	2.50	--	ND	4.50	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethyl Alcohol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
iso-Propyl Alcohol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: SEVILLE DYEING
Project Number: 34502.04
Lab Number: L1956801
Report Date: 12/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 12/03/19 14:36

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1316134-4								
tert-Butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.200	--	ND	1.53	--		1
Xylene (Total)	ND	0.200	--	ND	0.869	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethene (total)	ND	0.200	--	ND	0.793	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,3-Dichloropropene, Total	ND	0.200	--	ND	0.908	--		1
Isopropyl Ether	ND	0.200	--	ND	0.836	--		1
Ethyl-Tert-Butyl-Ether	ND	0.200	--	ND	0.836	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1

Project Name: SEVILLE DYEING
Project Number: 34502.04
Lab Number: L1956801
Report Date: 12/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 12/03/19 14:36

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1316134-4								
Thiophene	ND	0.200	--	ND	0.688	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
Tertiary-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Methylthiophene	ND	0.200	--	ND	0.803	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
3-Methylthiophene	ND	0.200	--	ND	0.803	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl Acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1

Project Name: SEVILLE DYEING
Project Number: 34502.04
Lab Number: L1956801
Report Date: 12/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 12/03/19 14:36

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1316134-4								
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
2-Ethylthiophene	ND	0.200	--	ND	0.918	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane (C9)	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
o-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
p-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane (C10)	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1

Project Name: SEVILLE DYEING
Project Number: 34502.04
Lab Number: L1956801
Report Date: 12/04/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 12/03/19 14:36

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1316134-4								
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,3-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
Indane	ND	0.200	--	ND	0.967	--		1
Indene	ND	0.200	--	ND	0.951	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
1,2,4,5-Tetramethylbenzene	ND	0.200	--	ND	1.10	--		1
Dodecane (C12)	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Benzothiophene	ND	0.500	--	ND	2.74	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1
2-Methylnaphthalene	ND	1.00	--	ND	5.82	--		1
1-Methylnaphthalene	ND	1.00	--	ND	5.82	--		1

Lab Control Sample Analysis

Batch Quality Control

Project Name: SEVILLE DYEING

Project Number: 34502.04

Lab Number: L1956801

Report Date: 12/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1316134-3								
Chlorodifluoromethane	94		-		70-130	-		
Propylene	120		-		70-130	-		
Propane	93		-		70-130	-		
Dichlorodifluoromethane	106		-		70-130	-		
Chloromethane	105		-		70-130	-		
1,2-Dichloro-1,1,2,2-tetrafluoroethane	107		-		70-130	-		
Methanol	100		-		70-130	-		
Vinyl chloride	107		-		70-130	-		
1,3-Butadiene	110		-		70-130	-		
Butane	98		-		70-130	-		
Bromomethane	108		-		70-130	-		
Chloroethane	110		-		70-130	-		
Ethyl Alcohol	90		-		40-160	-		
Dichlorofluoromethane	100		-		70-130	-		
Vinyl bromide	104		-		70-130	-		
Acrolein	92		-		70-130	-		
Acetone	91		-		40-160	-		
Acetonitrile	100		-		70-130	-		
Trichlorofluoromethane	104		-		70-130	-		
iso-Propyl Alcohol	97		-		40-160	-		
Acrylonitrile	99		-		70-130	-		
Pentane	119		-		70-130	-		
Ethyl ether	116		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: SEVILLE DYEING

Project Number: 34502.04

Lab Number: L1956801

Report Date: 12/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1316134-3								
1,1-Dichloroethene	107		-		70-130	-		
tert-Butyl Alcohol	104		-		70-130	-		
Methylene chloride	105		-		70-130	-		
3-Chloropropene	109		-		70-130	-		
Carbon disulfide	100		-		70-130	-		
1,1,2-Trichloro-1,2,2-Trifluoroethane	108		-		70-130	-		
trans-1,2-Dichloroethene	111		-		70-130	-		
1,1-Dichloroethane	112		-		70-130	-		
Methyl tert butyl ether	108		-		70-130	-		
Vinyl acetate	107		-		70-130	-		
2-Butanone	112		-		70-130	-		
cis-1,2-Dichloroethene	116		-		70-130	-		
Ethyl Acetate	121		-		70-130	-		
Chloroform	114		-		70-130	-		
Tetrahydrofuran	113		-		70-130	-		
2,2-Dichloropropane	100		-		70-130	-		
1,2-Dichloroethane	112		-		70-130	-		
n-Hexane	111		-		70-130	-		
Isopropyl Ether	102		-		70-130	-		
Ethyl-Tert-Butyl-Ether	102		-		70-130	-		
1,2-Dichloroethene (total)	114		-			-		
1,2-Dichloroethene (total)	114		-			-		
1,1,1-Trichloroethane	124		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: SEVILLE DYEING

Project Number: 34502.04

Lab Number: L1956801

Report Date: 12/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1316134-3								
1,1-Dichloropropene	100		-		70-130	-		
Benzene	104		-		70-130	-		
Carbon tetrachloride	111		-		70-130	-		
Cyclohexane	111		-		70-130	-		
Tertiary-Amyl Methyl Ether	99		-		70-130	-		
Dibromomethane	101		-		70-130	-		
1,2-Dichloropropane	111		-		70-130	-		
Bromodichloromethane	111		-		70-130	-		
1,4-Dioxane	120		-		70-130	-		
Trichloroethene	108		-		70-130	-		
2,2,4-Trimethylpentane	113		-		70-130	-		
Methyl Methacrylate	86		-		40-160	-		
Heptane	109		-		70-130	-		
cis-1,3-Dichloropropene	114		-		70-130	-		
4-Methyl-2-pentanone	116		-		70-130	-		
trans-1,3-Dichloropropene	98		-		70-130	-		
1,1,2-Trichloroethane	112		-		70-130	-		
Toluene	107		-		70-130	-		
1,3-Dichloropropane	98		-		70-130	-		
2-Hexanone	129		-		70-130	-		
Dibromochloromethane	113		-		70-130	-		
1,2-Dibromoethane	109		-		70-130	-		
Butyl Acetate	108		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: SEVILLE DYEING

Project Number: 34502.04

Lab Number: L1956801

Report Date: 12/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1316134-3								
Octane	102		-		70-130	-		
Tetrachloroethene	106		-		70-130	-		
1,1,1,2-Tetrachloroethane	100		-		70-130	-		
Chlorobenzene	108		-		70-130	-		
Ethylbenzene	112		-		70-130	-		
p/m-Xylene	108		-		70-130	-		
Bromoform	112		-		70-130	-		
Styrene	109		-		70-130	-		
1,1,2,2-Tetrachloroethane	112		-		70-130	-		
o-Xylene	110		-		70-130	-		
1,2,3-Trichloropropane	100		-		70-130	-		
Nonane (C9)	99		-		70-130	-		
Isopropylbenzene	104		-		70-130	-		
Bromobenzene	102		-		70-130	-		
o-Chlorotoluene	99		-		70-130	-		
n-Propylbenzene	102		-		70-130	-		
p-Chlorotoluene	100		-		70-130	-		
4-Ethyltoluene	108		-		70-130	-		
1,3,5-Trimethylbenzene	95		-		70-130	-		
tert-Butylbenzene	102		-		70-130	-		
1,2,4-Trimethylbenzene	111		-		70-130	-		
Decane (C10)	105		-		70-130	-		
Benzyl chloride	120		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: SEVILLE DYEING

Project Number: 34502.04

Lab Number: L1956801

Report Date: 12/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1316134-3								
1,3-Dichlorobenzene	110		-		70-130	-		
1,4-Dichlorobenzene	110		-		70-130	-		
sec-Butylbenzene	102		-		70-130	-		
p-Isopropyltoluene	98		-		70-130	-		
1,2-Dichlorobenzene	112		-		70-130	-		
n-Butylbenzene	111		-		70-130	-		
1,2-Dibromo-3-chloropropane	109		-		70-130	-		
Undecane	110		-		70-130	-		
Dodecane (C12)	117		-		70-130	-		
1,2,4-Trichlorobenzene	126		-		70-130	-		
Naphthalene	112		-		70-130	-		
1,2,3-Trichlorobenzene	115		-		70-130	-		
Hexachlorobutadiene	113		-		70-130	-		

Project Name: SEVILLE DYEING

Lab Number: L1956801

Project Number: 34502.04

Report Date: 12/04/19

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controler Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1956801-01	MW-16	0803	Flow 1	11/20/19	307846		-	-	-	Pass	72	78	8
L1956801-01	MW-16	2072	2.7L Can	11/20/19	307846	L1954637-05	Pass	-28.3	-3.4	-	-	-	-
L1956801-02	MW-8	01028	Flow 1	11/20/19	307846		-	-	-	Pass	72	79	9
L1956801-02	MW-8	2229	2.7L Can	11/20/19	307846	L1954637-05	Pass	-28.8	-7.2	-	-	-	-

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1954637
Report Date: 12/04/19

Air Canister Certification Results

Lab ID: L1954637-05
Client ID: CAN 491 SHELF 2
Sample Location:

Date Collected: 11/14/19 16:00
Date Received: 11/15/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 11/15/19 19:58
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1954637
Report Date: 12/04/19

Air Canister Certification Results

Lab ID: L1954637-05
Client ID: CAN 491 SHELF 2
Sample Location:

Date Collected: 11/14/19 16:00
Date Received: 11/15/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1954637
Report Date: 12/04/19

Air Canister Certification Results

Lab ID: L1954637-05
Client ID: CAN 491 SHELF 2
Sample Location:

Date Collected: 11/14/19 16:00
Date Received: 11/15/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1954637
Report Date: 12/04/19

Air Canister Certification Results

Lab ID: L1954637-05
Client ID: CAN 491 SHELF 2
Sample Location:

Date Collected: 11/14/19 16:00
Date Received: 11/15/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1954637
Report Date: 12/04/19

Air Canister Certification Results

Lab ID: L1954637-05
Client ID: CAN 491 SHELF 2
Sample Location:

Date Collected: 11/14/19 16:00
Date Received: 11/15/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	79		60-140
Bromochloromethane	86		60-140
chlorobenzene-d5	81		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1954637
Report Date: 12/04/19

Air Canister Certification Results

Lab ID: L1954637-05
Client ID: CAN 491 SHELF 2
Sample Location:

Date Collected: 11/14/19 16:00
Date Received: 11/15/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 11/15/19 19:58
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1954637
Report Date: 12/04/19

Air Canister Certification Results

Lab ID: L1954637-05
Client ID: CAN 491 SHELF 2
Sample Location:

Date Collected: 11/14/19 16:00
Date Received: 11/15/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1954637
Report Date: 12/04/19

Air Canister Certification Results

Lab ID: L1954637-05
Client ID: CAN 491 SHELF 2
Sample Location:

Date Collected: 11/14/19 16:00
Date Received: 11/15/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	80		60-140
bromochloromethane	86		60-140
chlorobenzene-d5	82		60-140

Project Name: SEVILLE DYEING
Project Number: 34502.04

Lab Number: L1956801
Report Date: 12/04/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
NA	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1956801-01A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30)
L1956801-02A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30)

*Values in parentheses indicate holding time in days

Project Name:	SEVILLE DYEING	**Lab Number:**	L1956801
Project Number:	34502.04	**Report Date:**	12/04/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: Data Usability Report

Project Name:	SEVILLE DYEING	**Lab Number:**	L1956801
Project Number:	34502.04	**Report Date:**	12/04/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the reporting limit (RL) for the sample.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

Report Format: Data Usability Report

Project Name:	SEVILLE DYEING	**Lab Number:**	L1956801
Project Number:	34502.04	**Report Date:**	12/04/19

Data Qualifiers

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

Project Name: SEVILLE DYEING
Project Number: 34502.04
Lab Number: L1956801
Report Date: 12/04/19

REFERENCES

48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

AIR ANALYSIS

PAGE 1 OF 1

ALPHA ANALYTICAL — CHAIN OF CUSTODY

320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/25/19

ALPHA Job #: L1956801

Client Information

Client: GZA
Address: 188 Valley St, Suite 300
Providence, RI 02909
Phone: 401-421-4140
Fax:
Email: rcarlone@gza.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Seville Dyeing
Project Location: Woonsocket, RI
Project #: 34502.04
Project Manager: Richard Carlone
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX
☐ ADEx
Criteria Checker:
(Default based on Regulatory Criteria Indicated)
Other Formats:
☑ EMAIL (standard pdf report)
☐ Additional Deliverables:
Report to: (if different than Project Manager)

Billing Information

☐ Same as Client info PO #:
Bill to RIDEM
Rachael Simpson

Regulatory Requirements/Report Limits

State/Fed	Program	Res / Comm

Other Project Specific Requirements/Comments: MDL's must meet the MassDEP soil gas residential screening criteria.

Project-Specific Target Compound List: ☐

ANALYSIS

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	COLLECTION End Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	I D Can	I D - Flow Controller	TO-15	TO-15 SIM	APH (subset Non-petroleum HCs ☐)	Fixed Gases	Sulfides & Mercaptans by TO-15	Sample Comments (i.e. PID)
56801-01	MW-16	11-22-19	10:30	11:20	-29	-4	SV	AIF	2.7	2072	803	X					
-02	MW-8	11-22-19	12:35	13:40	-29	-8	SV	AIF	2.7	2229	1028	X					

*SAMPLE MATRIX CODES
AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Relinquished By:	Date/Time	Received By:	Date/Time:
	11-22-19 14:00		11/25/19 1554
	11/25/19 1540		11/25/19 1840
	11/25/19 2000		11/25/19 2400
	11/25/19 2111		11/25/19 21:11

CERTIFICATE OF ANALYSIS

Richard Carlone
GZA GeoEnvironmental, Inc.
188 Valley Street
Providence, RI 02909

RE: Seville Dyeing Company (03.0034502.04)
ESS Laboratory Work Order Number: 19J1002

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 1:46 pm, Nov 05, 2019

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19J1002

SAMPLE RECEIPT

The following samples were received on October 28, 2019 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
19J1002-01	MW-15 0-2ft	Soil	6010C, 7471B, 8082A, 8100M, 8260B, 8270D PAH
19J1002-02	B-14 2-4ft	Soil	6010C, 7471B, 8082A, 8100M, 8260B, 8270D PAH
19J1002-03	B-13 2-4ft	Soil	6010C, 7471B, 8082A, 8100M, 8260B, 8270D PAH
19J1002-04	B010282019	Soil	6010C, 7471B, 8082A, 8100M, 8260B, 8270D PAH
19J1002-05	Trip Blank	Soil	8260B

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19J1002

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Methanol
CJ93128-BSD1 **Blank Spike recovery is below lower control limit (B-).**
1,4-Dioxane - Screen (0% @ 44-241%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19J1002

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: MW-15 0-2ft
Date Sampled: 10/28/19 10:10
Percent Solids: 95

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (4.05)		6010C		1	KJK	11/01/19 20:12	2.6	100	CJ93161
Arsenic	**3.72** (2.03)		6010C		1	KJK	11/01/19 20:12	2.6	100	CJ93161
Beryllium	**0.21** (0.09)		6010C		1	KJK	11/01/19 20:12	2.6	100	CJ93161
Cadmium	ND (0.41)		6010C		1	KJK	11/01/19 20:12	2.6	100	CJ93161
Chromium	**8.34** (0.81)		6010C		1	KJK	11/01/19 20:12	2.6	100	CJ93161
Copper	**23.8** (2.03)		6010C		1	KJK	11/01/19 20:12	2.6	100	CJ93161
Lead	**97.0** (4.05)		6010C		1	KJK	11/01/19 20:12	2.6	100	CJ93161
Mercury	**0.055** (0.026)		7471B		1	MKS	11/04/19 12:05	0.8	40	CJ93162
Nickel	**8.43** (2.03)		6010C		1	KJK	11/01/19 20:12	2.6	100	CJ93161
Selenium	ND (4.05)		6010C		1	KJK	11/01/19 20:12	2.6	100	CJ93161
Silver	ND (0.41)		6010C		1	KJK	11/01/19 20:12	2.6	100	CJ93161
Thallium	ND (4.05)		6010C		1	KJK	11/01/19 20:12	2.6	100	CJ93161
Zinc	**73.8** (2.03)		6010C		1	KJK	11/01/19 20:12	2.6	100	CJ93161

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: MW-15 0-2ft
Date Sampled: 10/28/19 10:10
Percent Solids: 95
Initial Volume: 14.7
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
1,1,1-Trichloroethane	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
1,1,2,2-Tetrachloroethane	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
1,1,2-Trichloroethane	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
1,1-Dichloroethane	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
1,1-Dichloroethene	ND (0.226)	0.0677	8260B		1	10/31/19 15:17	C9J0621	CJ93128
1,1-Dichloropropene	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
1,2,3-Trichlorobenzene	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
1,2,3-Trichloropropane	ND (0.226)	0.0677	8260B		1	10/31/19 15:17	C9J0621	CJ93128
1,2,4-Trichlorobenzene	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
1,2,4-Trimethylbenzene	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
1,2-Dibromo-3-Chloropropane	ND (1.13)	0.226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
1,2-Dibromoethane	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
1,2-Dichlorobenzene	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
1,2-Dichloroethane	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
1,2-Dichloropropane	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
1,3,5-Trimethylbenzene	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
1,3-Dichlorobenzene	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
1,3-Dichloropropane	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
1,4-Dichlorobenzene	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
1,4-Dioxane - Screen	ND (45.1)	42.9	8260B		1	10/31/19 15:17	C9J0621	CJ93128
1-Chlorohexane	ND (0.226)	0.0903	8260B		1	10/31/19 15:17	C9J0621	CJ93128
2,2-Dichloropropane	ND (0.226)	0.0677	8260B		1	10/31/19 15:17	C9J0621	CJ93128
2-Butanone	ND (1.13)	0.767	8260B		1	10/31/19 15:17	C9J0621	CJ93128
2-Chlorotoluene	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
2-Hexanone	ND (1.13)	0.338	8260B		1	10/31/19 15:17	C9J0621	CJ93128
4-Chlorotoluene	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
4-Isopropyltoluene	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
4-Methyl-2-Pentanone	ND (1.13)	0.361	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Acetone	ND (1.13)	0.609	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Benzene	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Bromobenzene	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: MW-15 0-2ft
Date Sampled: 10/28/19 10:10
Percent Solids: 95
Initial Volume: 14.7
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.226)	0.0677	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Bromodichloromethane	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Bromoform	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Bromomethane	ND (0.226)	0.0903	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Carbon Disulfide	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Carbon Tetrachloride	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Chlorobenzene	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Chloroethane	ND (0.226)	0.0903	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Chloroform	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Chloromethane	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
cis-1,2-Dichloroethene	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
cis-1,3-Dichloropropene	ND (0.226)	0.0677	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Dibromochloromethane	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Dibromomethane	ND (0.226)	0.0677	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Dichlorodifluoromethane	ND (0.226)	0.0677	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Diethyl Ether	ND (0.226)	0.0677	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Di-isopropyl ether	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Ethyl tertiary-butyl ether	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Ethylbenzene	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Hexachlorobutadiene	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Isopropylbenzene	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Methyl tert-Butyl Ether	ND (0.226)	0.0677	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Methylene Chloride	ND (0.451)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Naphthalene	**0.298** (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
n-Butylbenzene	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
n-Propylbenzene	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
sec-Butylbenzene	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Styrene	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
tert-Butylbenzene	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Tertiary-amyl methyl ether	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Tetrachloroethene	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Tetrahydrofuran	ND (1.13)	0.361	8260B		1	10/31/19 15:17	C9J0621	CJ93128

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: MW-15 0-2ft
Date Sampled: 10/28/19 10:10
Percent Solids: 95
Initial Volume: 14.7
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
trans-1,2-Dichloroethene	ND (0.226)	0.0677	8260B		1	10/31/19 15:17	C9J0621	CJ93128
trans-1,3-Dichloropropene	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Trichloroethene	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Trichlorofluoromethane	ND (0.226)	0.0903	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Vinyl Acetate	ND (0.226)	0.113	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Vinyl Chloride	ND (0.226)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Xylene O	ND (0.226)	0.0226	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Xylene P,M	ND (0.451)	0.0451	8260B		1	10/31/19 15:17	C9J0621	CJ93128
Xylenes (Total)	ND (0.451)		8260B		1	10/31/19 15:17		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*114 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*107 %*		*70-130*
Surrogate: Dibromofluoromethane	*113 %*		*70-130*
Surrogate: Toluene-d8	*114 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: MW-15 0-2ft
Date Sampled: 10/28/19 10:10
Percent Solids: 95
Initial Volume: 20.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MJV
Prepared: 10/30/19 15:44

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	10/31/19 19:05		CJ93010
Aroclor 1221	ND (0.05)		8082A		1	10/31/19 19:05		CJ93010
Aroclor 1232	ND (0.05)		8082A		1	10/31/19 19:05		CJ93010
Aroclor 1242	ND (0.05)		8082A		1	10/31/19 19:05		CJ93010
Aroclor 1248	ND (0.05)		8082A		1	10/31/19 19:05		CJ93010
Aroclor 1254	ND (0.05)		8082A		1	10/31/19 19:05		CJ93010
Aroclor 1260	ND (0.05)		8082A		1	10/31/19 19:05		CJ93010
Aroclor 1262	ND (0.05)		8082A		1	10/31/19 19:05		CJ93010
Aroclor 1268	ND (0.05)		8082A		1	10/31/19 19:05		CJ93010

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*67 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*63 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*55 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*68 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: MW-15 0-2ft
Date Sampled: 10/28/19 10:10
Percent Solids: 95
Initial Volume: 19.5
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/29/19 12:19

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**477** (40.5)		8100M		1	10/30/19 17:48	C9J0571	CJ92911

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*77 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: MW-15 0-2ft
Date Sampled: 10/28/19 10:10
Percent Solids: 95
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/29/19 13:51

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.368)		8270D PAH		1	11/01/19 17:49	C9K0009	CJ92909
Acenaphthene	ND (0.368)		8270D PAH		1	11/01/19 17:49	C9K0009	CJ92909
Acenaphthylene	ND (0.368)		8270D PAH		1	11/01/19 17:49	C9K0009	CJ92909
Anthracene	**0.656** (0.368)		8270D PAH		1	11/01/19 17:49	C9K0009	CJ92909
Benzo(a)anthracene	**1.58** (0.368)		8270D PAH		1	11/01/19 17:49	C9K0009	CJ92909
Benzo(a)pyrene	**1.30** (0.185)		8270D PAH		1	11/01/19 17:49	C9K0009	CJ92909
Benzo(b)fluoranthene	**1.44** (0.368)		8270D PAH		1	11/01/19 17:49	C9K0009	CJ92909
Benzo(g,h,i)perylene	**0.870** (0.368)		8270D PAH		1	11/01/19 17:49	C9K0009	CJ92909
Benzo(k)fluoranthene	**0.852** (0.368)		8270D PAH		1	11/01/19 17:49	C9K0009	CJ92909
Chrysene	**1.45** (0.185)		8270D PAH		1	11/01/19 17:49	C9K0009	CJ92909
Dibenzo(a,h)Anthracene	**0.285** (0.185)		8270D PAH		1	11/01/19 17:49	C9K0009	CJ92909
Fluoranthene	**2.92** (0.368)		8270D PAH		1	11/01/19 17:49	C9K0009	CJ92909
Fluorene	ND (0.368)		8270D PAH		1	11/01/19 17:49	C9K0009	CJ92909
Indeno(1,2,3-cd)Pyrene	**0.779** (0.368)		8270D PAH		1	11/01/19 17:49	C9K0009	CJ92909
Naphthalene	ND (0.368)		8270D PAH		1	11/01/19 17:49	C9K0009	CJ92909
Phenanthrene	**2.23** (0.368)		8270D PAH		1	11/01/19 17:49	C9K0009	CJ92909
Pyrene	**2.86** (0.368)		8270D PAH		1	11/01/19 17:49	C9K0009	CJ92909

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*60 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*66 %*		*30-130*
Surrogate: Nitrobenzene-d5	*62 %*		*30-130*
Surrogate: p-Terphenyl-d14	*85 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B-14 2-4ft
Date Sampled: 10/28/19 11:50
Percent Solids: 99

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (3.08)		6010C		1	KJK	11/01/19 20:16	3.29	100	CJ93161
Arsenic	**2.11** (1.54)		6010C		1	KJK	11/01/19 20:16	3.29	100	CJ93161
Beryllium	**0.12** (0.07)		6010C		1	KJK	11/01/19 20:16	3.29	100	CJ93161
Cadmium	ND (0.31)		6010C		1	KJK	11/01/19 20:16	3.29	100	CJ93161
Chromium	**3.29** (0.62)		6010C		1	KJK	11/01/19 20:16	3.29	100	CJ93161
Copper	**3.58** (1.54)		6010C		1	KJK	11/01/19 20:16	3.29	100	CJ93161
Lead	**5.61** (3.08)		6010C		1	KJK	11/01/19 20:16	3.29	100	CJ93161
Mercury	**0.268** (0.025)		7471B		1	MKS	11/04/19 12:07	0.8	40	CJ93162
Nickel	**2.21** (1.54)		6010C		1	KJK	11/01/19 20:16	3.29	100	CJ93161
Selenium	ND (3.08)		6010C		1	KJK	11/01/19 20:16	3.29	100	CJ93161
Silver	ND (0.31)		6010C		1	KJK	11/01/19 20:16	3.29	100	CJ93161
Thallium	ND (3.08)		6010C		1	KJK	11/01/19 20:16	3.29	100	CJ93161
Zinc	**9.87** (1.54)		6010C		1	KJK	11/01/19 20:16	3.29	100	CJ93161

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B-14 2-4ft
Date Sampled: 10/28/19 11:50
Percent Solids: 99
Initial Volume: 19.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
1,1,1-Trichloroethane	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
1,1,2,2-Tetrachloroethane	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
1,1,2-Trichloroethane	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
1,1-Dichloroethane	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
1,1-Dichloroethene	ND (0.159)	0.0477	8260B		1	10/31/19 15:43	C9J0621	CJ93128
1,1-Dichloropropene	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
1,2,3-Trichlorobenzene	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
1,2,3-Trichloropropane	ND (0.159)	0.0477	8260B		1	10/31/19 15:43	C9J0621	CJ93128
1,2,4-Trichlorobenzene	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
1,2,4-Trimethylbenzene	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
1,2-Dibromo-3-Chloropropane	ND (0.796)	0.159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
1,2-Dibromoethane	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
1,2-Dichlorobenzene	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
1,2-Dichloroethane	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
1,2-Dichloropropane	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
1,3,5-Trimethylbenzene	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
1,3-Dichlorobenzene	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
1,3-Dichloropropane	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
1,4-Dichlorobenzene	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
1,4-Dioxane - Screen	ND (31.8)	30.2	8260B		1	10/31/19 15:43	C9J0621	CJ93128
1-Chlorohexane	ND (0.159)	0.0637	8260B		1	10/31/19 15:43	C9J0621	CJ93128
2,2-Dichloropropane	ND (0.159)	0.0477	8260B		1	10/31/19 15:43	C9J0621	CJ93128
2-Butanone	ND (0.796)	0.541	8260B		1	10/31/19 15:43	C9J0621	CJ93128
2-Chlorotoluene	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
2-Hexanone	ND (0.796)	0.239	8260B		1	10/31/19 15:43	C9J0621	CJ93128
4-Chlorotoluene	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
4-Isopropyltoluene	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
4-Methyl-2-Pentanone	ND (0.796)	0.255	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Acetone	ND (0.796)	0.430	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Benzene	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Bromobenzene	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B-14 2-4ft
Date Sampled: 10/28/19 11:50
Percent Solids: 99
Initial Volume: 19.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.159)	0.0477	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Bromodichloromethane	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Bromoform	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Bromomethane	ND (0.159)	0.0637	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Carbon Disulfide	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Carbon Tetrachloride	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Chlorobenzene	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Chloroethane	ND (0.159)	0.0637	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Chloroform	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Chloromethane	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
cis-1,2-Dichloroethene	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
cis-1,3-Dichloropropene	ND (0.159)	0.0477	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Dibromochloromethane	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Dibromomethane	ND (0.159)	0.0477	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Dichlorodifluoromethane	ND (0.159)	0.0477	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Diethyl Ether	ND (0.159)	0.0477	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Di-isopropyl ether	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Ethyl tertiary-butyl ether	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Ethylbenzene	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Hexachlorobutadiene	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Isopropylbenzene	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Methyl tert-Butyl Ether	ND (0.159)	0.0477	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Methylene Chloride	ND (0.318)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Naphthalene	**0.391** (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
n-Butylbenzene	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
n-Propylbenzene	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
sec-Butylbenzene	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Styrene	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
tert-Butylbenzene	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Tertiary-amyl methyl ether	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Tetrachloroethene	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Tetrahydrofuran	ND (0.796)	0.255	8260B		1	10/31/19 15:43	C9J0621	CJ93128

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B-14 2-4ft
Date Sampled: 10/28/19 11:50
Percent Solids: 99
Initial Volume: 19.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
trans-1,2-Dichloroethene	ND (0.159)	0.0477	8260B		1	10/31/19 15:43	C9J0621	CJ93128
trans-1,3-Dichloropropene	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Trichloroethene	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Trichlorofluoromethane	ND (0.159)	0.0637	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Vinyl Acetate	ND (0.159)	0.0796	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Vinyl Chloride	ND (0.159)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Xylene O	ND (0.159)	0.0159	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Xylene P,M	ND (0.318)	0.0318	8260B		1	10/31/19 15:43	C9J0621	CJ93128
Xylenes (Total)	ND (0.318)		8260B		1	10/31/19 15:43		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*114 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*115 %*		*70-130*
Surrogate: Dibromofluoromethane	*113 %*		*70-130*
Surrogate: Toluene-d8	*114 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B-14 2-4ft
Date Sampled: 10/28/19 11:50
Percent Solids: 99
Initial Volume: 19.8
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MJV
Prepared: 10/30/19 15:44

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	10/31/19 19:24		CJ93010
Aroclor 1221	ND (0.05)		8082A		1	10/31/19 19:24		CJ93010
Aroclor 1232	ND (0.05)		8082A		1	10/31/19 19:24		CJ93010
Aroclor 1242	ND (0.05)		8082A		1	10/31/19 19:24		CJ93010
Aroclor 1248	ND (0.05)		8082A		1	10/31/19 19:24		CJ93010
Aroclor 1254	ND (0.05)		8082A		1	10/31/19 19:24		CJ93010
Aroclor 1260	ND (0.05)		8082A		1	10/31/19 19:24		CJ93010
Aroclor 1262	ND (0.05)		8082A		1	10/31/19 19:24		CJ93010
Aroclor 1268	ND (0.05)		8082A		1	10/31/19 19:24		CJ93010

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*72 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*68 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*62 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*75 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B-14 2-4ft
Date Sampled: 10/28/19 11:50
Percent Solids: 99
Initial Volume: 19.5
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/29/19 12:19

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (39.0)		8100M		1	10/30/19 18:24	C9J0571	CJ92911

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*76 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B-14 2-4ft
Date Sampled: 10/28/19 11:50
Percent Solids: 99
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/29/19 13:51

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.347)		8270D PAH		1	11/01/19 18:18	C9K0009	CJ92909
Acenaphthene	ND (0.347)		8270D PAH		1	11/01/19 18:18	C9K0009	CJ92909
Acenaphthylene	ND (0.347)		8270D PAH		1	11/01/19 18:18	C9K0009	CJ92909
Anthracene	ND (0.347)		8270D PAH		1	11/01/19 18:18	C9K0009	CJ92909
Benzo(a)anthracene	**0.611** (0.347)		8270D PAH		1	11/01/19 18:18	C9K0009	CJ92909
Benzo(a)pyrene	**0.454** (0.174)		8270D PAH		1	11/01/19 18:18	C9K0009	CJ92909
Benzo(b)fluoranthene	**0.422** (0.347)		8270D PAH		1	11/01/19 18:18	C9K0009	CJ92909
Benzo(g,h,i)perylene	ND (0.347)		8270D PAH		1	11/01/19 18:18	C9K0009	CJ92909
Benzo(k)fluoranthene	ND (0.347)		8270D PAH		1	11/01/19 18:18	C9K0009	CJ92909
Chrysene	**0.518** (0.174)		8270D PAH		1	11/01/19 18:18	C9K0009	CJ92909
Dibenzo(a,h)Anthracene	ND (0.174)		8270D PAH		1	11/01/19 18:18	C9K0009	CJ92909
Fluoranthene	**1.51** (0.347)		8270D PAH		1	11/01/19 18:18	C9K0009	CJ92909
Fluorene	ND (0.347)		8270D PAH		1	11/01/19 18:18	C9K0009	CJ92909
Indeno(1,2,3-cd)Pyrene	ND (0.347)		8270D PAH		1	11/01/19 18:18	C9K0009	CJ92909
Naphthalene	ND (0.347)		8270D PAH		1	11/01/19 18:18	C9K0009	CJ92909
Phenanthrene	**1.48** (0.347)		8270D PAH		1	11/01/19 18:18	C9K0009	CJ92909
Pyrene	**1.19** (0.347)		8270D PAH		1	11/01/19 18:18	C9K0009	CJ92909

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*57 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*59 %*		*30-130*
Surrogate: Nitrobenzene-d5	*57 %*		*30-130*
Surrogate: p-Terphenyl-d14	*66 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B-13 2-4ft
Date Sampled: 10/28/19 12:50
Percent Solids: 93

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-03
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (4.12)		6010C		1	KJK	11/01/19 20:20	2.6	100	CJ93161
Arsenic	**2.65** (2.06)		6010C		1	KJK	11/01/19 20:20	2.6	100	CJ93161
Beryllium	**0.13** (0.09)		6010C		1	KJK	11/01/19 20:20	2.6	100	CJ93161
Cadmium	ND (0.41)		6010C		1	KJK	11/01/19 20:20	2.6	100	CJ93161
Chromium	**3.90** (0.82)		6010C		1	KJK	11/01/19 20:20	2.6	100	CJ93161
Copper	**3.51** (2.06)		6010C		1	KJK	11/01/19 20:20	2.6	100	CJ93161
Lead	**13.8** (4.12)		6010C		1	KJK	11/01/19 20:20	2.6	100	CJ93161
Mercury	**0.234** (0.028)		7471B		1	MKS	11/04/19 12:09	0.77	40	CJ93162
Nickel	**3.04** (2.06)		6010C		1	KJK	11/01/19 20:20	2.6	100	CJ93161
Selenium	ND (4.12)		6010C		1	KJK	11/01/19 20:20	2.6	100	CJ93161
Silver	ND (0.41)		6010C		1	KJK	11/01/19 20:20	2.6	100	CJ93161
Thallium	ND (4.12)		6010C		1	KJK	11/01/19 20:20	2.6	100	CJ93161
Zinc	**15.6** (2.06)		6010C		1	KJK	11/01/19 20:20	2.6	100	CJ93161

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B-13 2-4ft
Date Sampled: 10/28/19 12:50
Percent Solids: 93
Initial Volume: 20.2
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
1,1,1-Trichloroethane	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
1,1,2,2-Tetrachloroethane	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
1,1,2-Trichloroethane	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
1,1-Dichloroethane	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
1,1-Dichloroethene	ND (0.173)	0.0519	8260B		1	10/31/19 16:09	C9J0621	CJ93128
1,1-Dichloropropene	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
1,2,3-Trichlorobenzene	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
1,2,3-Trichloropropane	ND (0.173)	0.0519	8260B		1	10/31/19 16:09	C9J0621	CJ93128
1,2,4-Trichlorobenzene	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
1,2,4-Trimethylbenzene	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
1,2-Dibromo-3-Chloropropane	ND (0.866)	0.173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
1,2-Dibromoethane	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
1,2-Dichlorobenzene	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
1,2-Dichloroethane	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
1,2-Dichloropropane	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
1,3,5-Trimethylbenzene	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
1,3-Dichlorobenzene	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
1,3-Dichloropropane	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
1,4-Dichlorobenzene	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
1,4-Dioxane - Screen	ND (34.6)	32.9	8260B		1	10/31/19 16:09	C9J0621	CJ93128
1-Chlorohexane	ND (0.173)	0.0692	8260B		1	10/31/19 16:09	C9J0621	CJ93128
2,2-Dichloropropane	ND (0.173)	0.0519	8260B		1	10/31/19 16:09	C9J0621	CJ93128
2-Butanone	ND (0.866)	0.589	8260B		1	10/31/19 16:09	C9J0621	CJ93128
2-Chlorotoluene	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
2-Hexanone	ND (0.866)	0.260	8260B		1	10/31/19 16:09	C9J0621	CJ93128
4-Chlorotoluene	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
4-Isopropyltoluene	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
4-Methyl-2-Pentanone	ND (0.866)	0.277	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Acetone	ND (0.866)	0.467	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Benzene	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Bromobenzene	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B-13 2-4ft
Date Sampled: 10/28/19 12:50
Percent Solids: 93
Initial Volume: 20.2
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.173)	0.0519	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Bromodichloromethane	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Bromoform	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Bromomethane	ND (0.173)	0.0692	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Carbon Disulfide	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Carbon Tetrachloride	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Chlorobenzene	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Chloroethane	ND (0.173)	0.0692	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Chloroform	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Chloromethane	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
cis-1,2-Dichloroethene	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
cis-1,3-Dichloropropene	ND (0.173)	0.0519	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Dibromochloromethane	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Dibromomethane	ND (0.173)	0.0519	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Dichlorodifluoromethane	ND (0.173)	0.0519	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Diethyl Ether	ND (0.173)	0.0519	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Di-isopropyl ether	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Ethyl tertiary-butyl ether	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Ethylbenzene	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Hexachlorobutadiene	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Isopropylbenzene	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Methyl tert-Butyl Ether	ND (0.173)	0.0519	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Methylene Chloride	**J 0.0952** (0.346)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Naphthalene	**1.42** (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
n-Butylbenzene	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
n-Propylbenzene	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
sec-Butylbenzene	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Styrene	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
tert-Butylbenzene	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Tertiary-amyl methyl ether	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Tetrachloroethene	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Tetrahydrofuran	ND (0.866)	0.277	8260B		1	10/31/19 16:09	C9J0621	CJ93128

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B-13 2-4ft
Date Sampled: 10/28/19 12:50
Percent Solids: 93
Initial Volume: 20.2
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
trans-1,2-Dichloroethene	ND (0.173)	0.0519	8260B		1	10/31/19 16:09	C9J0621	CJ93128
trans-1,3-Dichloropropene	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Trichloroethene	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Trichlorofluoromethane	ND (0.173)	0.0692	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Vinyl Acetate	ND (0.173)	0.0866	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Vinyl Chloride	ND (0.173)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Xylene O	ND (0.173)	0.0173	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Xylene P,M	ND (0.346)	0.0346	8260B		1	10/31/19 16:09	C9J0621	CJ93128
Xylenes (Total)	ND (0.346)		8260B		1	10/31/19 16:09		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*122 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*124 %*		*70-130*
Surrogate: Dibromofluoromethane	*119 %*		*70-130*
Surrogate: Toluene-d8	*119 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B-13 2-4ft
Date Sampled: 10/28/19 12:50
Percent Solids: 93
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MJV
Prepared: 10/30/19 15:44

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	10/31/19 19:44		CJ93010
Aroclor 1221	ND (0.05)		8082A		1	10/31/19 19:44		CJ93010
Aroclor 1232	ND (0.05)		8082A		1	10/31/19 19:44		CJ93010
Aroclor 1242	ND (0.05)		8082A		1	10/31/19 19:44		CJ93010
Aroclor 1248	ND (0.05)		8082A		1	10/31/19 19:44		CJ93010
Aroclor 1254	ND (0.05)		8082A		1	10/31/19 19:44		CJ93010
Aroclor 1260	ND (0.05)		8082A		1	10/31/19 19:44		CJ93010
Aroclor 1262	ND (0.05)		8082A		1	10/31/19 19:44		CJ93010
Aroclor 1268	ND (0.05)		8082A		1	10/31/19 19:44		CJ93010

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*77 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*73 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*74 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*78 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B-13 2-4ft
Date Sampled: 10/28/19 12:50
Percent Solids: 93
Initial Volume: 20.2
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/29/19 12:19

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (39.7)		8100M		1	10/30/19 19:00	C9J0571	CJ92911

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*78 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B-13 2-4ft
Date Sampled: 10/28/19 12:50
Percent Solids: 93
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/29/19 13:51

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.361)		8270D PAH		1	11/01/19 18:47	C9K0009	CJ92909
Acenaphthene	ND (0.361)		8270D PAH		1	11/01/19 18:47	C9K0009	CJ92909
Acenaphthylene	ND (0.361)		8270D PAH		1	11/01/19 18:47	C9K0009	CJ92909
Anthracene	ND (0.361)		8270D PAH		1	11/01/19 18:47	C9K0009	CJ92909
Benzo(a)anthracene	ND (0.361)		8270D PAH		1	11/01/19 18:47	C9K0009	CJ92909
Benzo(a)pyrene	ND (0.181)		8270D PAH		1	11/01/19 18:47	C9K0009	CJ92909
Benzo(b)fluoranthene	ND (0.361)		8270D PAH		1	11/01/19 18:47	C9K0009	CJ92909
Benzo(g,h,i)perylene	ND (0.361)		8270D PAH		1	11/01/19 18:47	C9K0009	CJ92909
Benzo(k)fluoranthene	ND (0.361)		8270D PAH		1	11/01/19 18:47	C9K0009	CJ92909
Chrysene	ND (0.181)		8270D PAH		1	11/01/19 18:47	C9K0009	CJ92909
Dibenzo(a,h)Anthracene	ND (0.181)		8270D PAH		1	11/01/19 18:47	C9K0009	CJ92909
Fluoranthene	ND (0.361)		8270D PAH		1	11/01/19 18:47	C9K0009	CJ92909
Fluorene	ND (0.361)		8270D PAH		1	11/01/19 18:47	C9K0009	CJ92909
Indeno(1,2,3-cd)Pyrene	ND (0.361)		8270D PAH		1	11/01/19 18:47	C9K0009	CJ92909
Naphthalene	ND (0.361)		8270D PAH		1	11/01/19 18:47	C9K0009	CJ92909
Phenanthrene	ND (0.361)		8270D PAH		1	11/01/19 18:47	C9K0009	CJ92909
Pyrene	ND (0.361)		8270D PAH		1	11/01/19 18:47	C9K0009	CJ92909

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*65 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*62 %*		*30-130*
Surrogate: Nitrobenzene-d5	*63 %*		*30-130*
Surrogate: p-Terphenyl-d14	*78 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B010282019
Date Sampled: 10/28/19 08:00
Percent Solids: 95

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-04
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (4.27)		6010C		1	KJK	11/01/19 20:24	2.46	100	CJ93161
Arsenic	**3.01** (2.14)		6010C		1	KJK	11/01/19 20:24	2.46	100	CJ93161
Beryllium	**0.14** (0.09)		6010C		1	KJK	11/01/19 20:24	2.46	100	CJ93161
Cadmium	ND (0.43)		6010C		1	KJK	11/01/19 20:24	2.46	100	CJ93161
Chromium	**3.17** (0.85)		6010C		1	KJK	11/01/19 20:24	2.46	100	CJ93161
Copper	**3.15** (2.14)		6010C		1	KJK	11/01/19 20:24	2.46	100	CJ93161
Lead	**13.0** (4.27)		6010C		1	KJK	11/01/19 20:24	2.46	100	CJ93161
Mercury	**0.179** (0.024)		7471B		1	MKS	11/04/19 12:11	0.88	40	CJ93162
Nickel	**2.51** (2.14)		6010C		1	KJK	11/01/19 20:24	2.46	100	CJ93161
Selenium	ND (4.27)		6010C		1	KJK	11/01/19 20:24	2.46	100	CJ93161
Silver	ND (0.43)		6010C		1	KJK	11/01/19 20:24	2.46	100	CJ93161
Thallium	ND (4.27)		6010C		1	KJK	11/01/19 20:24	2.46	100	CJ93161
Zinc	**7.76** (2.14)		6010C		1	KJK	11/01/19 20:24	2.46	100	CJ93161

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B010282019
Date Sampled: 10/28/19 08:00
Percent Solids: 95
Initial Volume: 18.6
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
1,1,1-Trichloroethane	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
1,1,2,2-Tetrachloroethane	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
1,1,2-Trichloroethane	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
1,1-Dichloroethane	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
1,1-Dichloroethene	ND (0.180)	0.0540	8260B		1	10/31/19 16:35	C9J0621	CJ93128
1,1-Dichloropropene	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
1,2,3-Trichlorobenzene	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
1,2,3-Trichloropropane	ND (0.180)	0.0540	8260B		1	10/31/19 16:35	C9J0621	CJ93128
1,2,4-Trichlorobenzene	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
1,2,4-Trimethylbenzene	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
1,2-Dibromo-3-Chloropropane	ND (0.899)	0.180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
1,2-Dibromoethane	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
1,2-Dichlorobenzene	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
1,2-Dichloroethane	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
1,2-Dichloropropane	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
1,3,5-Trimethylbenzene	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
1,3-Dichlorobenzene	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
1,3-Dichloropropane	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
1,4-Dichlorobenzene	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
1,4-Dioxane - Screen	ND (36.0)	34.2	8260B		1	10/31/19 16:35	C9J0621	CJ93128
1-Chlorohexane	ND (0.180)	0.0720	8260B		1	10/31/19 16:35	C9J0621	CJ93128
2,2-Dichloropropane	ND (0.180)	0.0540	8260B		1	10/31/19 16:35	C9J0621	CJ93128
2-Butanone	ND (0.899)	0.612	8260B		1	10/31/19 16:35	C9J0621	CJ93128
2-Chlorotoluene	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
2-Hexanone	ND (0.899)	0.270	8260B		1	10/31/19 16:35	C9J0621	CJ93128
4-Chlorotoluene	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
4-Isopropyltoluene	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
4-Methyl-2-Pentanone	ND (0.899)	0.288	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Acetone	ND (0.899)	0.486	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Benzene	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Bromobenzene	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B010282019
Date Sampled: 10/28/19 08:00
Percent Solids: 95
Initial Volume: 18.6
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.180)	0.0540	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Bromodichloromethane	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Bromoform	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Bromomethane	ND (0.180)	0.0720	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Carbon Disulfide	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Carbon Tetrachloride	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Chlorobenzene	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Chloroethane	ND (0.180)	0.0720	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Chloroform	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Chloromethane	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
cis-1,2-Dichloroethene	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
cis-1,3-Dichloropropene	ND (0.180)	0.0540	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Dibromochloromethane	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Dibromomethane	ND (0.180)	0.0540	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Dichlorodifluoromethane	ND (0.180)	0.0540	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Diethyl Ether	ND (0.180)	0.0540	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Di-isopropyl ether	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Ethyl tertiary-butyl ether	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Ethylbenzene	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Hexachlorobutadiene	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Isopropylbenzene	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Methyl tert-Butyl Ether	ND (0.180)	0.0540	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Methylene Chloride	**J 0.0971** (0.360)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Naphthalene	**0.473** (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
n-Butylbenzene	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
n-Propylbenzene	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
sec-Butylbenzene	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Styrene	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
tert-Butylbenzene	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Tertiary-amyl methyl ether	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Tetrachloroethene	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Tetrahydrofuran	ND (0.899)	0.288	8260B		1	10/31/19 16:35	C9J0621	CJ93128

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B010282019
Date Sampled: 10/28/19 08:00
Percent Solids: 95
Initial Volume: 18.6
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
trans-1,2-Dichloroethene	ND (0.180)	0.0540	8260B		1	10/31/19 16:35	C9J0621	CJ93128
trans-1,3-Dichloropropene	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Trichloroethene	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Trichlorofluoromethane	ND (0.180)	0.0720	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Vinyl Acetate	ND (0.180)	0.0899	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Vinyl Chloride	ND (0.180)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Xylene O	ND (0.180)	0.0180	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Xylene P,M	ND (0.360)	0.0360	8260B		1	10/31/19 16:35	C9J0621	CJ93128
Xylenes (Total)	ND (0.360)		8260B		1	10/31/19 16:35		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*117 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*115 %*		*70-130*
Surrogate: Dibromofluoromethane	*119 %*		*70-130*
Surrogate: Toluene-d8	*118 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B010282019
Date Sampled: 10/28/19 08:00
Percent Solids: 95
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MJV
Prepared: 10/30/19 15:44

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	10/31/19 20:03		CJ93010
Aroclor 1221	ND (0.05)		8082A		1	10/31/19 20:03		CJ93010
Aroclor 1232	ND (0.05)		8082A		1	10/31/19 20:03		CJ93010
Aroclor 1242	ND (0.05)		8082A		1	10/31/19 20:03		CJ93010
Aroclor 1248	ND (0.05)		8082A		1	10/31/19 20:03		CJ93010
Aroclor 1254	ND (0.05)		8082A		1	10/31/19 20:03		CJ93010
Aroclor 1260	ND (0.05)		8082A		1	10/31/19 20:03		CJ93010
Aroclor 1262	ND (0.05)		8082A		1	10/31/19 20:03		CJ93010
Aroclor 1268	ND (0.05)		8082A		1	10/31/19 20:03		CJ93010

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*87 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*78 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*81 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*86 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B010282019
Date Sampled: 10/28/19 08:00
Percent Solids: 95
Initial Volume: 20.4
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/29/19 12:19

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (38.7)		8100M		1	10/30/19 19:37	C9J0571	CJ92911

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*86 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: B010282019
Date Sampled: 10/28/19 08:00
Percent Solids: 95
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/29/19 13:51

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.330)		8270D PAH		1	11/01/19 19:16	C9K0009	CJ92909
Acenaphthene	ND (0.330)		8270D PAH		1	11/01/19 19:16	C9K0009	CJ92909
Acenaphthylene	ND (0.330)		8270D PAH		1	11/01/19 19:16	C9K0009	CJ92909
Anthracene	ND (0.330)		8270D PAH		1	11/01/19 19:16	C9K0009	CJ92909
Benzo(a)anthracene	ND (0.330)		8270D PAH		1	11/01/19 19:16	C9K0009	CJ92909
Benzo(a)pyrene	ND (0.166)		8270D PAH		1	11/01/19 19:16	C9K0009	CJ92909
Benzo(b)fluoranthene	ND (0.330)		8270D PAH		1	11/01/19 19:16	C9K0009	CJ92909
Benzo(g,h,i)perylene	ND (0.330)		8270D PAH		1	11/01/19 19:16	C9K0009	CJ92909
Benzo(k)fluoranthene	ND (0.330)		8270D PAH		1	11/01/19 19:16	C9K0009	CJ92909
Chrysene	ND (0.166)		8270D PAH		1	11/01/19 19:16	C9K0009	CJ92909
Dibenzo(a,h)Anthracene	ND (0.166)		8270D PAH		1	11/01/19 19:16	C9K0009	CJ92909
Fluoranthene	ND (0.330)		8270D PAH		1	11/01/19 19:16	C9K0009	CJ92909
Fluorene	ND (0.330)		8270D PAH		1	11/01/19 19:16	C9K0009	CJ92909
Indeno(1,2,3-cd)Pyrene	ND (0.330)		8270D PAH		1	11/01/19 19:16	C9K0009	CJ92909
Naphthalene	ND (0.330)		8270D PAH		1	11/01/19 19:16	C9K0009	CJ92909
Phenanthrene	ND (0.330)		8270D PAH		1	11/01/19 19:16	C9K0009	CJ92909
Pyrene	ND (0.330)		8270D PAH		1	11/01/19 19:16	C9K0009	CJ92909

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*67 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*65 %*		*30-130*
Surrogate: Nitrobenzene-d5	*66 %*		*30-130*
Surrogate: p-Terphenyl-d14	*88 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: Trip Blank
Date Sampled: 10/28/19 08:00
Percent Solids: N/A
Initial Volume: 15
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-05
Sample Matrix: Soil
Units: mg/kg wet
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
1,1,1-Trichloroethane	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
1,1,2,2-Tetrachloroethane	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
1,1,2-Trichloroethane	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
1,1-Dichloroethane	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
1,1-Dichloroethene	ND (0.200)	0.0600	8260B		1	10/31/19 12:41	C9J0621	CJ93128
1,1-Dichloropropene	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
1,2,3-Trichlorobenzene	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
1,2,3-Trichloropropane	ND (0.200)	0.0600	8260B		1	10/31/19 12:41	C9J0621	CJ93128
1,2,4-Trichlorobenzene	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
1,2,4-Trimethylbenzene	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
1,2-Dibromo-3-Chloropropane	ND (1.00)	0.200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
1,2-Dibromoethane	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
1,2-Dichlorobenzene	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
1,2-Dichloroethane	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
1,2-Dichloropropane	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
1,3,5-Trimethylbenzene	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
1,3-Dichlorobenzene	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
1,3-Dichloropropane	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
1,4-Dichlorobenzene	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
1,4-Dioxane - Screen	ND (40.0)	38.0	8260B		1	10/31/19 12:41	C9J0621	CJ93128
1-Chlorohexane	ND (0.200)	0.0800	8260B		1	10/31/19 12:41	C9J0621	CJ93128
2,2-Dichloropropane	ND (0.200)	0.0600	8260B		1	10/31/19 12:41	C9J0621	CJ93128
2-Butanone	ND (1.00)	0.680	8260B		1	10/31/19 12:41	C9J0621	CJ93128
2-Chlorotoluene	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
2-Hexanone	ND (1.00)	0.300	8260B		1	10/31/19 12:41	C9J0621	CJ93128
4-Chlorotoluene	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
4-Isopropyltoluene	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
4-Methyl-2-Pentanone	ND (1.00)	0.320	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Acetone	ND (1.00)	0.540	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Benzene	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Bromobenzene	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: Trip Blank
Date Sampled: 10/28/19 08:00
Percent Solids: N/A
Initial Volume: 15
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-05
Sample Matrix: Soil
Units: mg/kg wet
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.200)	0.0600	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Bromodichloromethane	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Bromoform	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Bromomethane	ND (0.200)	0.0800	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Carbon Disulfide	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Carbon Tetrachloride	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Chlorobenzene	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Chloroethane	ND (0.200)	0.0800	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Chloroform	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Chloromethane	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
cis-1,2-Dichloroethene	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
cis-1,3-Dichloropropene	ND (0.200)	0.0600	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Dibromochloromethane	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Dibromomethane	ND (0.200)	0.0600	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Dichlorodifluoromethane	ND (0.200)	0.0600	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Diethyl Ether	ND (0.200)	0.0600	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Di-isopropyl ether	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Ethyl tertiary-butyl ether	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Ethylbenzene	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Hexachlorobutadiene	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Isopropylbenzene	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Methyl tert-Butyl Ether	ND (0.200)	0.0600	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Methylene Chloride	**J 0.110** (0.400)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Naphthalene	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
n-Butylbenzene	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
n-Propylbenzene	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
sec-Butylbenzene	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Styrene	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
tert-Butylbenzene	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Tertiary-amyl methyl ether	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Tetrachloroethene	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Tetrahydrofuran	ND (1.00)	0.320	8260B		1	10/31/19 12:41	C9J0621	CJ93128

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company
Client Sample ID: Trip Blank
Date Sampled: 10/28/19 08:00
Percent Solids: N/A
Initial Volume: 15
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J1002
ESS Laboratory Sample ID: 19J1002-05
Sample Matrix: Soil
Units: mg/kg wet
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
trans-1,2-Dichloroethene	ND (0.200)	0.0600	8260B		1	10/31/19 12:41	C9J0621	CJ93128
trans-1,3-Dichloropropene	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Trichloroethene	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Trichlorofluoromethane	ND (0.200)	0.0800	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Vinyl Acetate	ND (0.200)	0.100	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Vinyl Chloride	ND (0.200)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Xylene O	ND (0.200)	0.0200	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Xylene P,M	ND (0.400)	0.0400	8260B		1	10/31/19 12:41	C9J0621	CJ93128
Xylenes (Total)	ND (0.400)		8260B		1	10/31/19 12:41		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*116 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*110 %*		*70-130*
Surrogate: Dibromofluoromethane	*115 %*		*70-130*
Surrogate: Toluene-d8	*110 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19J1002

Quality Control Data

Total Metals

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch CJ93161 - 3050B										
Blank										
Antimony	ND	5.00	mg/kg wet							
Arsenic	ND	2.50	mg/kg wet							
Beryllium	ND	0.11	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.00	mg/kg wet							
Copper	ND	2.50	mg/kg wet							
Lead	ND	5.00	mg/kg wet							
Nickel	ND	2.50	mg/kg wet							
Selenium	ND	5.00	mg/kg wet							
Silver	ND	0.50	mg/kg wet							
Thallium	ND	5.00	mg/kg wet							
Zinc	ND	2.50	mg/kg wet							
LCS										
Antimony	35.6	16.1	mg/kg wet	51.30		69	0-302			
Arsenic	184	8.06	mg/kg wet	202.0		91	80-120			
Beryllium	44.7	0.35	mg/kg wet	52.10		86	80-120			
Cadmium	123	1.61	mg/kg wet	149.0		83	80-120			
Chromium	156	3.23	mg/kg wet	182.0		86	80-120			
Copper	197	8.06	mg/kg wet	225.0		88	80-120			
Lead	285	16.1	mg/kg wet	333.0		85	80-120			
Nickel	146	8.06	mg/kg wet	167.0		87	80-120			
Selenium	152	16.1	mg/kg wet	169.0		90	80-120			
Silver	41.2	1.61	mg/kg wet	48.90		84	80-120			
Thallium	64.0	16.1	mg/kg wet	82.30		78	62-139			
Zinc	390	8.06	mg/kg wet	459.0		85	80-120			
LCS Dup										
Antimony	36.9	16.4	mg/kg wet	51.30		72	0-302	3	20	
Arsenic	191	8.20	mg/kg wet	202.0		95	80-120	4	20	
Beryllium	47.1	0.36	mg/kg wet	52.10		90	80-120	5	20	
Cadmium	129	1.64	mg/kg wet	149.0		87	80-120	5	20	
Chromium	165	3.28	mg/kg wet	182.0		91	80-120	5	20	
Copper	209	8.20	mg/kg wet	225.0		93	80-120	6	20	
Lead	298	16.4	mg/kg wet	333.0		89	80-120	4	20	
Nickel	153	8.20	mg/kg wet	167.0		92	80-120	5	20	
Selenium	156	16.4	mg/kg wet	169.0		92	80-120	3	20	
Silver	43.5	1.64	mg/kg wet	48.90		89	80-120	6	20	
Thallium	68.2	16.4	mg/kg wet	82.30		83	62-139	6	20	
Zinc	406	8.20	mg/kg wet	459.0		88	80-120	4	20	
Batch CJ93162 - 7471B										
Blank										
Mercury	ND	0.033	mg/kg wet							
LCS										
Mercury	7.91	0.609	mg/kg wet	7.760		102	80-120			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19J1002

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CJ93162 - 7471B										
LCS Dup										
Mercury	8.26	0.514	mg/kg wet	7.760		106	80-120	4	20	
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ93128 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,1-Trichloroethane	ND	0.200	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,2-Trichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethene	ND	0.200	mg/kg wet							
1,1-Dichloropropene	ND	0.200	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,3-Trichloropropane	ND	0.200	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.200	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	1.00	mg/kg wet							
1,2-Dibromoethane	ND	0.200	mg/kg wet							
1,2-Dichlorobenzene	ND	0.200	mg/kg wet							
1,2-Dichloroethane	ND	0.200	mg/kg wet							
1,2-Dichloropropane	ND	0.200	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.200	mg/kg wet							
1,3-Dichlorobenzene	ND	0.200	mg/kg wet							
1,3-Dichloropropane	ND	0.200	mg/kg wet							
1,4-Dichlorobenzene	ND	0.200	mg/kg wet							
1,4-Dioxane - Screen	ND	40.0	mg/kg wet							
1-Chlorohexane	ND	0.200	mg/kg wet							
2,2-Dichloropropane	ND	0.200	mg/kg wet							
2-Butanone	ND	1.00	mg/kg wet							
2-Chlorotoluene	ND	0.200	mg/kg wet							
2-Hexanone	ND	1.00	mg/kg wet							
4-Chlorotoluene	ND	0.200	mg/kg wet							
4-Isopropyltoluene	ND	0.200	mg/kg wet							
4-Methyl-2-Pentanone	ND	1.00	mg/kg wet							
Acetone	ND	1.00	mg/kg wet							
Benzene	ND	0.200	mg/kg wet							
Bromobenzene	ND	0.200	mg/kg wet							
Bromochloromethane	ND	0.200	mg/kg wet							
Bromodichloromethane	ND	0.200	mg/kg wet							
Bromoform	ND	0.200	mg/kg wet							
Bromomethane	ND	0.200	mg/kg wet							
Carbon Disulfide	ND	0.200	mg/kg wet							
Carbon Tetrachloride	ND	0.200	mg/kg wet							
Chlorobenzene	ND	0.200	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19J1002

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ93128 - 5035										
Chloroethane	ND	0.200	mg/kg wet							
Chloroform	ND	0.200	mg/kg wet							
Chloromethane	ND	0.200	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.200	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Dibromochloromethane	ND	0.200	mg/kg wet							
Dibromomethane	ND	0.200	mg/kg wet							
Dichlorodifluoromethane	ND	0.200	mg/kg wet							
Diethyl Ether	ND	0.200	mg/kg wet							
Di-isopropyl ether	ND	0.200	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.200	mg/kg wet							
Ethylbenzene	ND	0.200	mg/kg wet							
Hexachlorobutadiene	ND	0.200	mg/kg wet							
Isopropylbenzene	ND	0.200	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.200	mg/kg wet							
Methylene Chloride	ND	0.400	mg/kg wet							
Naphthalene	ND	0.200	mg/kg wet							
n-Butylbenzene	ND	0.200	mg/kg wet							
n-Propylbenzene	ND	0.200	mg/kg wet							
sec-Butylbenzene	ND	0.200	mg/kg wet							
Styrene	ND	0.200	mg/kg wet							
tert-Butylbenzene	ND	0.200	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.200	mg/kg wet							
Tetrachloroethene	ND	0.200	mg/kg wet							
Tetrahydrofuran	ND	1.00	mg/kg wet							
Toluene	ND	0.200	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.200	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Trichloroethene	ND	0.200	mg/kg wet							
Trichlorofluoromethane	ND	0.200	mg/kg wet							
Vinyl Acetate	ND	0.200	mg/kg wet							
Vinyl Chloride	ND	0.200	mg/kg wet							
Xylene O	ND	0.200	mg/kg wet							
Xylene P,M	ND	0.400	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*5.16*		mg/kg wet	*5.000*		*103*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*4.85*		mg/kg wet	*5.000*		*97*	*70-130*			
Surrogate: Dibromofluoromethane	*5.03*		mg/kg wet	*5.000*		*101*	*70-130*			
Surrogate: Toluene-d8	*4.87*		mg/kg wet	*5.000*		*97*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	1.84	0.200	mg/kg wet	2.000		92	70-130			
1,1,1-Trichloroethane	2.00	0.200	mg/kg wet	2.000		100	70-130			
1,1,2,2-Tetrachloroethane	2.04	0.200	mg/kg wet	2.000		102	70-130			
1,1,2-Trichloroethane	2.04	0.200	mg/kg wet	2.000		102	70-130			
1,1-Dichloroethane	2.17	0.200	mg/kg wet	2.000		109	70-130			
1,1-Dichloroethene	2.20	0.200	mg/kg wet	2.000		110	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ93128 - 5035										
1,1-Dichloropropene	2.11	0.200	mg/kg wet	2.000		106	70-130			
1,2,3-Trichlorobenzene	2.10	0.200	mg/kg wet	2.000		105	70-130			
1,2,3-Trichloropropane	2.22	0.200	mg/kg wet	2.000		111	70-130			
1,2,4-Trichlorobenzene	2.06	0.200	mg/kg wet	2.000		103	70-130			
1,2,4-Trimethylbenzene	2.08	0.200	mg/kg wet	2.000		104	70-130			
1,2-Dibromo-3-Chloropropane	1.96	1.00	mg/kg wet	2.000		98	70-130			
1,2-Dibromoethane	1.95	0.200	mg/kg wet	2.000		98	70-130			
1,2-Dichlorobenzene	1.98	0.200	mg/kg wet	2.000		99	70-130			
1,2-Dichloroethane	2.13	0.200	mg/kg wet	2.000		107	70-130			
1,2-Dichloropropane	2.15	0.200	mg/kg wet	2.000		108	70-130			
1,3,5-Trimethylbenzene	2.04	0.200	mg/kg wet	2.000		102	70-130			
1,3-Dichlorobenzene	1.98	0.200	mg/kg wet	2.000		99	70-130			
1,3-Dichloropropane	2.12	0.200	mg/kg wet	2.000		106	70-130			
1,4-Dichlorobenzene	2.05	0.200	mg/kg wet	2.000		103	70-130			
1,4-Dioxane - Screen	41.6	40.0	mg/kg wet	40.00		104	44-241			
1-Chlorohexane	1.84	0.200	mg/kg wet	2.000		92	70-130			
2,2-Dichloropropane	2.17	0.200	mg/kg wet	2.000		108	70-130			
2-Butanone	10.8	1.00	mg/kg wet	10.00		108	70-130			
2-Chlorotoluene	2.02	0.200	mg/kg wet	2.000		101	70-130			
2-Hexanone	9.56	1.00	mg/kg wet	10.00		96	70-130			
4-Chlorotoluene	2.04	0.200	mg/kg wet	2.000		102	70-130			
4-Isopropyltoluene	1.95	0.200	mg/kg wet	2.000		98	70-130			
4-Methyl-2-Pentanone	10.9	1.00	mg/kg wet	10.00		109	70-130			
Acetone	10.4	1.00	mg/kg wet	10.00		104	70-130			
Benzene	2.09	0.200	mg/kg wet	2.000		104	70-130			
Bromobenzene	1.96	0.200	mg/kg wet	2.000		98	70-130			
Bromochloromethane	2.14	0.200	mg/kg wet	2.000		107	70-130			
Bromodichloromethane	2.02	0.200	mg/kg wet	2.000		101	70-130			
Bromoform	1.72	0.200	mg/kg wet	2.000		86	70-130			
Bromomethane	1.55	0.200	mg/kg wet	2.000		78	70-130			
Carbon Disulfide	2.05	0.200	mg/kg wet	2.000		102	70-130			
Carbon Tetrachloride	2.01	0.200	mg/kg wet	2.000		100	70-130			
Chlorobenzene	1.87	0.200	mg/kg wet	2.000		94	70-130			
Chloroethane	1.84	0.200	mg/kg wet	2.000		92	70-130			
Chloroform	2.11	0.200	mg/kg wet	2.000		106	70-130			
Chloromethane	1.81	0.200	mg/kg wet	2.000		91	70-130			
cis-1,2-Dichloroethene	2.05	0.200	mg/kg wet	2.000		103	70-130			
cis-1,3-Dichloropropene	1.98	0.200	mg/kg wet	2.000		99	70-130			
Dibromochloromethane	1.87	0.200	mg/kg wet	2.000		94	70-130			
Dibromomethane	2.11	0.200	mg/kg wet	2.000		106	70-130			
Dichlorodifluoromethane	1.91	0.200	mg/kg wet	2.000		96	70-130			
Diethyl Ether	1.96	0.200	mg/kg wet	2.000		98	70-130			
Di-isopropyl ether	1.97	0.200	mg/kg wet	2.000		99	70-130			
Ethyl tertiary-butyl ether	1.94	0.200	mg/kg wet	2.000		97	70-130			
Ethylbenzene	1.92	0.200	mg/kg wet	2.000		96	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19J1002

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ93128 - 5035										
Hexachlorobutadiene	2.53	0.200	mg/kg wet	2.000		127	70-130			
Isopropylbenzene	1.95	0.200	mg/kg wet	2.000		98	70-130			
Methyl tert-Butyl Ether	2.01	0.200	mg/kg wet	2.000		101	70-130			
Methylene Chloride	2.11	0.400	mg/kg wet	2.000		105	70-130			
Naphthalene	1.78	0.200	mg/kg wet	2.000		89	70-130			
n-Butylbenzene	2.04	0.200	mg/kg wet	2.000		102	70-130			
n-Propylbenzene	1.96	0.200	mg/kg wet	2.000		98	70-130			
sec-Butylbenzene	2.03	0.200	mg/kg wet	2.000		102	70-130			
Styrene	1.82	0.200	mg/kg wet	2.000		91	70-130			
tert-Butylbenzene	1.93	0.200	mg/kg wet	2.000		96	70-130			
Tertiary-amyl methyl ether	1.96	0.200	mg/kg wet	2.000		98	70-130			
Tetrachloroethene	1.77	0.200	mg/kg wet	2.000		88	70-130			
Tetrahydrofuran	2.26	1.00	mg/kg wet	2.000		113	70-130			
Toluene	2.00	0.200	mg/kg wet	2.000		100	70-130			
trans-1,2-Dichloroethene	2.15	0.200	mg/kg wet	2.000		107	70-130			
trans-1,3-Dichloropropene	2.01	0.200	mg/kg wet	2.000		100	70-130			
Trichloroethene	2.00	0.200	mg/kg wet	2.000		100	70-130			
Trichlorofluoromethane	2.19	0.200	mg/kg wet	2.000		110	70-130			
Vinyl Acetate	2.11	0.200	mg/kg wet	2.000		106	70-130			
Vinyl Chloride	1.71	0.200	mg/kg wet	2.000		86	70-130			
Xylene O	1.89	0.200	mg/kg wet	2.000		95	70-130			
Xylene P,M	3.74	0.400	mg/kg wet	4.000		94	70-130			
Surrogate: 1,2-Dichloroethane-d4	*4.98*		mg/kg wet	*5.000*		*100*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*5.24*		mg/kg wet	*5.000*		*105*	*70-130*			
Surrogate: Dibromofluoromethane	*5.10*		mg/kg wet	*5.000*		*102*	*70-130*			
Surrogate: Toluene-d8	*4.72*		mg/kg wet	*5.000*		*94*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	1.86	0.200	mg/kg wet	2.000		93	70-130	1	25	
1,1,1-Trichloroethane	2.01	0.200	mg/kg wet	2.000		100	70-130	0.4	25	
1,1,2,2-Tetrachloroethane	2.02	0.200	mg/kg wet	2.000		101	70-130	1	25	
1,1,2-Trichloroethane	1.90	0.200	mg/kg wet	2.000		95	70-130	8	25	
1,1-Dichloroethane	2.12	0.200	mg/kg wet	2.000		106	70-130	2	25	
1,1-Dichloroethene	2.14	0.200	mg/kg wet	2.000		107	70-130	3	25	
1,1-Dichloropropene	2.06	0.200	mg/kg wet	2.000		103	70-130	2	25	
1,2,3-Trichlorobenzene	2.04	0.200	mg/kg wet	2.000		102	70-130	3	25	
1,2,3-Trichloropropane	2.15	0.200	mg/kg wet	2.000		108	70-130	3	25	
1,2,4-Trichlorobenzene	1.96	0.200	mg/kg wet	2.000		98	70-130	5	25	
1,2,4-Trimethylbenzene	2.01	0.200	mg/kg wet	2.000		100	70-130	3	25	
1,2-Dibromo-3-Chloropropane	1.67	1.00	mg/kg wet	2.000		83	70-130	16	25	
1,2-Dibromoethane	2.00	0.200	mg/kg wet	2.000		100	70-130	2	25	
1,2-Dichlorobenzene	1.93	0.200	mg/kg wet	2.000		96	70-130	3	25	
1,2-Dichloroethane	2.08	0.200	mg/kg wet	2.000		104	70-130	2	25	
1,2-Dichloropropane	2.11	0.200	mg/kg wet	2.000		105	70-130	2	25	
1,3,5-Trimethylbenzene	2.01	0.200	mg/kg wet	2.000		101	70-130	1	25	
1,3-Dichlorobenzene	2.03	0.200	mg/kg wet	2.000		101	70-130	2	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19J1002

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ93128 - 5035										
1,3-Dichloropropane	2.19	0.200	mg/kg wet	2.000		110	70-130	4	25	
1,4-Dichlorobenzene	2.01	0.200	mg/kg wet	2.000		100	70-130	2	25	
1,4-Dioxane - Screen	ND	40.0	mg/kg wet	40.00		0	44-241	200	200	B-
1-Chlorohexane	1.84	0.200	mg/kg wet	2.000		92	70-130	0.2	25	
2,2-Dichloropropane	2.08	0.200	mg/kg wet	2.000		104	70-130	4	25	
2-Butanone	9.97	1.00	mg/kg wet	10.00		100	70-130	8	25	
2-Chlorotoluene	2.04	0.200	mg/kg wet	2.000		102	70-130	1	25	
2-Hexanone	9.74	1.00	mg/kg wet	10.00		97	70-130	2	25	
4-Chlorotoluene	2.01	0.200	mg/kg wet	2.000		101	70-130	1	25	
4-Isopropyltoluene	1.93	0.200	mg/kg wet	2.000		96	70-130	1	25	
4-Methyl-2-Pentanone	9.64	1.00	mg/kg wet	10.00		96	70-130	12	25	
Acetone	9.46	1.00	mg/kg wet	10.00		95	70-130	10	25	
Benzene	2.07	0.200	mg/kg wet	2.000		104	70-130	0.8	25	
Bromobenzene	2.01	0.200	mg/kg wet	2.000		100	70-130	2	25	
Bromochloromethane	2.02	0.200	mg/kg wet	2.000		101	70-130	5	25	
Bromodichloromethane	1.92	0.200	mg/kg wet	2.000		96	70-130	5	25	
Bromoform	1.70	0.200	mg/kg wet	2.000		85	70-130	1	25	
Bromomethane	1.71	0.200	mg/kg wet	2.000		86	70-130	10	25	
Carbon Disulfide	2.02	0.200	mg/kg wet	2.000		101	70-130	1	25	
Carbon Tetrachloride	1.99	0.200	mg/kg wet	2.000		99	70-130	1	25	
Chlorobenzene	1.94	0.200	mg/kg wet	2.000		97	70-130	3	25	
Chloroethane	1.85	0.200	mg/kg wet	2.000		93	70-130	0.4	25	
Chloroform	2.10	0.200	mg/kg wet	2.000		105	70-130	0.7	25	
Chloromethane	1.73	0.200	mg/kg wet	2.000		87	70-130	5	25	
cis-1,2-Dichloroethene	2.05	0.200	mg/kg wet	2.000		102	70-130	0.2	25	
cis-1,3-Dichloropropene	1.90	0.200	mg/kg wet	2.000		95	70-130	4	25	
Dibromochloromethane	1.87	0.200	mg/kg wet	2.000		94	70-130	0	25	
Dibromomethane	2.01	0.200	mg/kg wet	2.000		100	70-130	5	25	
Dichlorodifluoromethane	1.79	0.200	mg/kg wet	2.000		89	70-130	7	25	
Diethyl Ether	1.83	0.200	mg/kg wet	2.000		91	70-130	7	25	
Di-isopropyl ether	1.93	0.200	mg/kg wet	2.000		97	70-130	2	25	
Ethyl tertiary-butyl ether	1.85	0.200	mg/kg wet	2.000		93	70-130	5	25	
Ethylbenzene	1.97	0.200	mg/kg wet	2.000		98	70-130	2	25	
Hexachlorobutadiene	2.41	0.200	mg/kg wet	2.000		121	70-130	5	25	
Isopropylbenzene	2.02	0.200	mg/kg wet	2.000		101	70-130	4	25	
Methyl tert-Butyl Ether	1.90	0.200	mg/kg wet	2.000		95	70-130	6	25	
Methylene Chloride	2.16	0.400	mg/kg wet	2.000		108	70-130	2	25	
Naphthalene	1.70	0.200	mg/kg wet	2.000		85	70-130	5	25	
n-Butylbenzene	2.11	0.200	mg/kg wet	2.000		106	70-130	4	25	
n-Propylbenzene	1.98	0.200	mg/kg wet	2.000		99	70-130	1	25	
sec-Butylbenzene	1.99	0.200	mg/kg wet	2.000		100	70-130	2	25	
Styrene	1.84	0.200	mg/kg wet	2.000		92	70-130	1	25	
tert-Butylbenzene	1.95	0.200	mg/kg wet	2.000		97	70-130	0.8	25	
Tertiary-amyl methyl ether	1.90	0.200	mg/kg wet	2.000		95	70-130	4	25	
Tetrachloroethene	1.86	0.200	mg/kg wet	2.000		93	70-130	5	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ93128 - 5035										
Tetrahydrofuran	2.15	1.00	mg/kg wet	2.000		108	70-130	5	25	
Toluene	1.98	0.200	mg/kg wet	2.000		99	70-130	1	25	
trans-1,2-Dichloroethene	2.02	0.200	mg/kg wet	2.000		101	70-130	6	25	
trans-1,3-Dichloropropene	1.94	0.200	mg/kg wet	2.000		97	70-130	4	25	
Trichloroethene	1.96	0.200	mg/kg wet	2.000		98	70-130	2	25	
Trichlorofluoromethane	2.19	0.200	mg/kg wet	2.000		109	70-130	0.09	25	
Vinyl Acetate	2.03	0.200	mg/kg wet	2.000		102	70-130	4	25	
Vinyl Chloride	1.73	0.200	mg/kg wet	2.000		86	70-130	1	25	
Xylene O	1.97	0.200	mg/kg wet	2.000		99	70-130	4	25	
Xylene P,M	3.85	0.400	mg/kg wet	4.000		96	70-130	3	25	
Surrogate: 1,2-Dichloroethane-d4	*4.95*		mg/kg wet	*5.000*		*99*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*5.33*		mg/kg wet	*5.000*		*107*	*70-130*			
Surrogate: Dibromofluoromethane	*5.08*		mg/kg wet	*5.000*		*102*	*70-130*			
Surrogate: Toluene-d8	*4.97*		mg/kg wet	*5.000*		*99*	*70-130*			
8082A Polychlorinated Biphenyls (PCB)										
Batch CJ93010 - 3540C										
Blank										
Aroclor 1016	ND	0.05	mg/kg wet							
Aroclor 1016 [2C]	ND	0.05	mg/kg wet							
Aroclor 1221	ND	0.05	mg/kg wet							
Aroclor 1221 [2C]	ND	0.05	mg/kg wet							
Aroclor 1232	ND	0.05	mg/kg wet							
Aroclor 1232 [2C]	ND	0.05	mg/kg wet							
Aroclor 1242	ND	0.05	mg/kg wet							
Aroclor 1242 [2C]	ND	0.05	mg/kg wet							
Aroclor 1248	ND	0.05	mg/kg wet							
Aroclor 1248 [2C]	ND	0.05	mg/kg wet							
Aroclor 1254	ND	0.05	mg/kg wet							
Aroclor 1254 [2C]	ND	0.05	mg/kg wet							
Aroclor 1260	ND	0.05	mg/kg wet							
Aroclor 1260 [2C]	ND	0.05	mg/kg wet							
Aroclor 1262	ND	0.05	mg/kg wet							
Aroclor 1262 [2C]	ND	0.05	mg/kg wet							
Aroclor 1268	ND	0.05	mg/kg wet							
Aroclor 1268 [2C]	ND	0.05	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0214*		mg/kg wet	*0.02500*		*86*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0209*		mg/kg wet	*0.02500*		*84*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0161*		mg/kg wet	*0.02500*		*64*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0167*		mg/kg wet	*0.02500*		*67*	*30-150*			
LCS										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		96	40-140			
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		97	40-140			
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		98	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19J1002

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CJ93010 - 3540C										
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		100	40-140			
Surrogate: Decachlorobiphenyl	*0.0211*		mg/kg wet	*0.02500*		*84*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0215*		mg/kg wet	*0.02500*		*86*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0179*		mg/kg wet	*0.02500*		*71*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0172*		mg/kg wet	*0.02500*		*69*	*30-150*			
LCS Dup										
Aroclor 1016	0.4	0.05	mg/kg wet	0.5000		87	40-140	10	30	
Aroclor 1016 [2C]	0.4	0.05	mg/kg wet	0.5000		87	40-140	10	30	
Aroclor 1260	0.4	0.05	mg/kg wet	0.5000		88	40-140	11	30	
Aroclor 1260 [2C]	0.4	0.05	mg/kg wet	0.5000		90	40-140	11	30	
Surrogate: Decachlorobiphenyl	*0.0190*		mg/kg wet	*0.02500*		*76*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0193*		mg/kg wet	*0.02500*		*77*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0159*		mg/kg wet	*0.02500*		*64*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0152*		mg/kg wet	*0.02500*		*61*	*30-150*			
8100M Total Petroleum Hydrocarbons										
Batch CJ92911 - 3546										
Blank										
Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							
Surrogate: O-Terphenyl	*5.07*		mg/kg wet	*5.000*		*101*	*40-140*			
LCS										
Decane (C10)	1.9	0.2	mg/kg wet	2.500		75	40-140			
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		83	40-140			
Eicosane (C20)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		99	40-140			
Hexadecane (C16)	2.3	0.2	mg/kg wet	2.500		90	40-140			
Nonadecane (C19)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		66	30-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19J1002

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CJ92911 - 3546										
Octacosane (C28)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Octadecane (C18)	2.3	0.2	mg/kg wet	2.500		94	40-140			
Tetracosane (C24)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		87	40-140			
Total Petroleum Hydrocarbons	32.1	37.5	mg/kg wet	35.00		92	40-140			
Triacontane (C30)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Surrogate: O-Terphenyl	*5.18*		mg/kg wet	*5.000*		*104*	*40-140*			
LCS Dup										
Decane (C10)	1.9	0.2	mg/kg wet	2.500		77	40-140	2	25	
Docosane (C22)	2.6	0.2	mg/kg wet	2.500		103	40-140	3	25	
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		85	40-140	2	25	
Eicosane (C20)	2.5	0.2	mg/kg wet	2.500		100	40-140	3	25	
Hexacosane (C26)	2.6	0.2	mg/kg wet	2.500		103	40-140	3	25	
Hexadecane (C16)	2.3	0.2	mg/kg wet	2.500		92	40-140	2	25	
Nonadecane (C19)	2.6	0.2	mg/kg wet	2.500		103	40-140	2	25	
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		67	30-140	2	25	
Octacosane (C28)	2.6	0.2	mg/kg wet	2.500		104	40-140	3	25	
Octadecane (C18)	2.4	0.2	mg/kg wet	2.500		96	40-140	2	25	
Tetracosane (C24)	2.6	0.2	mg/kg wet	2.500		104	40-140	4	25	
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		89	40-140	2	25	
Total Petroleum Hydrocarbons	33.0	37.5	mg/kg wet	35.00		94	40-140	3	25	
Triacontane (C30)	2.6	0.2	mg/kg wet	2.500		103	40-140	3	25	
Surrogate: O-Terphenyl	*5.24*		mg/kg wet	*5.000*		*105*	*40-140*			
8270D Polynuclear Aromatic Hydrocarbons										
Batch CJ92909 - 3546										
Blank										
2-Methylnaphthalene	ND	0.333	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19J1002

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Polynuclear Aromatic Hydrocarbons										
Batch CJ92909 - 3546										
Pyrene	ND	0.333	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*2.19*		mg/kg wet	*3.333*		*66*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.24*		mg/kg wet	*3.333*		*67*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.23*		mg/kg wet	*3.333*		*67*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.37*		mg/kg wet	*3.333*		*101*	*30-130*			
LCS										
2-Methylnaphthalene	2.16	0.333	mg/kg wet	3.333		65	40-140			
Acenaphthene	2.34	0.333	mg/kg wet	3.333		70	40-140			
Acenaphthylene	2.38	0.333	mg/kg wet	3.333		71	40-140			
Anthracene	2.86	0.333	mg/kg wet	3.333		86	40-140			
Benzo(a)anthracene	3.03	0.333	mg/kg wet	3.333		91	40-140			
Benzo(a)pyrene	2.87	0.167	mg/kg wet	3.333		86	40-140			
Benzo(b)fluoranthene	2.94	0.333	mg/kg wet	3.333		88	40-140			
Benzo(g,h,i)perylene	3.30	0.333	mg/kg wet	3.333		99	40-140			
Benzo(k)fluoranthene	2.89	0.333	mg/kg wet	3.333		87	40-140			
Chrysene	2.91	0.167	mg/kg wet	3.333		87	40-140			
Dibenzo(a,h)Anthracene	3.08	0.167	mg/kg wet	3.333		92	40-140			
Fluoranthene	3.01	0.333	mg/kg wet	3.333		90	40-140			
Fluorene	2.77	0.333	mg/kg wet	3.333		83	40-140			
Indeno(1,2,3-cd)Pyrene	3.18	0.333	mg/kg wet	3.333		95	40-140			
Naphthalene	1.96	0.333	mg/kg wet	3.333		59	40-140			
Phenanthrene	2.77	0.333	mg/kg wet	3.333		83	40-140			
Pyrene	2.90	0.333	mg/kg wet	3.333		87	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*1.95*		mg/kg wet	*3.333*		*59*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.18*		mg/kg wet	*3.333*		*65*	*30-130*			
Surrogate: Nitrobenzene-d5	*1.99*		mg/kg wet	*3.333*		*60*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.96*		mg/kg wet	*3.333*		*89*	*30-130*			
LCS Dup										
2-Methylnaphthalene	2.21	0.333	mg/kg wet	3.333		66	40-140	2	30	
Acenaphthene	2.31	0.333	mg/kg wet	3.333		69	40-140	1	30	
Acenaphthylene	2.34	0.333	mg/kg wet	3.333		70	40-140	2	30	
Anthracene	2.70	0.333	mg/kg wet	3.333		81	40-140	6	30	
Benzo(a)anthracene	2.85	0.333	mg/kg wet	3.333		85	40-140	6	30	
Benzo(a)pyrene	2.67	0.167	mg/kg wet	3.333		80	40-140	7	30	
Benzo(b)fluoranthene	2.72	0.333	mg/kg wet	3.333		82	40-140	8	30	
Benzo(g,h,i)perylene	3.03	0.333	mg/kg wet	3.333		91	40-140	8	30	
Benzo(k)fluoranthene	2.69	0.333	mg/kg wet	3.333		81	40-140	7	30	
Chrysene	2.75	0.167	mg/kg wet	3.333		83	40-140	6	30	
Dibenzo(a,h)Anthracene	2.86	0.167	mg/kg wet	3.333		86	40-140	8	30	
Fluoranthene	2.79	0.333	mg/kg wet	3.333		84	40-140	8	30	
Fluorene	2.64	0.333	mg/kg wet	3.333		79	40-140	5	30	
Indeno(1,2,3-cd)Pyrene	2.93	0.333	mg/kg wet	3.333		88	40-140	8	30	
Naphthalene	2.10	0.333	mg/kg wet	3.333		63	40-140	7	30	
Phenanthrene	2.62	0.333	mg/kg wet	3.333		78	40-140	6	30	
Pyrene	2.79	0.333	mg/kg wet	3.333		84	40-140	4	30	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19J1002

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Polynuclear Aromatic Hydrocarbons										
Batch CJ92909 - 3546										
Surrogate: 1,2-Dichlorobenzene-d4	*2.06*		mg/kg wet	*3.333*		*62*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.11*		mg/kg wet	*3.333*		*63*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.06*		mg/kg wet	*3.333*		*62*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.77*		mg/kg wet	*3.333*		*83*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company ESS Laboratory Work Order: 19J1002

Notes and Definitions

U	Analyte included in the analysis, but not detected
J	Reported between MDL and MRL
D	Diluted.
B-	Blank Spike recovery is below lower control limit (B-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Seville Dyeing Company

ESS Laboratory Work Order: 19J1002

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

Shipped/Delivered Via: ESS Courier

ESS Project ID: 19J1002
Date Received: 10/28/2019
Project Due Date: 11/4/2019
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 3.0 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / (NA)
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? Yes / (No)
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? (Yes) / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? (Yes) / No / NA

13. Are the samples properly preserved? (Yes) / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	405898	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	405902	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	405897	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
02	405901	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	405896	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
03	405900	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	405895	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
04	405899	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
05	405894	Yes	NA	Yes	VOA Vial - Methanol	MeOH	

2nd Review

Were all containers scanned into storage/lab? Initials SA
Are barcode labels on correct containers? (Yes) / No
Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA
Are all Hex Chrome stickers attached? Yes / No / NA
Are all QC stickers attached? Yes / No / NA
Are VOA stickers attached if bubbles noted? Yes / No / NA

Completed By: Date & Time: 10/28/19 1701
Reviewed

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA, Providence, RI - GZA/HDM

ESS Project ID: 19J1002

Date Received: 10/28/2019

By: Date & Time: 10/28/19 1753

Delivered By: 10/28/19 1753

CHAIN OF CUSTODY

ESS Laboratory
Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

ESS Lab # 1951002

Reporting Limits

Electonic Deliverables: ☒ Data Checker ☒ Excel ☒ Other (Please Specify →) PDF

Turn Time: 5 Days

Regulatory State: RI

Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

Company Name: GZA

Project #: 34502-04

Project Name: Seville Dyeing Company

Address: 198 Valley St, Suite 300

Contact Person: Richard Carlone

City: Providence

State: RI

Zip Code: 02909

PO #:

Telephone Number:

FAX Number:

Email Address: richard.carlone@gza.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: VOC MS	PAHs	TPH	PCB	RP-13 Metals
1	10/28/19	1010	Grab	Soil	MW-15 (0-2')	X	X	X	X	X
2	10/28/19	1150	Grab	Soil	B-14 (2-4')	X	X	X	X	X
3	10/28/19	1250	Grab	Soil	B-13 (2-4')	X	X	X	X	X
5	10/28/19	0600			Trip Blank	X				
4	10/28/19	0900	Grab	Soil	BD10282019	X	X	X	X	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

	VOC MS	PAHs	TPH	PCB	RP-13 Metals
Container Type:	V	AG	AG	AG	AG
Container Volume:	7	10	10	10	10
Preservation Code:	6	1	1	1	1
Number of Containers per Sample:	1	← 1			→

Laboratory Use Only

Cooler Present: Y ○ Drop Off

Seals Intact: Y ○ Pickup

Cooler Temperature: 3.0 °C

Sampled by: Raven Hamer

Comments: Please specify "Other" preservative and containers types in this space

samples billed to RIDEM – Rachel Simpson

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
10/28/19 1630	10/28/19 1630		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

APPENDIX D

FIELD SAMPLING LOGS

GROUNDWATER SAMPLING DATA SHEET

File No. 34502.04
Project: RIDEM - Seville Dyeing Company
Location: City: Woonsocket State: RI
Weather: 52, Cloudy

Well ID: MW-14
Sample Date: 11/22/2019
Sampler's Name: Rowan Hayes

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 11/22/19 10:20

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet):	32.00	Standing Water in Well (feet):	9.55
Depth to LNAPL (feet):	--	Well Diameter (in.)	2
Depth to Water (feet):	22.45	Sample Depth (feet BGS):	29.5
Depth to DNAPL (feet):	--	Standpipe: TPVC to Ground Surface (feet)	--
Well Screened Interval (feet BGS):	24.5 to 34.5	Roadbox: TPVC to Ground Surface (feet)	--

Well Condition: **Protective Casing-** [ ] Poor [X] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [X] Yes [ ] No **Well ID-** [ ] Yes [X] No **Concrete Collar-** [X] Yes [ ] No **Well-** [ ] Poor [X] Good

EQUIPMENT

Sample Method: [ ] Bail [X] Pump / [X] Low Flow

Pump Type: Geotech Geopump Model Ii No. Rental
Flow-Thru Cell Vol (mL): 500

Meter Type: Ysi Pro Dss No. Rental

INSTRUMENT MEASUREMENTS:

Start time: 10:40 **Stop time:** 12:04

		1	2	3	4	5	6	7	8
Time: (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvolts) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (mS/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (ºC) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes
10:55	22.45	-52.7	6.46	464.2	0.56	12.3	208.72	<500	
11:05	22.45	-47.3	6.46	456.8	0.41	12.4	233.22	<500	
11:15	22.45	-38.3	6.45	450.3	0.34	12.6	105.31	<500	
11:25	22.45	-44.5	6.47	454.2	0.32	12.4	48.69	<500	
11:55	22.45	-42.3	6.47	450.5	0.29	12.7	9.01	<500	
11:58	22.45	-42.9	6.47	450.2	0.29	12.7	4.43	<500	
12:01	22.45	-42.7	6.47	450.0	0.28	12.7	4.77	<500	
12:04	22.45	-42.3	6.47	349.9	0.28	12.7	4.43	<500	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 12:04

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40 mL	HCl	Ice

Sample observations:

Color: None Odor: None Clarity: Clear

Total Purge Volume: 3.5 gallons **Tubing Volume:**

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

BD11222019 taken here.

GROUNDWATER SAMPLING DATA SHEET

File No. 34502.04
Project: RIDEM - Seville Dyeing Company
Location: City: Woonsocket State: RI
Weather: 52, Cloudy

Well ID: MW-16
Sample Date: 11/22/2019
Sampler's Name: Rowan Hayes

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 11/22/19 8:30

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet):	18.45	Standing Water in Well (feet):	4.77
Depth to LNAPL (feet):	--	Well Diameter (in.)	2
Depth to Water (feet):	13.68	Sample Depth (feet BGS):	15
Depth to DNAPL (feet):	--	Standpipe: TPVC to Ground Surface (feet)	--
Well Screened Interval (feet BGS):	5 to 20	Roadbox: TPVC to Ground Surface (feet)	--

Well Condition: **Protective Casing-** [ ] Poor [X] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [X] Yes [ ] No **Well ID-** [ ] Yes [X] No **Concrete Collar-** [X] Yes [ ] No **Well-** [ ] Poor [X] Good

EQUIPMENT

Sample Method: [ ] Bail [X] Pump / [X] Low Flow

Pump Type: Geotech Geopump Model Ii No. Rental
Flow-Thru Cell Vol (mL): 500

Meter Type: Ysi Pro Dss No. Rental

INSTRUMENT MEASUREMENTS:

Start time: 12:40 **Stop time:** 13:04

		1	2	3	4	5	6	7	8
Time: (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvolts) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (mS/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (ºC) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes
12:50	13.70	-61.0	6.53	1115	0.62	14.0	9.72	<500	
12:58	13.70	-62.4	6.50	1115	0.42	14.0	4.27	<500	
13:01	13.70	-63.6	6.50	1114	0.39	14.0	3.03	<500	
13:04	13.70	-65.3	6.50	1114	0.31	14.1	2.55	<500	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 13:04

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40 mL	HCl	Ice

Sample observations:

Color: None Odor: Petroleum Clarity: Clear

Total Purge Volume: 2 gallons

Tubing Volume:

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

Sheen observed in purge water.

APPENDIX E

BIOVENT PILOT TEST

Vent Pilot Test

Seville Dyeing
117 & 229 First Avenue
Woonsocket, Rhode Island

Date	Well I.D.	Time	Vacuum (inches of H2O)	Vacuum Diff. (inches of H2O)	Flow (CFM)	TVOC (ppmv)	O_2 %	CO_2 %	LEL %	CH_4 %	Notes
11/22/2019	MW-7	8:30	1.50	5.6	39.9	-	-	-	-	-	Failed test. Pulling atmosphere air from within steel casing. DTW approx. 15.4'.
11/22/2019	MW-8	11:30	19.6	1.15	17.7	9.1	5.9	11.2	0	0.0	SSD Start-up. Oriface Plate #80153
		12:15	19.6	1.15	17.7	3.8	7.6	11.4	0	0.0	DTW approx. 9.8'.
		13:45	19.6	1.15	17.7	3.5	9.6	11.4	0	0.0	Summa Canister sample TO-15.
11/22/2019	MW-16	9:00	12.7	0.60	12.9	5.5	3.0	17.8	0	0.0	SSD Start-up. Oriface Plate #80153
		10:00	12.7	0.60	12.9	5.6	4.1	16.8	0	0.0	Note: Pulled water @ 24" of vacuum.
		11:25	12.7	0.60	12.9	6.6	7.9	14.6	0	0.0	Summa Canister sample TO-15.

Notes: 1. Air Flow measurements made through Oriface #80153 (Pipe ID: 1.939", Bore: 1.100").
2. Equipment Utilized: Landtec Model GEM 2000 Landfill Gas Meter, MiniRAE 3000 PID w/ 10.6 eV lamp, Dwyer Digital Manometer Series 475 and GAST Air Pump.

Radius of Influence Data
November 22, 2019

Seville Dyeing
117 & 229 First Avenue
Woonsocket, Rhode Island

Soil Gas Points				SSD Pilot Test		
Vent Well Operating	Well I.D.	Distance From Vent Well (ft)	Vacuum (inches of H2O)	Vacuum (inches of H2O)	Vacuum Diff. (inches of H2O)	Flow (CFM)
MW-8	MW-16	17	0.250	19.6	1.15	17.7
	MW-7	33	0.000			
	SG-1	59	0.000			
	SG-2	32	0.057			
	SG-3	18	0.093			
	SG-4	44	0.000			
	B-18	60	0.000			
MW-8	MW-16	17	0.190	13.3	0.57	12.6
	MW-7	33	0.000			
	SG-1	59	0.000			
	SG-2	32	0.047			
	SG-3	18	0.089			
	SG-4	44	0.000			
	B-18	60	0.000			
MW-8	MW-16	17	0.137	8.3	0.26	8.6
	MW-7	33	0.000			
	SG-1	59	0.000			
	SG-2	32	0.032			
	SG-3	18	0.080			
	SG-4	44	0.000			
	B-18	60	0.000			

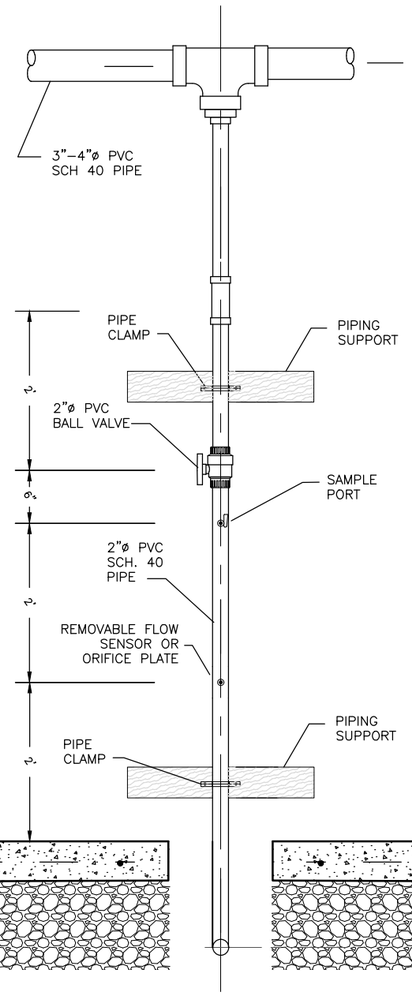
Note: 1. Equipment Utilized: Dwyer Digital Manometer Series 475.

Radius of Influence Data
November 22, 2019

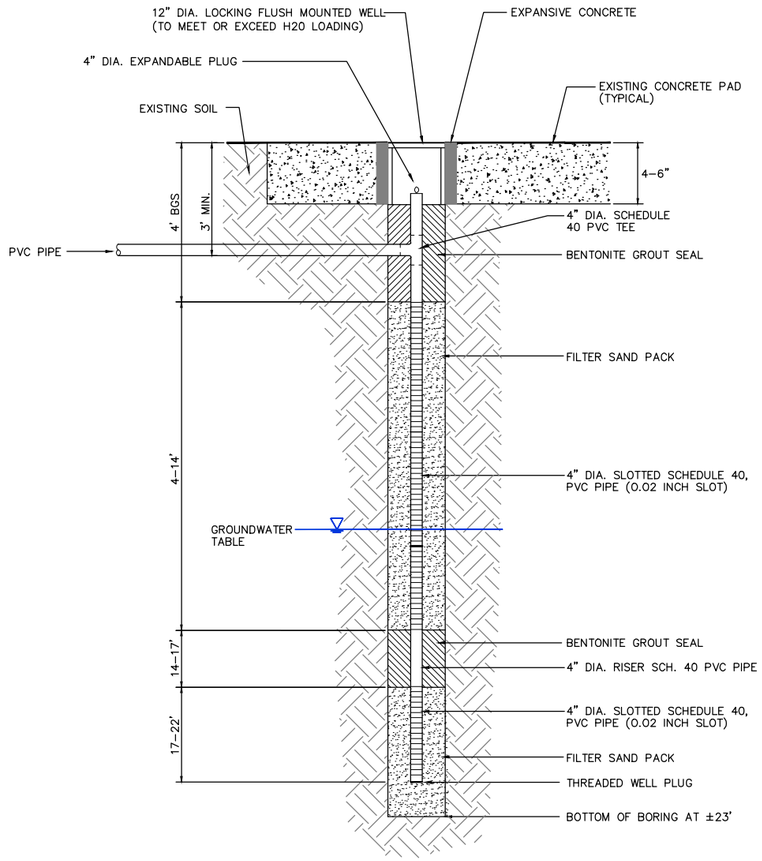
Seville Dyeing
117 & 229 First Avenue
Woonsocket, Rhode Island

Soil Gas Points				SSD Pilot Test		
Vent Well Operating	Well I.D.	Distance From Vent Well (ft)	Vacuum (inches of H2O)	Vacuum (inches of H2O)	Vacuum Diff. (inches of H2O)	Flow (CFM)
MW-16	SG-1	58	0.000	12.7	0.60	12.9
	SG-2	29	0.042			
	SG-3	10	0.230			
	SG-4	40	0.000			
	B-18	43	0.000			
	MW-7	16	0.012			
	MW-8	17	0.195			
MW-16	SG-1	58	0.000	4.95	0.26	8.6
	SG-2	29	0.033			
	SG-3	10	0.179			
	SG-4	40	0.000			
	B-18	43	0.000			
	MW-7	16	0.009			
	MW-8	17	0.163			

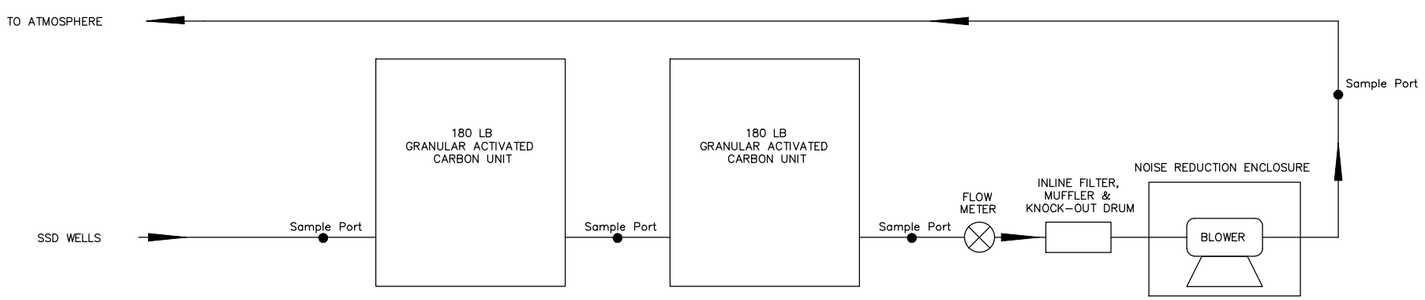
Note: 1. Equipment Utilized: Dwyer Digital Manometer Series 475.



TYPICAL SVE WALL–MOUNT DETAIL
NOT TO SCALE



SVE WELL DETAIL
NOT TO SCALE



TYPICAL SVE SYSTEM SCHEMATIC
NOT TO SCALE

NO.	ISSUE/DESCRIPTION	BY	DATE

PLAT 6, LOT 118
WOONSOCKET, RHODE ISLAND

SOIL VAPOR EXTRACTION (SVE) SYSTEM DETAILS

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
RIDEM

PROJ MGR: RAC	REVIEWED BY: EAS	CHECKED BY: JJS	FIGURE
DESIGNED BY: AIF	DRAWN BY: AIF	SCALE: AS NOTED	E1
DATE: JAN 2020	PROJECT NO. 34502.04	REVISION NO.	SHEET NO.

MW-8
Vent Pilot Test
November 22, 2019

Seville Dyeing
117 & 229 First Avenue
Woonsocket, Rhode Island

Serial #80153
Pipe I.D. = 1.939
Bore = 1.100

Qscfm = (K1*d^2*K2*Y*SQRhw*SGRdensity of fluid)/0.0764

AP - Applied Pressure

Line pressure = 14.7 + AP(psig)

MW-8
Date: November 22, 2019

Applied Vacuum (inch of H_2O)	Line Pressure (psig)	hw (inchs of H2O)	Q (scfm)
19.6	14.0	1.15	17.7
13.3	14.2	0.57	12.6
8.3	14.4	0.26	8.6

MW-16
Vent Pilot Test
November 22, 2019

Seville Dyeing
117 & 229 First Avenue
Woonsocket, Rhode Island

Serial #80153
Pipe I.D. = 1.939
Bore = 1.100

Qscfm = (K1*d^2*K2*Y*SQRhw*SGRdensity of fluid)/0.0764

AP - Applied Pressure

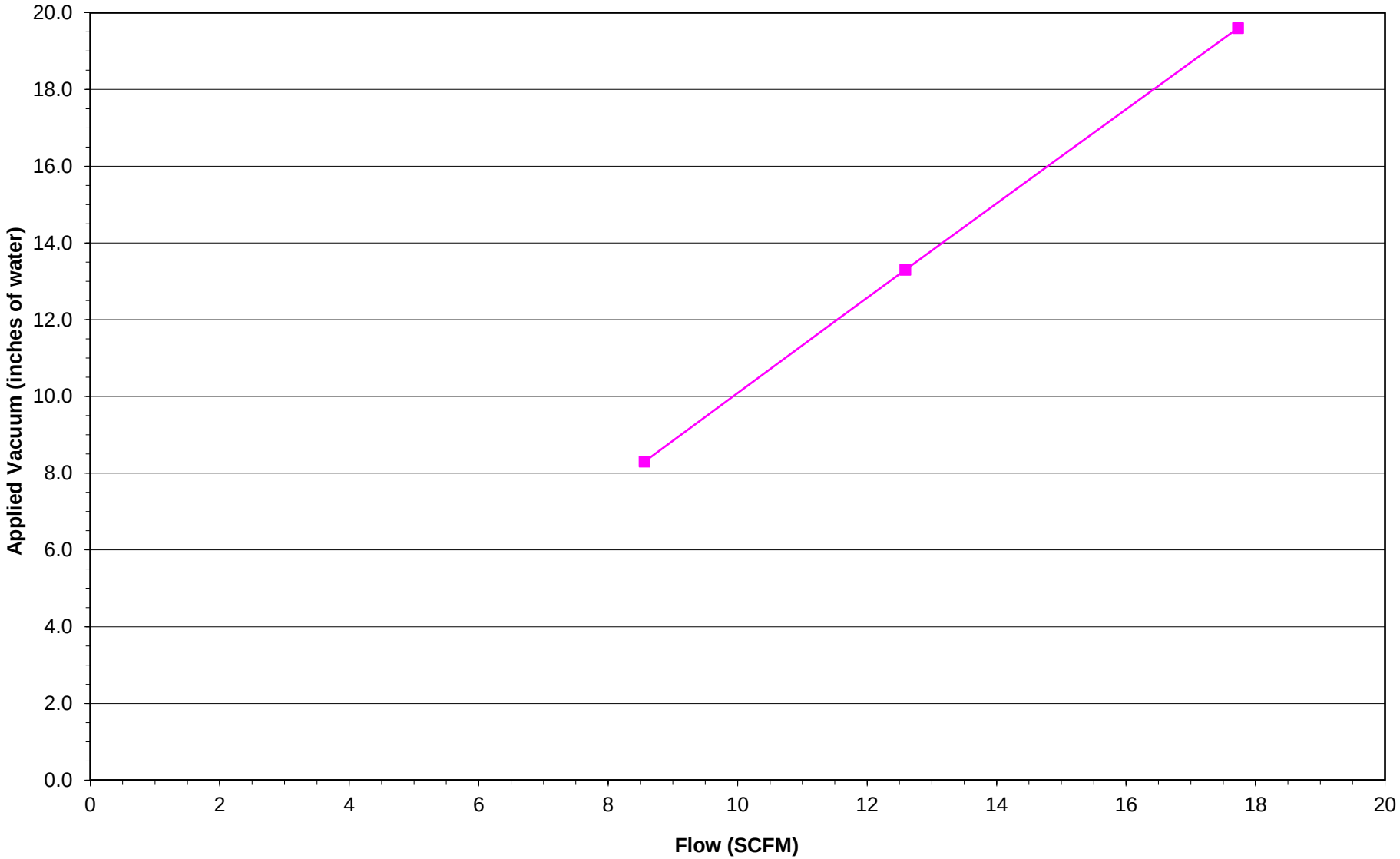
Line pressure = 14.7 + AP(psig)

MW-16
Date: November 22, 2019

Applied Vacuum (inch of H_2O)	Line Pressure (psig)	hw (inchs of H2O)	Q (scfm)
12.7	14.2	0.60	12.9
4.95	14.5	0.26	8.6

Flow Curve (MW-8)
November 22, 2019

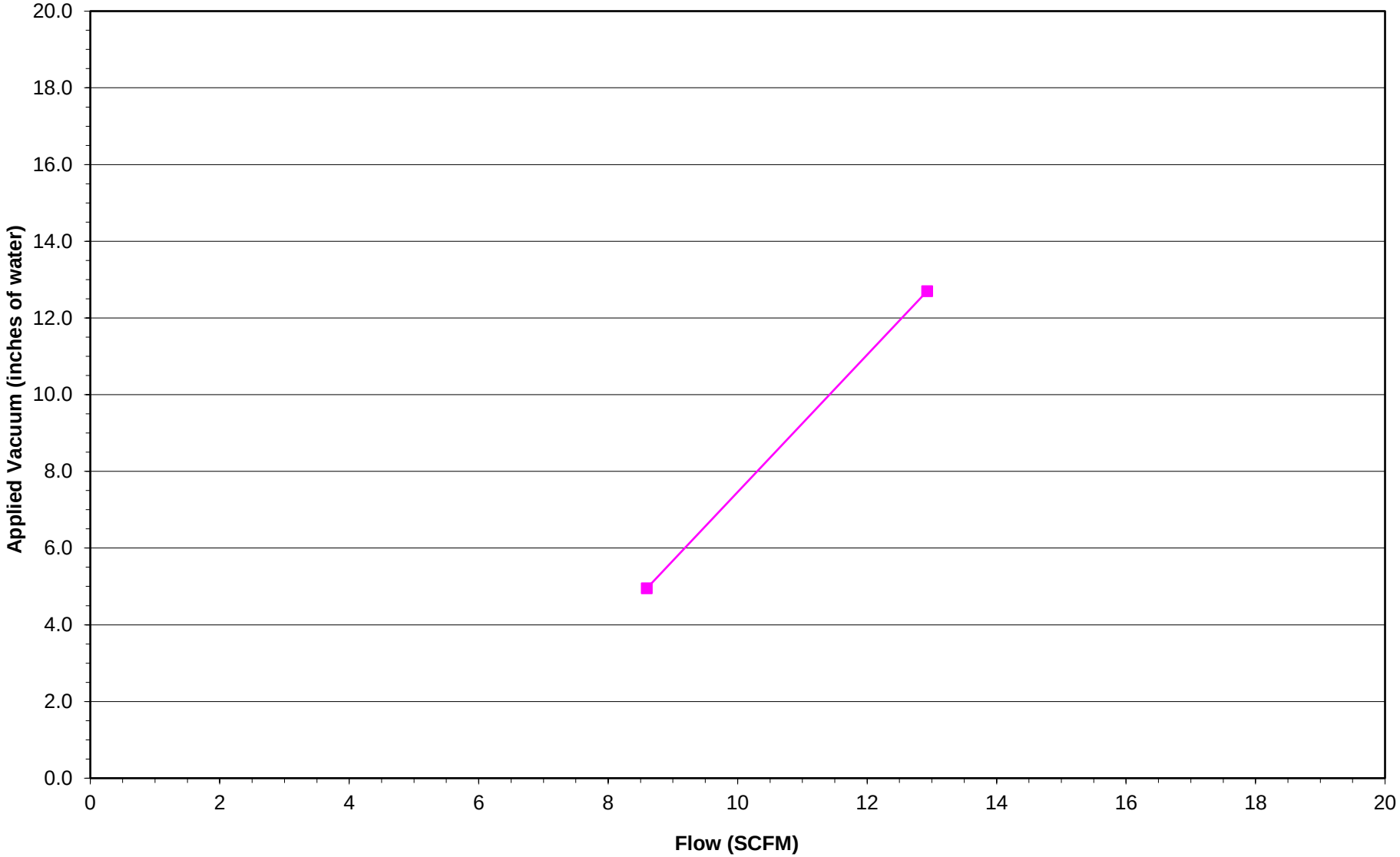
Seville Dyeing
117 & 229 First Avenue
Woonsocket, Rhode Island



Flow Curve (MW-16)

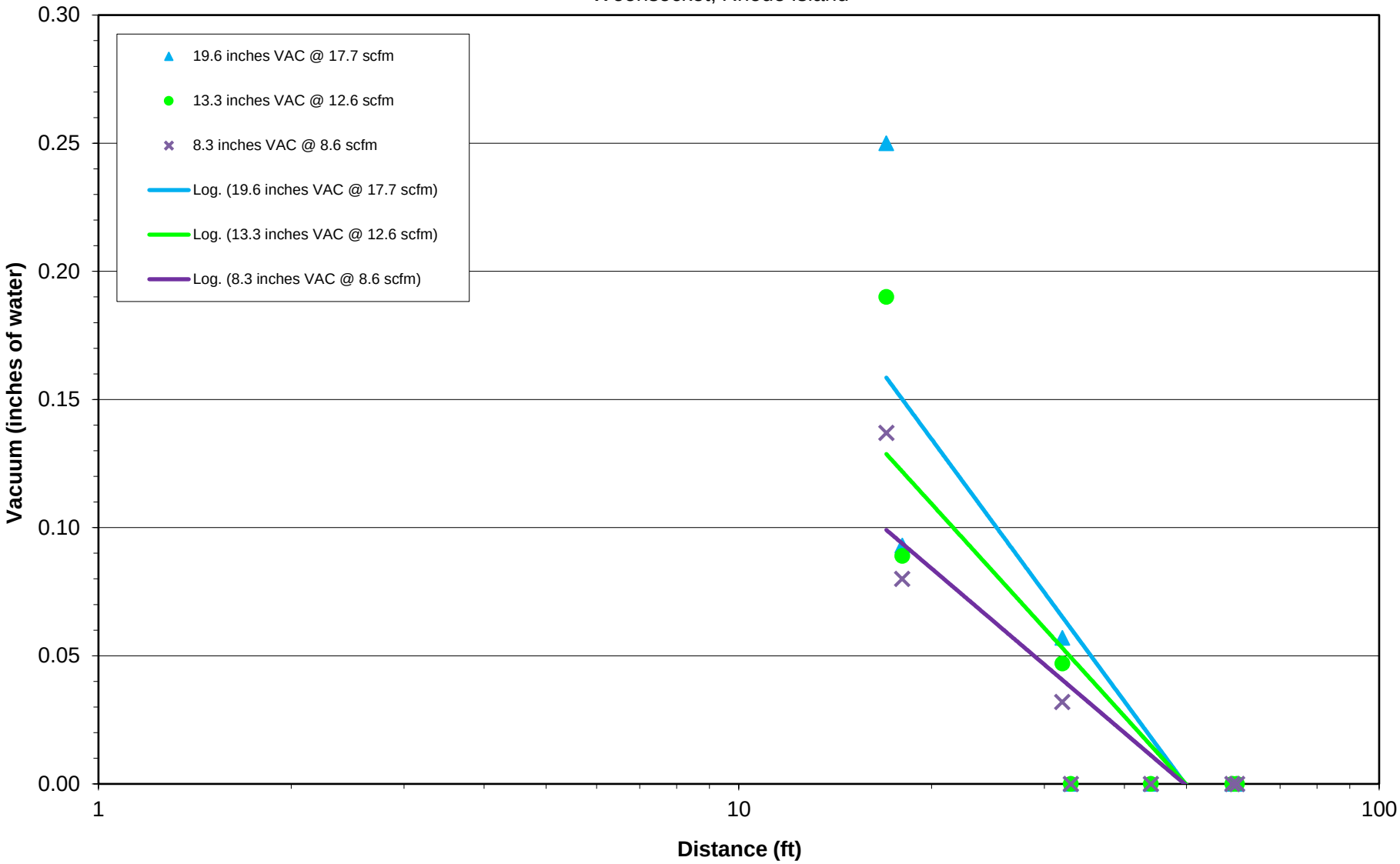
November 22, 2019

Seville Dyeing
117 & 229 First Avenue
Woonsocket, Rhode Island



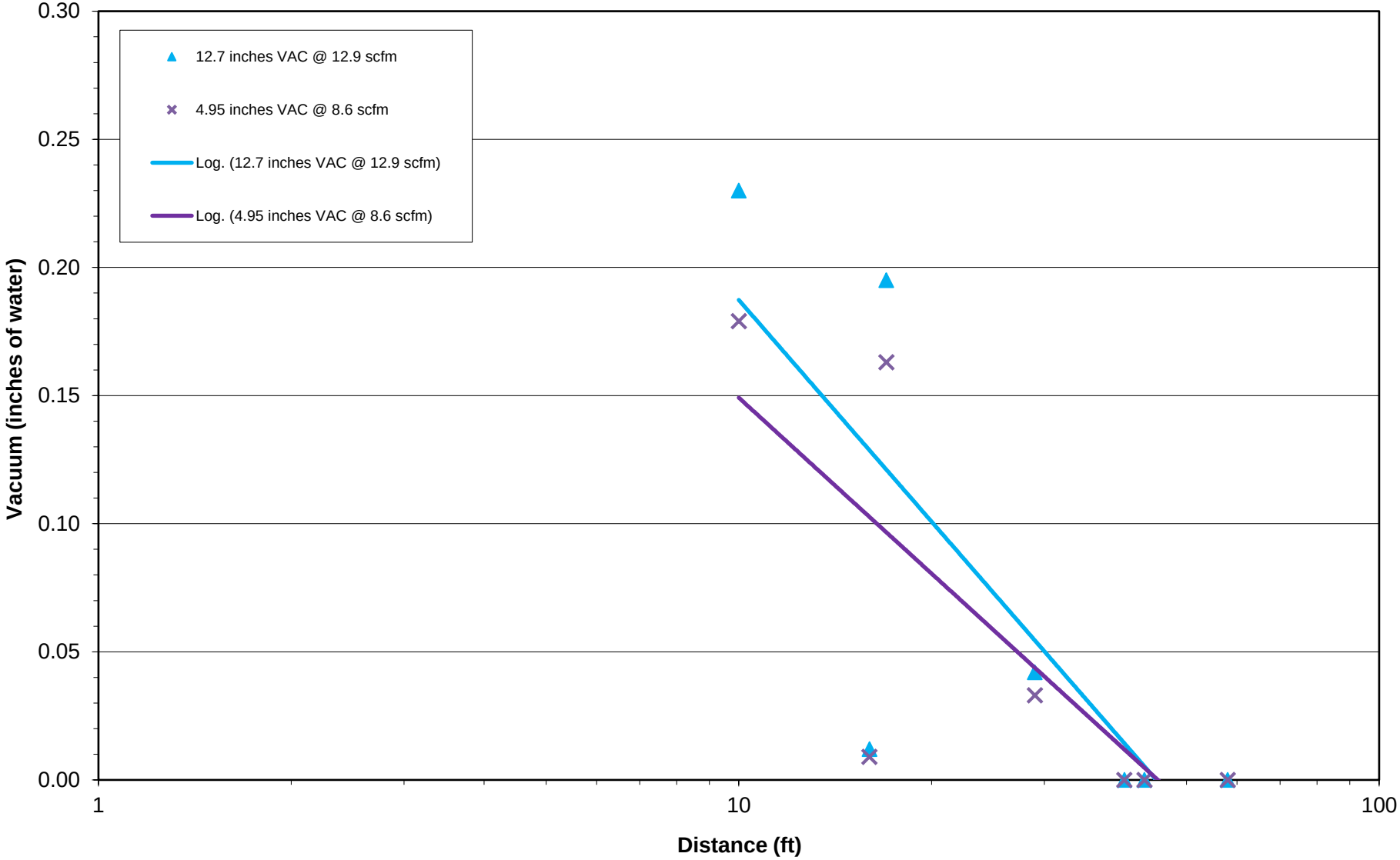
Radius of Influence (MW-8)
November 22, 2019

Seville Dyeing
117 & 229 First Avenue
Woonsocket, Rhode Island



Radius of Influence (MW-16)
November 22, 2019

Seville Dyeing
117 & 229 First Avenue
Woonsocket, Rhode Island



J:\RIDEM TAC\34502.04.rac\Reports\RAWP\Appendix E - Biovent Pilot Test\Seville Dyeing (Woonsocket, RI) - SVE Pilot Test - November 22, 2019

Calculate the mass of Acetone, Benzene, Chloromethane, Dichlorodifluoromethane, Ethyl Alcohol, n-Hexane, Isopropyl Alcohol, Propylene, Toluene, and Trichlorofluoromethane, potentially discharged to the atmosphere from the Proposed Soil Vapor Extraction (SVE) System at the Former Seville Dyeing Company property at 117 and 229 First Avenue in Woonsocket, Rhode Island. The calculations are based on the November 22, 2019 soil vapor data from the SVE pilot test at MW-8 and MW-16 with an estimated soil vapor extraction rate, Q, of 50 standard cubic feet per minute (scfm), with continuous operation (24 hour day - 365 days/year) for the proposed full scale SVE system design.

Compound	MW-8	MW-16	Average		Molecular Weight	
Acetone	0.002980	0.004250	0.003615	ppmv	58.08	g/mole
Benzene	0.000367	0.000354	0.000361	ppmv	78.11	g/mole
Chloromethane	0.000548	0.000526	0.000537	ppmv	50.49	g/mole
Dichlorodifluoromethane	0.000462	0.000400	0.000462	ppmv	120.91	g/mole
Ethyl Alcohol	<0.00500	0.011700	0.008350	ppmv	46.06	g/mole
n-Hexane	0.000212	0.000227	0.000220	ppmv	86.17	g/mole
Isopropyl Alcohol	<0.00500	0.000774	0.033339	ppmv	60.10	g/mole
Propylene	0.000804	0.016400	0.008602	ppmv	42.08	g/mole
Toluene	0.000509	0.000542	0.000526	ppmv	92.13	g/mole
Trichlorofluoromethane	0.000394	0.003490	0.001942	ppmv	137.38	g/mole

SVE System Characteristics

Number of SVE Wells	5	Total
Approximate Flow per SVE Well	10	cfm
Total Flow	50	cfm
Approximate Vacuum Pressure	12	inches of water column

Equation 1: VOC in Pounds per year = [Q(scfm)] X [VOC (µl/l)] X [MW of VOC(g/mole)] X [V_{VOC} (l/mole)]

$$\text{VOCs (lb/year)} = \frac{3.8\ (l) \times 7.481\ (gal) \times 1440\ (min) \times 365\ (day) \times 1\ (l) \times 1\ (lb)}{1\ (gallon) \times 1\ (CF) \times 1\ (day) \times 1\ (year) \times 10^{6}\ (\mu l) \times 454\ (g)}$$

Equation 1 Reduces to:

$$\text{VOCs (lb/year)} = \frac{[Q(scfm)] \times [VOC\ (\mu l/l)] \times [MW\ of\ VOC(g/mole)] \times [3.29 \times 10^{-2}\ (l^2 \times min \times lb)]}{[V_{VOC}\ (l/mole)] \times [(CF) \times (year) \times (\mu l) \times (g)]}$$

Assuming an operating temperature of 60° F and a line pressure of -12 inches of water column

$V_{VOC} = RT\ (1/P)\ n$

Where: R = Universal Gas Constant (0.082057)

T = Temp in degrees Kelvin

°K = °C + 273.15

°C = (°F-32) X (5/9)

T = [(60-32) X (5/9)] + 273.15 = 288.71 °K

P= Pressure in Atmosphere

1 atm = 34 feet of water column

1 foot water column = 0.0294 atm

P = 1 - 0.0294 = 0.9706 atm

n= 1, for one mole of gas

V_{VOC} (l/mole)= 0.082057 X 288.71 (°K) X 1/0.9706 (atm) X 1 (mole)

V_{VOC} (l/mole) = 24.4 l/mole

For Acetone 0.003615 ppmv, MW = 58.08 g/mole, VVOC = 24.4 l/ Mole

$$\text{Acetone (lb/year)} = \frac{Q\ (scfm) \times 0.003615\ (ppm\ or\ \mu l/l) \times 58.08\ (g/mole) \times [3.29 \times 10^{-2}\ (lb \times min \times lb)]}{24.4\ (l/mole) \times [(CF) \times (year) \times (\mu l) \times (g)]}$$

Acetone (lb/year)= (50 X 0.003615*58.08*.0329)/24.4 = 0.014 lbs/year

For Benzene 0.0003605 ppmv, MW = 78.11 g/mole, VVOC = 24.4 l/ Mole

$$\text{Benzene (lb/year)} = \frac{Q\ (scfm) \times 0.0003605\ (ppm\ or\ \mu l/l) \times 78.11\ (g/mole) \times [3.29 \times 10^{-2}\ (lb \times min \times lb)]}{24.4\ (l/mole) \times [(CF) \times (year) \times (\mu l) \times (g)]}$$

Benzene (lb/year)= (50 X 0.0003605*78.11*.0329)/24.4 = 0.002 lbs/year

For Chloromethane 0.000537 ppmv, MW = 50.49 g/mole, VVOC = 24.4 l/ Mole

$$\text{Chloromethane (lb/year)} = \frac{Q\ (scfm) \times 0.000537\ (ppm\ or\ \mu l/l) \times 50.49\ (g/mole) \times [3.29 \times 10^{-2}\ (lb \times min \times lb)]}{24.4\ (l/mole) \times [(CF) \times (year) \times (\mu l) \times (g)]}$$

Chloromethane (lb/year)= (50 X 0.000537*50.49*.0329)/24.4 = 0.002 lbs/year

For Dichlorodifluoromethane 0.000462 ppmv, MW = 120.91 g/mole, VVOC = 24.4 l/ Mole

Dichlorodifluoromethane (lb/year)= $\frac{Q\ (scfm)\ X\ 0.000462\ (ppm\ or\ \mu l/l)\ X\ 120.91\ (g/mole) X\ [3.29\ X\ 10^{-2}\ (lb\ X\ min\ X\ lb)]}{24.4\ (l/mole)\ X\ [(CF)\ X\ (year)\ X\ (\mu l)\ X\ (g)]}$

Dichlorodifluoromethane (lb/year)= (50 X 0.000462*120.91*.0329)/24.4 = 0.004 lbs/year

For Ethyl Alcohol 0.008350 ppmv, MW = 46.06 g/mole, VVOC = 24.4 l/ Mole

Ethyl Alcohol (lb/year)= $\frac{Q\ (scfm)\ X\ 0.008350\ (ppm\ or\ \mu l/l)\ X\ 46.06\ (g/mole) X\ [3.29\ X\ 10^{-2}\ (lb\ X\ min\ X\ lb)]}{24.4\ (l/mole)\ X\ [(CF)\ X\ (year)\ X\ (\mu l)\ X\ (g)]}$

Ethyl Alcohol (lb/year)= (50 X 0.008350*46.06*.0329)/24.4 = 0.026 lbs/year

For n-Hexane 0.000220 ppmv, MW = 86.17 g/mole, V_{VOC} = 24.4 l/ Mole

n-Hexane (lb/year)= $\frac{Q\ (scfm)\ X\ 0.000220\ (ppm\ or\ \mu l/l)\ X\ 86.17\ (g/mole) X\ [3.29\ X\ 10^{-2}\ (lb\ X\ min\ X\ lb)]}{24.4\ (l/mole)\ X\ [(CF)\ X\ (year)\ X\ (\mu l)\ X\ (g)]}$

n-Hexane (lb/year)= (50 X 0.000220*86.17*.0329)/24.4 = 0.001 lbs/year

For Isopropyl Alcohol 0.033339 ppmv, MW = 60.10 g/mole, VVOC = 24.4 l/ Mole

Isopropyl Alcohol (lb/year)= $\frac{Q\ (scfm)\ X\ 0.033339\ (ppm\ or\ \mu l/l)\ X\ 60.10\ (g/mole) X\ [3.29\ X\ 10^{-2}\ (lb\ X\ min\ X\ lb)]}{24.4\ (l/mole)\ X\ [(CF)\ X\ (year)\ X\ (\mu l)\ X\ (g)]}$

Isopropyl Alcohol (lb/year)= (50 X 0.033339*60.10*.0329)/24.4 = 0.135 lbs/year

For Propylene 0.008602 ppmv, MW = 42.08 g/mole, VVOC = 24.4 l/ Mole

Propylene (lb/year)= $\frac{Q\ (scfm)\ X\ 0.008602\ (ppm\ or\ \mu l/l)\ X\ 42.08\ (g/mole) X\ [3.29\ X\ 10^{-2}\ (lb\ X\ min\ X\ lb)]}{24.4\ (l/mole)\ X\ [(CF)\ X\ (year)\ X\ (\mu l)\ X\ (g)]}$

Propylene (lb/year)= (50 X 0.008602*42.08*.0329)/24.4 = 0.024 lbs/year

For Toluene 0.000526 ppmv, MW = 92.13 g/mole, V_{VOC} = 24.4 l/ Mole

Toluene (lb/year)= $\frac{Q\ (scfm)\ X\ 0.000526\ (ppm\ or\ \mu l/l)\ X\ 92.13\ (g/mole) X\ [3.29\ X\ 10^{-2}\ (lb\ X\ min\ X\ lb)]}{24.4\ (l/mole)\ X\ [(CF)\ X\ (year)\ X\ (\mu l)\ X\ (g)]}$

Toluene (lb/year)= (50 X 0.000526*92.13*.0329)/24.4 = 0.003 lbs/year

For Trichlorofluoromethane 0.001942 ppmv, MW = 137.38 g/mole, VVOC = 24.4 l/ Mole

Trichlorofluoromethane (lb/year)= $\frac{Q\ (scfm)\ X\ 0.001942\ (ppm\ or\ \mu l/l)\ X\ 137.38\ (g/mole) X\ [3.29\ X\ 10^{-2}\ (lb\ X\ min\ X\ lb)]}{24.4\ (l/mole)\ X\ [(CF)\ X\ (year)\ X\ (\mu l)\ X\ (g)]}$

Trichlorofluoromethane (lb/year)= (50 X 0.001942*137.38*.0329)/24.4 = 0.018 lbs/year

RIDEM AIR POLLUTION CONTROL REGULATION NO.22
TABLE III, MINIMUM QUANTITIES COMPARISON (POUNDS PER YEAR)

Chemical Name	Minimum Quantity (Pounds/Year)	Calculated Quantity (Pounds/Year)
Acetone	20,000	0.014
Benzene	10	0.002
Chloromethane	NA	0.002
Dichlorodifluoromethane	NA	0.004
Ethyl Alcohol	NA	0.026
n-Hexane	20,000	0.001
Isopropyl Alcohol	1,000	0.135
Propylene	36,500	0.024
Toluene	1,000	0.003
Trichlorofluoromethane	3,000	0.018

Industrial / Chemical Processing Blowers

DR 404 & CP 404

ROTRON®

1.0 HP Regenerative Blower

FEATURES

- Manufactured in the USA - ISO 9001 and NAFTA compliant
- CE compliant - Declaration of Conformity on file
- Maximum flow: 105 SCFM
- Maximum pressure: 58 IWG
- Maximum vacuum: 50 IWG
- Standard motor: 1.0 HP, TEFC
- Cast aluminum blower housing, impeller & cover; cast iron flanges (threaded)
- UL & CSA approved motor with permanently sealed ball bearings
- Inlet & outlet internal muffling
- Quiet operation within OSHA standards

MOTOR OPTIONS

- International voltage & frequency (Hz)
- Chemical duty, high efficiency, inverter duty or industry-specific designs
- Various horsepowers for application-specific needs

BLOWER OPTIONS

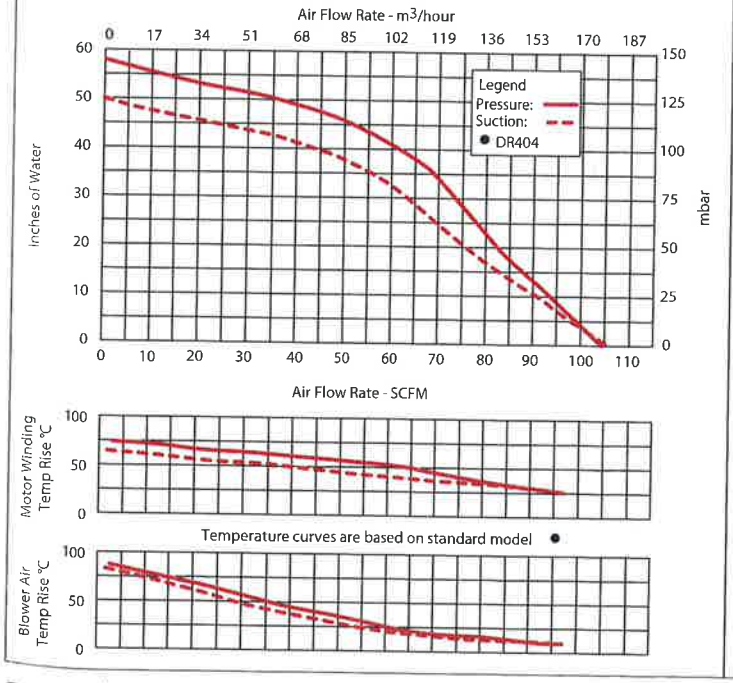
- Corrosion resistant surface treatments & sealing options
- Remote drive (motorless) models
- Slip-on or face flanges for application-specific needs

ACCESSORIES

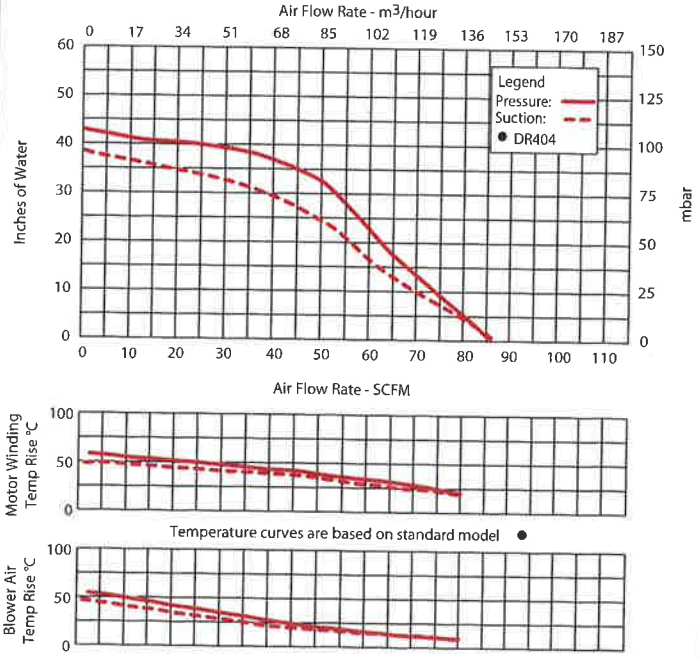
- Flowmeters reading in SCFM
- Filters & moisture separators
- Pressure gauges, vacuum gauges, & relief valves
- Switches - air flow, pressure, vacuum, or temperature
- External mufflers for additional silencing
- Air knives (used on blow-off applications)
- Variable frequency drive package

Blower Performance at Standard Conditions

60 Hz



50 Hz



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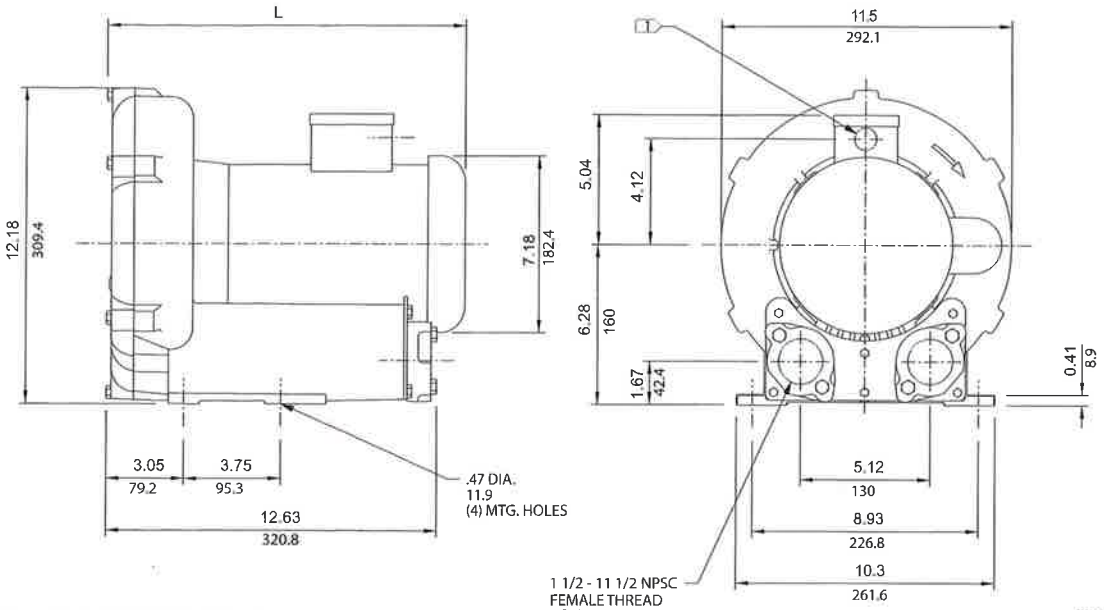
DR 404 & CP 404

ROTRON®

1.0 HP Regenerative Blower



IN
MM

NOTES
1. TERMINAL BOX CONNECTOR HOLE .88 (22.4) DIA. KNOCK-OUT
2. DRAWING NOT TO SCALE, CONTACT FACTORY FOR SCALE CAD DRAWING.
3. CONTACT FACTORY FOR BLOWER MODEL LENGTHS NOT SHOWN.

MODEL	L (IN/MM)
DR404AL58M	14.41/366.0
DR404AL72M	14.18/360.2
DR404AL86M	13.38/339.9

		Part/Model Number			
		DR404AL58M	DR404AL72M	DR404AL86M	CP404CU72MLR
Specification	**Units**	**037407**	**037406**	**037408**	**038233**
Motor Enclosure - Shaft Mtl.	-	TEFC - CS	TEFC - CS	TEFC - CS	Chem TEFC - SS
Horsepower	-	1.0	1.0	1.0	1.0
Voltage	AC	115/230	230/460	575	230/460
Phase - Frequency	-	Single - 60 Hz	Three - 60 Hz	Three - 60 Hz	Three - 60 Hz
Insulation Class	-	F	F	F	F
NEMA Rated Motor Amps	Amps (A)	11.4/5.7	3.0/1.5	1.2	3.0/1.5
Service Factor	-	1.15	1.15	1.15	1.15
Locked Rotor Amps	Amps (A)	70/35	21.0/10.5	7.6	21.0/10.5
Max. Blower Amps	Amps (A)	14.5/7.25	4.0/2.0	1.4	4.0/2.0
NEMA Starter Size	-	00/00	00/00	00	00/00
Shipping Weight	Lbs	69	64	64	64
	Kg	31.3	29	29	29

Voltage - ROTRON motors are designed to handle a broad range of world voltages and power supply variations. Our dual voltage 3 phase motors are factory tested and certified to operate on both: **208-230/415-460 VAC-3 ph-60 Hz** and **190-208/380-415 VAC-3 ph-50 Hz**. Our dual voltage 1 phase motors are factory tested and certified to operate on both: **104-115/208-230 VAC-1 ph-60 Hz** and **100-110/200-220 VAC-1 ph-50 Hz**. All voltages above can handle a ±10% voltage fluctuation. Special wound motors can be ordered for voltages outside our certified range.

Operating Temperatures - Maximum operating temperature: Motor winding temperature (winding rise plus ambient) should not exceed 140°C for Class F rated motors or 120°C for Class B rated motors. Blower outlet air temperature should not exceed 140°C (air temperature rise plus inlet temperature). Performance curve maximum pressure and suction points are based on a 40°C inlet and ambient temperature. Consult factory for inlet or ambient temperatures above 40°C.

Maximum Blower Amps - Corresponds to the performance point at which the motor or blower temperature rise with a 40°C inlet and/or ambient temperature reaches the maximum operating temperature.

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AMETEK®
TECHNICAL & INDUSTRIAL PRODUCTS

SERVICE TECH, INC.

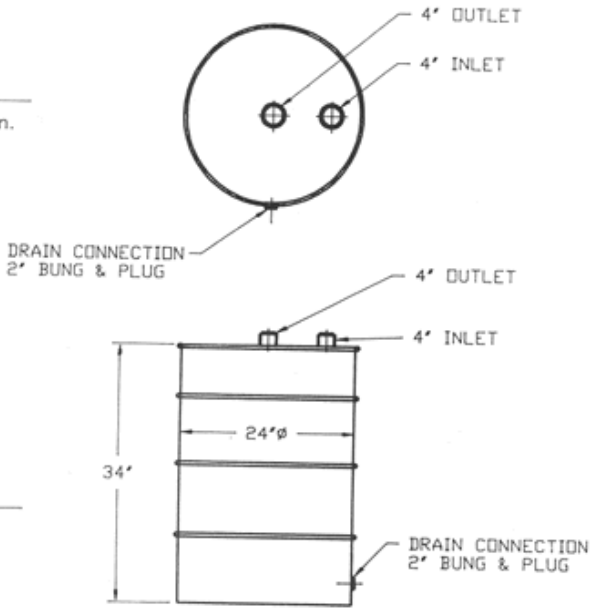
Activated Carbon Engineering, Sales and Service

S-2 AIRCLEAN
180 POUND ACTIVATED CARBON
AIR PURIFICATION ADSORBER

The SERVICE TECH S-2 (air)
Canister handles up to 300 CFM

FEATURES

- 180 Pounds of high activity carbon.
- Epoxy lined steel or polyethylene construction.
- DOT rated. Acceptable for shipment of hazardous spent carbon.
- Side drain for removal of accumulated condensate.
- Low pressure drop.
- PVC Internal piping.
- High Temperature (180°F) steel units available.



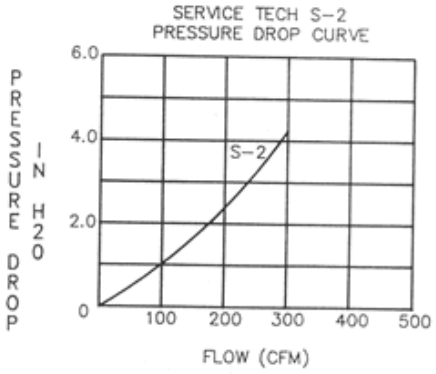
APPLICATIONS

- Soil Vapor Extraction
- Air Stripper Polishing
- Welding Areas
- Tank Vents
- Sewer Odor Control
- Printing Operations

SPECIFY : POLYTHYLENE (P) OR DOUBLE EPOXY LINED STEEL (S)

SPECIFICATIONS

Container	– 24" dia/ x 34" hgt. – (D) double epoxy lined steel – (S) high density polythylene
Carbon	– 180 lbs. virgin high activity carbon
Max. Suggested Flow	– 300 CFM
Max. Rated Flow	– 350 CFM
Shipping Weight	– 235 lbs.
Inlet	– 4" fpt
Outlet	– 4" fpt
Drain	– 2" Bung



<<Previous Page Home Next Page>>

Filtration - Inline Filter (Dual Connection)

ROTRON®

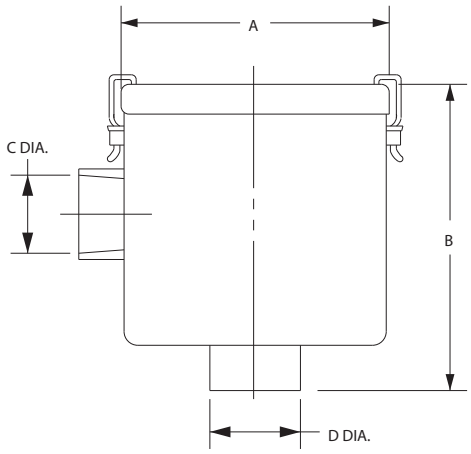
Inline Filters protect the blower from harmful dust and other particles that may be drawn into the blower through the air distribution system. Normally used in vacuum systems.

SPECIFICATIONS:

HOUSING – Steel
MEDIA – Polyester
EFFICIENCY – 97-98% (8 to 10 micron particle size)
FILTER ELEMENT – Replaceable (see filter elements)
NOTE: "Z" MEDIA (1 to 3 micron particle size) available

* Feature 1/4" threaded tap for gauge connection on inlet and outlet

Inline filter PN 271200 is a straight through design
Inlet is directly opposite of outlet



		Part/Model Number							
Specification	**Units**	**271200**	**516461**	**515254**	**515255**	**515256**	**516463***	**516465***	**517611***
Filter Element	-	271078	516434	516434	516435	516435	515135	515135	516515
Ref Blower Model	-	A	B	C, D	E	F	G	H	H
Inlet Connection	-	1.75 SO	1.00 NPSC-F	1.50 NPSC-F	2.00 NPSC-F	2.50 NPSC-F	3.00 NPT-M	4.00 NPT-M	6.00 NPT-M
Outlet Connection	-	2.00 SO	1.00 NPSC-F	1.50 NPSC-F	2.00 NPSC-F	2.50 NPSC-F	3.00 NPT-M	4.00 NPT-M	6.00 NPT-M
Dimension A	Inches	5.25	7.25	7.00	8.00	8.00	14.00	14.00	18.00
	mm	133.4	184.2	177.8	203.2	203.2	355.6	355.6	457.2
Dimension B	Inches	8.31	6.50	6.50	10.25	10.25	26.50	27.00	28.00
	mm	211.1	165.1	165.1	260.4	260.4	673.1	685.8	711.2
Dimension C	Inches	2.00	1.00	1.50	2.00	2.50	3.00	4.00	6.00
	mm	50.8	25.4	38.1	50.8	63.5	76.2	101.6	152.4
Dimension D	Inches	1.75	1.00	1.50	2.00	2.50	3.00	4.00	6.00
	mm	44.5	25.4	38.1	50.8	63.5	76.2	101.6	152.4
Z Media Filter PN	-		517886	517887	517888	517889	517890	517891	517892

Blower Model Reference Key	
A = SPIRAL	E = DR/EN/CP 656, 6, 633, S7
B = DR/EN/CP 068, 083, 101, 202	F = DR/EN/CP 757, 808, 858, S9, P9 (Inlet Only)
C = DR/EN/CP 303, 312, 313, 353	G = DR/EN/CP 833, S13, P13 (Inlet Only)
D = DR/EN/CP 404, 454, 513, 505, 555, 523	H = DR/EN/CP 909, 979, 1233, 14, S15, P15 (Inlet Only)

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AMETEK® TECHNICAL & INDUSTRIAL PRODUCTS

Measurement - Air Flow Meter

ROTRON®

FEATURES

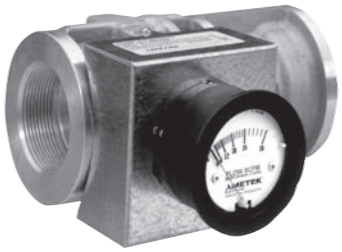
- Direct reading in SCFM
- Low pressure drop (2-4" typical) across the flow meter
- Non-clogging, low impedance air stream
- Light weight aluminum
- No moving parts
- Large easy-to-read dial
- Accurate within 2% at standard conditions
- Good repeatability
- Available in 2", 3" and 4" sizes
- Factory configured for quick installation
- .048" Allen key supplied for gauge adjustment

OPTIONS

- Corrosion-resistant version with Chem-Tough ™ or in stainless steel
- FDA-approved Food Tough™ surface conversion

BENEFITS

- OPTIMIZE SYSTEM EFFICIENCY
  Measuring the correct air flow can assist you in fine-tuning to your system's optimal efficiency.
- BALANCE MULTI-PIPING SYSTEMS
  When evacuating CFM from more than one pipe, different run lengths or end system impedance can cause one pipe to handle more CFM than the other. With an accurate CFM reading, piping can be balanced by bleeding air in/out or by creating an extra impedance.
- DETECT CHANNELING OR PLUGGING
  For systems in which channeling or plugging can occur, a change in the CFM measured can help indicate the unseen changes in your system.



		Part/Model Number					
		FM20C030Q	FM20C045Q	FM20C065Q	FM20C125Q	FM20C175Q	FM20C225Q
Specification	Units	550599	550600	550601	550602	550603	550604
Flow Rate	CFM	2	2	2	2	2	2
	m3/hr	3.4	3.4	3.4	3.4	3.4	3.4
Threads B	-	6-30	9-45	13-65	25-125	35-175	45-225
Dimension C	Inches	7.18	7.18	7.18	7.18	7.18	7.18
	mm	182.4	182.4	182.4	182.4	182.4	182.4
Dimension D	Inches	7.0	7.0	7.0	5.8	5.8	5.8
	mm	177.8	177.8	177.8	147.3	147.3	147.3
Dimension E	Inches	2.0	2.0	2.0	2.0	2.0	2.0
	mm	50.8	50.8	50.8	50.8	50.8	50.8
Dimension F	Inches	3.75	3.75	3.75	3.75	3.75	3.75
	mm	95.3	95.3	95.3	95.3	95.3	95.3

		Part/Model Number					
		FM30C250Q	FM30C350Q	FM30C475Q	FM40C450Q	FM40C600Q	FM40C850Q
Specification	Units	550605	550606	550607	550608	550609	550610
Flow Rate	CFM	2	2	2	2	2	2
	m3/hr	3.4	3.4	3.4	3.4	3.4	3.4
Threads B	-	50-250	70-350	95-475	90-450	120-600	170-850
Dimension C	Inches	7.18	7.18	7.18	7.18	7.18	7.18
	mm	182.4	182.4	182.4	182.4	182.4	182.4
Dimension D	Inches	7.0	7.0	7.0	5.8	5.8	5.8
	mm	177.8	177.8	177.8	147.3	147.3	147.3
Dimension E	Inches	2.0	2.0	2.0	2.0	2.0	2.0
	mm	50.8	50.8	50.8	50.8	50.8	50.8
Dimension F	Inches	3.75	3.75	3.75	3.75	3.75	3.75
	mm	95.3	95.3	95.3	95.3	95.3	95.3

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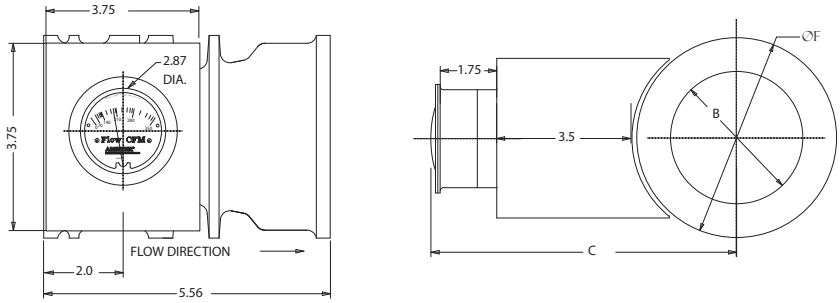
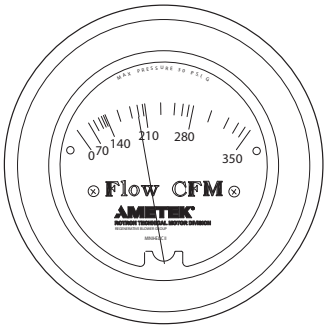
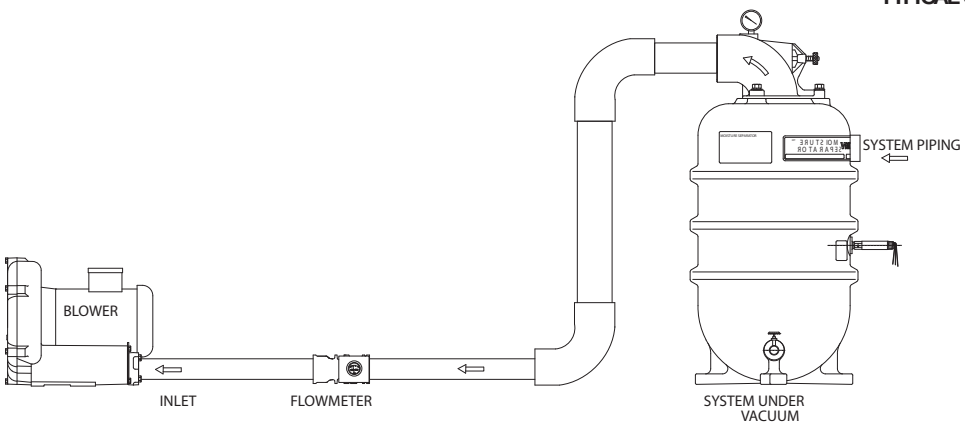
ROTRON®

TYPICAL FLOW METER ARRANGEMENT





TYPICAL GAUGE FACE



HIGH TEMPERATURE/PRESSURE CORRECTION

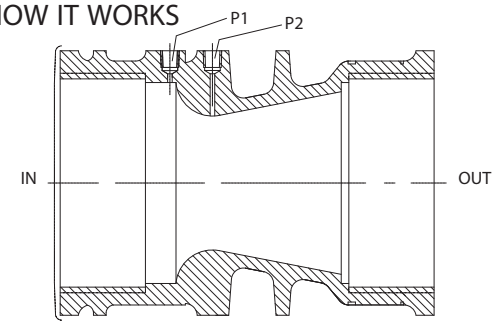
$$SCFM_2 = \frac{SCFM_1}{\sqrt{\left(\frac{14.7}{Pf_2}\right) \times \left(\frac{530}{Tf_2 + 460}\right)}}$$

Pf_2 = Absolute Pressure in PSIA

Tf_2 = Temperature in °F

- Use on inlet to limit need to correct for high pressure or elevated outlet temperature
- Standard model limits = 140°F and 30 PSIG

HOW IT WORKS



ROTRON'S flow meter is a venturi style design. After air enters the inlet, the pressure is measured in the P1 tap. The second tap, P2, measures the pressure at the throat. The differential between P1 and P2 registers across a special calibrated CFM gauge to provide accurate readings. The throat is then expanded back to the original size to keep pressure loss to under 2-4 IWG.

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AMETEK® TECHNICAL & INDUSTRIAL PRODUCTS

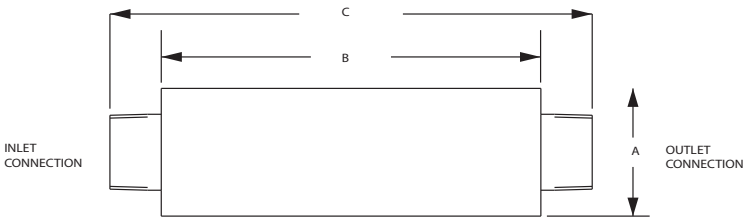
Noise Reduction - Inline Muffler (Dual Connection)

ROTRON®

Inline Mufflers are utilized for noise reduction in applications where piping systems are connected directly to both ends of the muffler. Muffler may be used on inlet or outlet of blower.

SPECIFICATIONS:

HOUSING – Steel
MEDIA – Acoustical Material



		Part/Model Number									
Specification	**Units**	**550888**	**522948**	**529900**	**551377**	**515185**	**511569**	**515210**	**551565**	**516264**	**516265**
Ref Blower Model	-	D	E	E	E	F	G	G	G	H	H
Inlet Connection	-	1.5 NPT-M	2.0 NPT-M	2.0 NPSC-F	2.0 NPT-M	2.5 NPT-M	3.0 NPT-M	4.0 NPT-M	4.0 NPT-M	4.0 NPT-M	6.0 NPT-M
Outlet Connection	-	2.0 NPT-F	2.0 NPSC-F	2.0 NPSC-F	2.0 NPT-M	2.5 NPT-F	3.0 NPT-F	4.0 NPT-F	4.0 NPT-M	4.0 NPT-F	6.0 NPT-F
Dimension A	Inches	4.00	4.00	4.38	4.00	6.12	7.00	10.00	10.00	8.00	12.00
	mm	101.6	101.6	111.3	101.6	155.4	177.8	254	254	203.2	304.8
Dimension B	Inches	7.75	15.75	15.75	15.75	15.00	18.00	24.00	24.00	22.00	30.00
	mm	196.9	400.1	400.1	400.1	381	457.2	609.6	609.6	558.8	762
Dimension C	Inches	15.5	18.45	18.45	18.15	19.00	22.25	30.00	30.00	27.75	36.75
	mm	393.7	468.6	468.6	461	482.6	565.2	762	762	704.9	933.5

Blower Model Reference Key	
A = SPIRAL	E = DR/EN/CP 656, 6, 633, S7
B = DR/EN/CP 068, 083, 101, 202	F = DR/EN/CP 757, 808, 858, S9, P9 (Inlet Only)
C = DR/EN/CP 303, 312, 313, 353	G = DR/EN/CP 833, S13, P13 (Inlet Only)
D = DR/EN/CP 404, 454, 513, 505, 555, 523	H = DR/EN/CP 909, 979, 1233, 14, S15, P15 (Inlet Only)

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AMETEK® TECHNICAL & INDUSTRIAL PRODUCTS

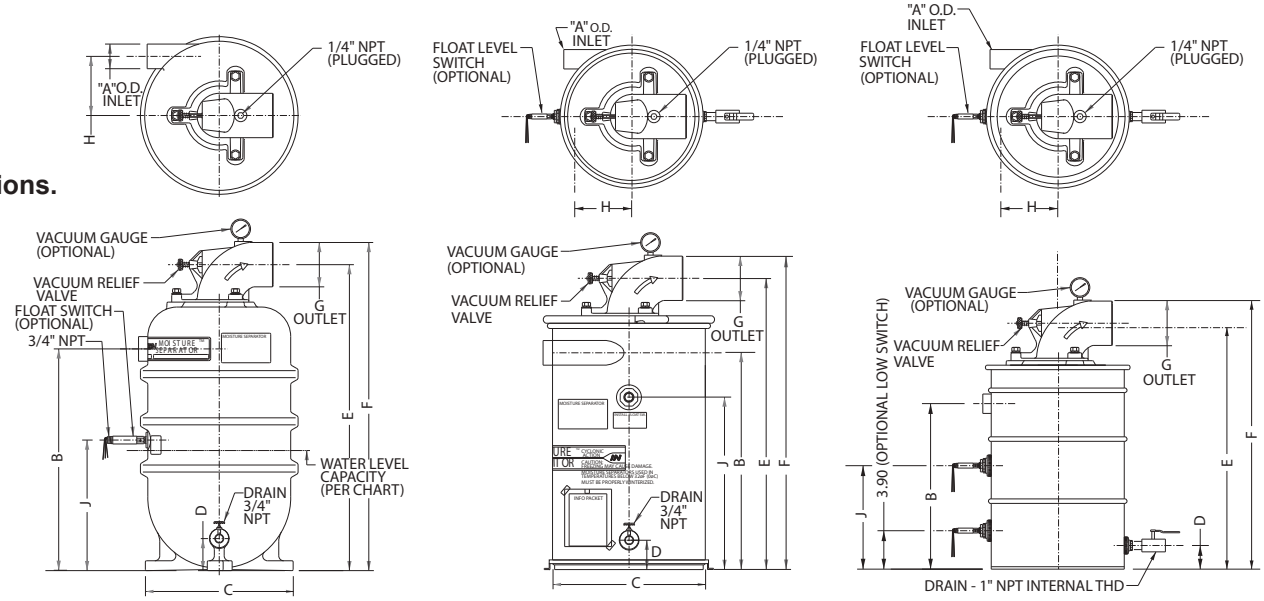
Filtration - Moisture Separator

ROTRON®

By separating and containing entrained liquids, ROTRON'S™ moisture separator helps protect our regenerative blowers and the end treatment system from corrosion and mineralization damage. Recommended for all soil vacuum extraction Applications.

SPECIFICATIONS:
SEPARATION METHOD – High Effciency Cyclonic
RELIEF VALVE MATERIAL – Brass & Stainless Steel
FLOAT MATERIAL – Copper
FLOAT SWITCH – SPDT, Explosion-proof NEMA 7&9, 5 Amp max.

applications.



PLASTIC "P" DESIGN | METAL "D" DESIGN | METAL "B" DESIGN

Specification	Units	Part/Model Number MS200PS 038519	MS300PS 038520	MS350BS 038357	MS500BS 080660	MS600BS 080659	MS1000BS 038914
Dimension A	Inches	2.38	2.88	3.25	3.25	4.00	6.00
	mm	60.5	73.2	82.6	82.6	101.6	152.4
CFM Max.	CFM	200	300	350	500	600	1000
	m3/hr	340	510	595	850	1020	1700
Dimension B	Inches	22.46	22.46	28.00	28.00	27.00	31.00
	mm	570.5	570.5	711.2	711.2	685.8	787.4
Dimension C	Inches	16.00	16.00	23.00	23.00	23.00	27.00
	mm	406.4	406.4	584.2	584.2	584.2	685.8
Dimension D	Inches	3.25	3.25	4.00	4.00	4.00	4.00
	mm	82.6	82.6	101.6	101.6	101.6	101.6
Dimension E	Inches	31.05	31.05	37.25	37.37	37.37	47.32
	mm	788.7	788.7	946.2	949.2	949.2	1201.9
Dimension F	Inches	33.30	33.30	39.50	54.50	54.50	51.70
	mm	845.8	845.8	1003.3	1384.3	1384.3	1313.2
Dimension H	Inches	6	6.00	9.75	9.75	9.25	10.00
	mm	152.4	152.4	247.7	247.7	235	254
Dimension G	Inches	4.50 OD	4.50 D	4.50 OD	6.63 ID	6.63 ID	8.62 OD
	mm	114.3	114.3	114.3	168.4	168.4	218.9
Dimension J	Inches	13.25	13.25	17.50	17.50	17.50	19.88
	mm	336.6	336.6	444.5	444.5	444.5	505
Drain Internal Thd	-	3/4	3/4	1	1	1	1
Shipping Weight	Lbs	42	42	82	95	96	150
	Kg	19.1	19.1	37.2	43.1	43.5	68

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AMETEK®
PRECISION MOTION CONTROL
DYNAMIC FLUID SOLUTIONS

2.0 Moisture Separator™ Specifications

2.1 Duty

The moisture separator shall be designed for use in a soil vapor extraction system capable of continuous operation with a pressure drop of less than six inches of water at the rated flow of _____ SCFM. The separator shall be capable of operation under various inlet conditions randing from a fine mist to slugs of water with high efficiency.

2.2 Principle of Operation

The moisture separator shall incorporate cyclonic separation to remove entrained water. The separator must protect against an overflow by fail safe mechanical means. An electrical switch or contact(s) alone is not an acceptable means of protection against overflow, but is a good backup.

2.3 Construction

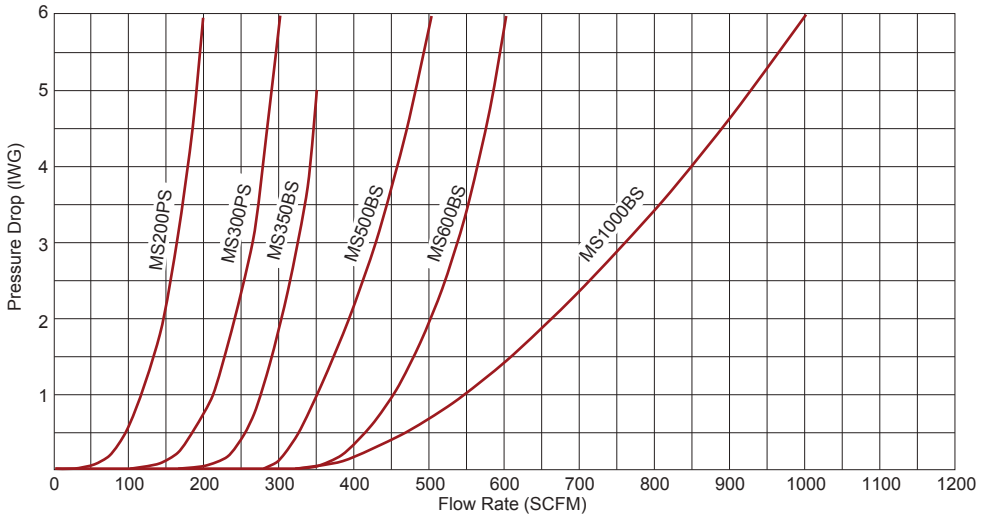
The body of the moisture separator shall be constructed of heavy wall plastic or heavy gauge cold rolled steel. The steel interior and exterior shall be epoxy (powder) coated to resist abrasion, corrosion, and chipping that might expose the surface. The inlet shall be tangentially located and welded to the body. The outlet port shall be constructed of PVC or cast aluminum alloy, flanged and sealed to the center of the top of the separator. The separator shall incorporate a non-sparking copper float ball and an adjustable relief valve to protect against overflow and overheating the blower.

2.4 Capacity and Dimension

The moisture separator must have a liquid capacity of _____ gallons. The inlet shall be _____ inch OD slip-on type. The outlet shall be _____ inch OD slip-on type.

For DR/EN/CP Blower Model	Selector Moisture Separator Model	Liquid-holding Capacity (gallons)	Inlet (OD)	Outlet	Max Vacuum Allow (IHG)
404 454 505 513 523 555 633 833	MS200PS	7	2.38	4.5 OD	12
656 6 757	MS300PS	7	2.88		
808	MS350BS	40	3.25	6.63 ID	22
858 1233	MS500BS				
909	MS600BS		4.0		
979 14	MS1000BS	65	6.0	8.62 OD	

2.5 Pressure Drop



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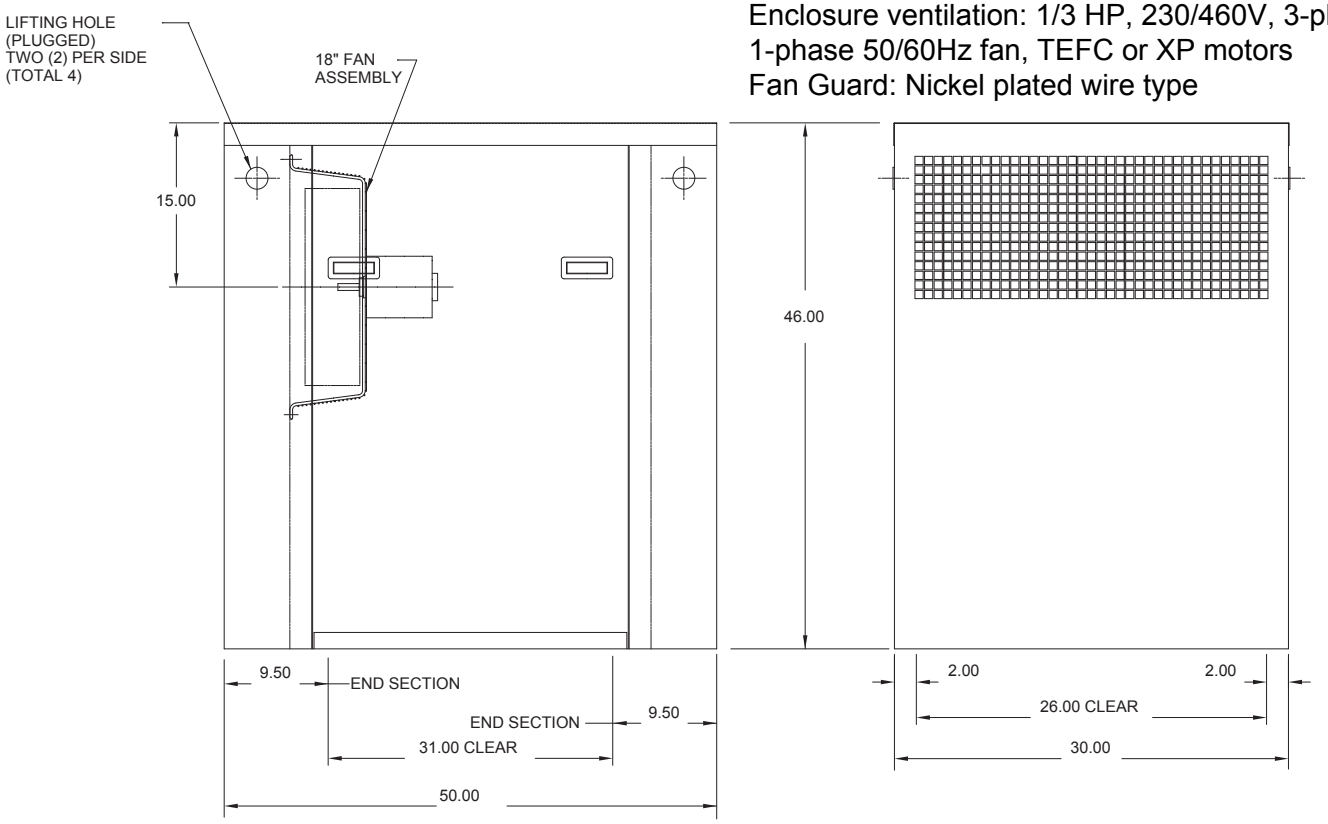
Noise Reduction - Sound Attenuating Enclosure

ROTRON®

Frameless sound attenuating enclosures are a proven way to reduce regeenrative blower mechanical noise when additional mufflers are just not enough. Additional enclosure options are available.

FEATURES:
Excellent noise reduction (~10DbA)
Resistance to elements and aesthetic appearance
Compact size for ease of installation
Easy access for routine maintenance (removable foor and sidewalls)

SPECIFICATIONS:
Roof, floor and walls: galvanized 16 ga. carbon steel sheet metal
Louvers and/or hood: Riveted aluminum
Hardware: Chrome plated aluminum handles with stainless steel fastners
Latches: Over center glvanized with adjustable tension and padlock eye
Sound attenuating material: 2" rigid polyester foam with mylar facing (rated UL-94)
Exterior finish: Polyurethane enamel
Enclosure ventilation: 1/3 HP, 230/460V, 3-phase or 1-phase 50/60Hz fan, TEFC or XP motors
Fan Guard: Nickel plated wire type



		Part/Model Number	
		SAE30W72F	SAE36W72F
Specification	Units	552904	552905
Width	Inches	30	36
	mm	762	914.4
Blower Size	-	656, 707, 757, 808, 858, 909, 979, P9, S9	14, P13, S13, P15, S15
Height	Inches	46	52
	mm	1168.4	1320.8
Length	Inches	50	60
	mm	1270	1524

AMETEK DYNAMIC FLUID SOLUTIONS
75 North Street, Saugerties, NY 12477
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www.ametekdfs.com

APPENDIX F

ABCA

SEVILLE DYE ABCA

Analysis of Brownfields Cleanup Alternatives – Preliminary Evaluation
Former Seville Dyeing Company, 117 and 229 First Avenue, Woonsocket, RI
RIDEM Case No.: SR-39-1211A&B

Prepared by the City of Woonsocket

*Please note that the draft Analysis of Brownfields Cleanup Alternatives (ABCA) submitted as part of the proposal is intended as a brief preliminary document. The format of this document is suitable for the purpose of grant proposal submission, but not for compliance with the Terms and Conditions of an awarded grant. In addition, this document may not meet state requirements for the evaluation of cleanup alternatives.**

I. Introduction & Background

a. Site Location (*address*)

The site is located at 117 and 229 First Avenue in Woonsocket, RI (herein referred to as "the Site").

a.1 Forecasted Climate Conditions

According to the US Global Change Research Program (USGCRP), climate trends for the northeast region of the United States include increased temperatures, increased precipitation with greater variability, increased extreme precipitation events, and rises in sea level. Some of these factors, most specifically increased precipitation that may affect flood waters and stormwater runoff, are most applicable to the cleanup of the Site.

The Site is adjacent to the Blackstone River. Based on a review of Federal Emergency Management Agency (FEMA) Map #44007C0069G dated March 2, 2009, the majority of the Site is located within Zone X. The Zone X designation is for areas with a 0.2% annual chance of flood; areas of 1% annual chance of flood with average depths of less than 1 foot or with drainage areas less than 1-square mile; and areas protected by levees from 1% annual chance of flood. The northeastern portion of the Site is located with an "AE, 0.2% Annual Chance Flood Hazard Zone. However, greater storm frequency and intensity in a changing climate may result in more frequent and more powerful flood waters within the Blackstone River, which may result in changes to the flood zone and increased risk of flooding of the Site.

Under current Site conditions, increased precipitation and extreme weather could result in additional stormwater runoff and potential erosion to the Site from the onsite concrete/asphalt areas.

Based on the nature of the Site and its proposed reuse, changing temperature, rising sea levels, wildfires, changing dates of ground thaw/freezing, changing ecological zone, saltwater intrusion and changing groundwater table are not likely to significantly affect the Site.

b. Previous Site Use(s) and any previous cleanup/remediation

The 229 First Avenue portion of the Site consists of 4.3 acres that was a textile/mercantile mill complex from 1903 until demolition in 2011. The 117 First Avenue portion of the Site consists of 1.08 acres that was previously utilized as a motor freight terminal from 1949 to 1997.

A series of documented releases and/or other episodes of environmental non-compliance associated with prior activities were identified on the 117 First Avenue parcel. Environmental investigations from the 1990s identified the storage of oil containers, 25 drums of gasoline and sludge, an empty 500-gallon above ground storage tank (former contents unknown), and soil staining. Soil testing indicated elevated levels of total petroleum hydrocarbons (TPH) and polyaromatic hydrocarbons (PAHs) in soil. This work culminated with the implementation of engineered and institutional controls.

An abandoned, suspected 20,000-gallon No. 6 heating oil underground storage tank (UST) is located within a concrete bunker on the western perimeter of the Site (229 First Avenue parcel).

c. Site Assessment Findings (*briefly summarize the environmental investigations that have occurred at the site, including what the Phase I and Phase II assessment reports revealed in terms of contamination present, if applicable*)

GZA completed a Phase I Environmental Site Assessment dated September 2018 for the Site, on behalf of the Rhode Island Department of Environmental Management (RIDEM), as part of a Target Brownfields Assessment. GZA's Phase I ESA identified three Recognized Environmental Conditions (RECs) and one Controlled Recognized Environmental Condition (CREC) in connection with the property:

- An abandoned, suspected 20,000-gallon No. 6 heating oil underground storage tank (UST) located within a concrete bunker on the western perimeter of the Site.
- The presence of solid waste and areas of soil staining observed in the northern portion of the Site.
- The former mill buildings were utilized for approximately 100 years for textile manufacturing which likely has resulted in impacts to soil and/or groundwater as a result of historic use and/or undocumented releases of oil and/or hazardous materials.
- A series of documented releases and/or other episodes of environmental non-compliance associated with prior activities were identified on the 117 First Avenue parcel. Environmental investigations from the 1990s identified the storage of oil containers, 25 drums of gasoline and sludge, an empty 500-gallon above ground storage tank (former contents unknown), and soil staining. Soil testing indicated elevated levels of TPH and PAHs in soil. This work culminated with the implementation of engineered and institutional controls identified as a CREC

consisting of an asphalt cap and an Environmental Land Use Restriction (ELUR) that was recorded on Lot 117.

To evaluate these RECs, GZA conducted a subsurface investigation at the Site in November/December 2018. GZA completed 14 soil test borings and the collected soil samples for field screening and laboratory analysis. The 14 borings (B-1 through B-3, B-5 through B-11, MW-3, MW-4, MW-7 and MW-8) were completed to depths of 8 to 20 feet below ground surface (bgs). Two of the borings were located directly downgradient of the #6 oil UST bunker. Four borings were completed as shallow overburden groundwater monitoring wells. Soil samples recovered during the boring program were observed to generally consist of fine to coarse sand with varying amounts of gravel and silt in all borings. A majority of the borings also had traces of asphalt, brick and concrete between 0-10 ft bgs, indicating that the area has been filled. Groundwater was encountered at a depth of 8 to 13 feet bgs. A layer of petroleum impacted soil was observed in borings MW-7 and MW-8 (located downgradient of the UST bunker) from 10 to 20 feet bgs.

Thirteen soil samples, including one blind duplicate, were submitted to the laboratory for testing; twelve samples (including one blind duplicate) were tested for volatile organic compounds (VOCs), PAHs, TPH, polychlorinated biphenyls (PCBs), PP-13 metals. The remaining sample was tested for TPH fingerprint only. I/C-DEC exceedences for metals and certain PAHs were noted in MW-3, MW-4,, B-3, B-5, B-6, B-7 and B-11 in samples collected from 0-5 feet and/or 5-10 feet bgs. TPH also exceeded the I/C-DEC and GB-Leachability Criteria in samples from MW-7 (10-15 feet), B-1 (5-10 feet) and B-10 (7.5-9 feet). MW-8 and B-1 are located immediately downgradient of the oil UST bunker.

One round of groundwater samples was collected from the four newly installed wells. Results showed exceedences of the GB Groundwater Objective for benzene and ethylbenzene in MW-8; concentrations were 3.41 and 14.5 mg/L, respectively. This well is located downgradient of the oil UST bunker. A VI screening indicates that VI risk may be present if a building were to be constructed onsite in the future; currently the VI pathway is incomplete, as no buildings are located at the Site.

d. Project Goal (*site reuse plan*)

The planned reuse for the Site is restricted residential or industrial/commercial. At this time the City does not have a specific reuse plan for the property.

II. Applicable Regulations and Cleanup Standards

a. Cleanup Oversight Responsibility (*identify the entity, if any, that will oversee the cleanup, e.g., the state, Licensed Site Professional, other required certified professional*)

The cleanup will be overseen by RIDEM. In addition, all documents prepared for this Site are submitted to the state environmental department under RIDEM Case No. SR-39-1211A&B.

b. Cleanup Standards for major contaminants (*briefly summarize the standard for cleanup e.g., state standards for residential or industrial reuse*)

The City currently anticipates that the RIDEM RDEC, GB Leachability Criteria and GB Groundwater Objectives will be used as the cleanup standards.

c. Laws & Regulations Applicable to the Cleanup (*briefly summarize any federal, state, and local laws and regulations that apply to the cleanup*)

Laws and regulations that are applicable to this cleanup include the Federal Small Business Liability Relief and Brownfields Revitalization Act, the Federal Davis-Bacon Act, Rhode Island environmental laws, and City by-laws. Federal, state, and local laws regarding procurement of contractors to conduct the cleanup will be followed.

In addition, all appropriate permits (*e.g.*, notify before you dig, wetlands/stormwater soil transport/disposal manifests) will be obtained prior to the work commencing.

III. Cleanup Alternatives

a. Cleanup Alternatives Considered (*minimum two different alternatives plus No Action*)

To address contamination at the Site, four different alternatives were considered, including: Alternative #1 - No Action; Alternative #2 - Institutional Controls; Alternative #3 - Limited Design Investigation, Oil UST Cleaning, Bio-vent System, Site Fencing, Institutional Controls and Long-Term Monitoring; and Alternative #4 Site Capping (as part of Site redevelopment), Limited Design Investigation, Oil UST Cleaning, Bio-vent System, Site Fencing, Institutional Controls and Long-Term Monitoring.

b. Evaluation of Cleanup Alternatives (*brief discussion of the effectiveness, implementability and a preliminary cost estimate for each alternative)*

To satisfy EPA requirements, the effectiveness, implementability, and cost of each alternative must be considered prior to selecting a recommended cleanup alternative.

<u>Effectiveness – Including Climate Change Considerations</u>

- Alternative #1: No Action is not effective in controlling or preventing the exposure of receptors to contamination at the Site.
- Alternative #2: Under this alternative, an ELUR could be placed on the property, prohibiting future groundwater use, requiring buildings constructed onsite to include a sub-slab depressurization system and limiting land use to industrial/commercial activities. However, this alternative would not address

VOC/TPH concentrations in groundwater, the presence of NAPL in soil (and potentially in groundwater) or direct exposure to soils exceeding the I/C DEC.
.

- Alternative #3: Limited Design Investigation, Oil UST Cleaning, Bio-vent System, Site Fencing, Institutional Controls and Long-Term Monitoring is an effective way to mitigate risk at the Site, since soil TPH contamination will be removed, Site access will be restricted and residential use/groundwater use on the property will be prohibited through institutional controls.
- Alternative #4: Site Capping (as part of Site redevelopment), Limited Design Investigation, Oil UST Cleaning, Bio-vent System, Site Fencing, Institutional Controls and Long-Term Monitoring is equally effective as Alternative #3

General Climate Consideration Notes:
Any future development of the Site will be completed in accordance with RIDEM stormwater regulations. Therefore, impacts from increased precipitation and stormwater discharge due to greater storm intensity is not expected to impact the Site with proper engineering, which is planned despite the selected remedial alternative.

Implementability

- Alternative #1: No Action is easy to implement since no actions will be conducted.
- Alternative #2: Institutional Controls is easy to implement as an ELUR can easily be filed on the property.
- Alternative #3: Limited Design Investigation, Oil UST Cleaning, Bio-vent System, Site Fencing, Institutional Controls and Long-Term Monitoring will be moderately difficult and costly to implement. Some excavation will be required during installation of the bio-vent system and long-term monitoring will be required. Work will be planned to minimize impacts to the local community. The bio-vent system will be constructed to avoid climate change impacts, i.e., potential increase flooding of the Blackstone River.
- Alternative #4: Site Capping (as part of Site redevelopment), Limited Design Investigation, Oil UST Cleaning, Bio-vent System, Site Fencing, Institutional Controls and Long-Term Monitoring will be moderately difficult and costly to implement. Excavation and Site grading will be required as part of Site capping. Work will be planned to minimize impacts to the local community. The proposed cap and any Site redevleopment will be constructed to avoid climate change impacts, i.e., potential increase flooding of the Blackstone River.

Cost

- There will be no costs under Alternative #1: No Action.
- It is estimated that Alternative #2: Institutional Controls will cost $9,000.
- Alternative #3: Limited Design Investigation, Oil UST Cleaning, Bio-vent System, Site Fencing, Institutional Controls and Long-Term Monitoring is estimated to cost roughly $440,000, including long term monitoring for five years.
- Alternative #4: Site Capping (as part of Site redevelopment), Limited Design Investigation, Oil UST Cleaning, Bio-vent System, Site Fencing, Institutional

Controls and Long-Term Monitoring is estimated to cost roughly between $828,000 and $1,300,000, long term monitoring for five years, depending on the type of cap/redevleopment (a solar array, recreation field and industrial redevelopment were considered).

c. Recommended Cleanup Alternative

The recommended cleanup alternative is Alternative #3: Limited Design Investigation, Oil UST Cleaning, Bio-vent System, Site Fencing, Institutional Controls and Long-Term Monitoring. Alternative #1: No Action and Alternative #2: Institutional Controls cannot be recommended since they do not fully address site risks. Alterative #3: Limited Design Investigation, Oil UST Cleaning, Bio-vent System, Site Fencing, Institutional Controls and Long-Term Monitoring will remediate observed TPH contamination and mitigate direct exposure risk until the Site is redeveloped. Alternative #4: Site Capping (as part of Site redevelopment), Limited Design Investigation, Oil UST Cleaning, Bio-vent System, Site Fencing, Institutional Controls and Long-Term Monitoring will remediate observed TPH contamination and mitigate long-term direct exposure risk. For these reasons, Alternative #4 is the recommended alternative.

Green and Sustainable Remediation Measures for Selected Alternative

To make the selected alternative greener, or more sustainable, several techniques are planned. The most recent Best Management Practices (BMPs) issued under ASTM Standard E-2893: *Standard Guide for Greener Cleanups* will be used as a reference in this effort. The City will require the cleanup contractor to follow an idle-reduction policy and use heavy equipment with advanced emissions controls operated on ultra-low sulfur diesel. The number of mobilizations to the Site would be minimized and erosion/sedimentation control measures will be used to minimize runoff into environmentally sensitive areas.

APPENDIX G

DRAFT ENVIRONMENTAL LANDUSE RESTRICTION AND SOIL MANAGEMENT PLAN

Appendix G
ENVIRONMENTAL LAND USAGE RESTRICTION

This Declaration of Environmental Land Usage Restriction ("Restriction") is made on this _____ day of _____, 2020~~—~~ by ~~[property owner]~~the City of Woonsocket, and its successors and/or assigns (hereinafter, the "Grantor").

WITNESSETH:

WHEREAS, the Grantor ~~_____ (name)~~the Rhode Island Department of Environmental Management (RIDEM) is the Owner in fee simple of certain real property identified as Plat 6/Lot 117 ~~[specify Plat, Lot(s), address and Town or City]~~ Rhode Island (the "Property"), more particularly described in Exhibit A (Legal Description) which is attached hereto and made a part hereof;

WHEREAS, the Property ~~(or portion thereof identified in the Class I survey which is attached hereto as Exhibit 2A and is made a part hereof)~~ has been determined to contain soil ~~and/or groundwater~~ which is contaminated with certain Hazardous Materials and ~~/or~~ petroleum at concentrations in excess of applicable Method 1 Residential Direct Exposure Criteria and GB Leachability Criteria ~~[residential or industrial/commercial Direct Exposure Criteria, and/or applicable groundwater objective]~~ ~~criteria~~ pursuant to the Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases ("Remediation Regulations");

WHEREAS, the Grantor and the Department have determined that the environmental land use restrictions set forth below are consistent with the regulations adopted by the Rhode Island Department of Environmental Management ("Department") pursuant to R.I.G.L. § 23-19.14-1 and that this restriction shall be a Conservation Restriction pursuant to R.I.G.L. § 34-39--1 et. seq. and shall not be subject to the 30 year limitation provided in R.I.G.L. § 34-4-21;

WHEREAS, the Department's written approval of this Restriction is contained in the document entitled: Remedial ~~Decision~~ Approval Letter,~~[Remedial Decision Letter/ Settlement Agreement/ Order of Approval/ Remedial Approval Letter]~~ issued pursuant to the Remediation Regulations;

WHEREAS, to prevent exposure to or migration of Hazardous Substances and to abate hazards to human health and/or the environment, and in accordance with the ~~[Remedial Decision Letter/ Remedial Agreement/ Order of Approval/ Remedial Approval Letter],~~Remedial Decision Letter, the Grantor desires to impose certain restrictions upon the use, occupancy, and activities of and at the ~~[Property/Contaminated Site]~~Property;

WHEREAS, the Grantor believes that this Restriction will effectively protect public health and the environment from such contamination; and

WHEREAS, the Grantor intends that such restrictions shall run with the land and be binding upon and enforceable against the Grantor and the Grantor's successors and assigns.

NOW, THEREFORE, Grantor agrees as follows:

A. Restrictions Applicable to the ~~[Property/Contaminated Site]~~Property: In accordance with the Remedial Decision Letter,~~[Remedial Decision Letter/ Remedial Agreement/ Order of Approval/ Remedial Approval Letter],~~ the use, occupancy and activity of and at the Property~~[Property/ Contaminated Site]~~ is restricted as follows:

i. No residential use of the Property ~~[Property/Contaminated Site]~~ shall be permitted that is contrary to Department approvals and restrictions contained herein;

ii. No groundwater at the Property~~[Property/Contaminated Site]~~ shall be used as potable water;

iii. No soil at the Property ~~[Property/Contaminated Site]~~ shall be disturbed in any manner without written permission of the Department's Office of Waste Management, except as permitted in the Remedial Action Work Plan (RAWP) or Soil Management Plan (SMP) approved by the Department in a written approval letter dated _____(date) Exhibit B and attached hereto;

[iv. Humans engaged in activities at the Property~~[Property/Contaminated Site]~~ shall not be exposed to soils containing Hazardous Materials and/or petroleum in concentrations exceeding the applicable Department approved Direct Exposure Criteria set forth in the Remediation Regulations;

~~[v.Water at the [Property/Contaminated Site] shall be prohibited from infiltrating soils containing Hazardous Materials and/or petroleum in concentrations exceeding the applicable Department approved leachability criteria set forth in the Remediation Regulations;~~

~~[vi.~~[v. ~~No~~ Construction of subsurface structures shall be ~~constructed~~ allowed on the Property ~~[Property/Contaminated Site]~~ over groundwater containing Hazardous Materials ~~and/~~or petroleum in concentrations exceeding the applicable Department approved ~~GA or~~ GB Groundwater Objectives set forth in the Remediation Regulations, provided the structures are equipped with proper engineered controls, *e.g.* passive sub-slab depressurization system, capable of being converted into an active sub-slab depressurization system; and

~~[vii.~~The engineered controls at the Property ~~[Property/ Contaminated Site]~~ described in the ~~[RAWP or SMP]~~SMP contained in Exhibit B attached hereto shall not be disturbed and shall be properly maintained to prevent humans engaged in ~~[residential or industrial/commercial]~~residential~~industrial/commercial~~ activity from being exposed to soils containing Hazardous Materials and/or petroleum in concentrations exceeding the applicable Department-approved residential~~industrial/commercial~~ ~~[residential or~~

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~~industrial/commercial]~~ Direct Exposure Criteria in accordance with the Remediation Regulations~~; and~~

~~[viii.~~[vi. ~~The engineered controls at the [Property/ Contaminated Site] described in the [RAWP or Soil Management Plan SMP] contained in Exhibit B attached hereto shall not be disturbed and shall be properly maintained so that water does not infiltrate soils containing Hazardous Materials and/or petroleum in concentrations exceeding the applicable Department approved leachability criteria set forth in the Remediation Regulations.~~ .

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B. No action shall be taken, allowed, suffered, or omitted at the ~~[Property/ Contaminated Site]~~Property ~~-~~ **if such action or omission is reasonably likely to:**

i. Create a risk of migration of Hazardous Materials and/or petroleum;
ii. Create a potential hazard to human health or the environment; or
iii. Result in the disturbance of any engineering controls utilized at the Property~~[Property/Contaminated Site]~~, except as permitted in the Department-approved ~~[RAWP or SMP]~~SMP contained in Exhibit B.

C. Emergencies: In the event of any emergency which presents a significant risk to human health or to the environment, including but not limited to, maintenance and repair of utility lines or a response to emergencies such as fire or flood, the application of Paragraphs A (iii.-viii.) and B above may be suspended, provided such risk cannot be abated without suspending such Paragraphs and the Grantor complies with the following:

i. Grantor shall notify the Department's Office of Waste Management in writing of the emergency as soon as possible but no more than three (3) business days after Grantor's having learned of the emergency. (This does not remove Grantor's obligation to notify any other necessary state, local or federal agencies.);

ii. Grantor shall limit both the extent and duration of the suspension to the minimum period reasonable and necessary to adequately respond to the emergency;

iii. Grantor shall implement reasonable measures necessary to prevent actual, potential, present and future risk to human health and the environment resulting from such suspension;

iv. Grantor shall communicate at the time of written notification to the Department its intention to conduct the Emergency Response Actions and provide a schedule to complete the Emergency Response Actions;

v. Grantor shall continue to implement the Emergency Response Actions, on the schedule submitted to the Department, to ensure that the Property ~~[Property/Contaminated Site]~~ is remediated in accordance with the Remediation Regulations (or applicable variance) or restored to its condition prior to such emergency. Based upon information submitted to the Department at the time the ELUR was recorded

pertaining to known environmental conditions at the Property~~[Property/Contaminated Site]~~, emergency maintenance and repair of utility lines shall only require restoration of the Property ~~[Property/Contaminated Site]~~ to its condition prior to the maintenance and repair of the utility lines; and

vi. Grantor shall submit to the Department, within ten (10) days after the completion of the Emergency Response Action, a status report describing the emergency activities that have been completed.

D. Release of Restriction; Alterations of Subject Area: The Grantor shall not make, or allow or suffer to be made, any alteration of any kind in, to, or about any portion of the Property ~~[Property/Contaminated Site]~~ inconsistent with this Restriction unless the Grantor has received the Department's prior written approval for such alteration. If the Department determines that the proposed alteration is significant, the Department may require the amendment of this Restriction. Alterations deemed insignificant by the Department will be approved via a letter from the Department. The Department shall not approve any such alteration and shall not release the Property ~~[Property/Contaminated Site]~~ from the provisions of this Restriction unless the Grantor demonstrates to the Department's satisfaction that Grantor has managed the Property ~~[Property/Contaminated Site]~~ in accordance with applicable regulations.

E. Notice of Lessees and Other Holders of Interests in the Property~~[Property/Contaminated Site]~~: The Grantor, or any future holder of any interest in the Property~~[Property/Contaminated Site]~~, shall cause any lease, grant, or other transfer of any interest in the Property ~~[Property/Contaminated Site]~~ to include a provision expressly requiring the lessee, grantee, or transferee to comply with this Restriction. The failure to include such provision shall not affect the validity or applicability of this Restriction to the Property~~[Property/Contaminated Site]~~.

F. Enforceability: If any court of competent jurisdiction determines that any provision of this Restriction is invalid or unenforceable, the Grantor shall notify the Department in writing within fourteen (14) days of such determination.

G. Binding Effect: All of the terms, covenants, and conditions of this Restriction shall run with the land and shall be binding on the Grantor, its successors and assigns, and each Owner and any other party entitled to control, possession or use of the Property ~~[Property/Contaminated Site]~~ during such period of Ownership or possession.

H. Inspection & Non-Compliance: It shall be the obligation of the Grantor, or any future holder of any interest in the Property~~[Property/Contaminated Site]~~, to provide for annual inspections of the Property ~~[Property/Contaminated Site]~~ for compliance with the ELUR in accordance with Department requirements.

~~[~~An officer or Director of the company with direct knowledge of past and present conditions of the ~~[Property/Contaminated Site]~~Property (the "Company Representative"), or~~]~~ ~~A~~ a qualified environmental professional will, on behalf of the Grantor or future holder of any interest in the Property~~[Property/Contaminated Site]~~, evaluate the compliance status of the

Property ~~[Property/Contaminated Site]~~ on an annual basis. Upon completion of the evaluation, the ~~[Company Representative or]~~ environmental professional will prepare and simultaneously submit to the Department and to the Grantor or future holder of any interest in the Property ~~[Property/Contaminated Site]~~ an evaluation report detailing the findings of the inspection , and noting any compliance violations at the Property~~[Property/Contaminated Site]~~. If the Property ~~[Property/Contaminated Site]~~ is determined to be out of compliance with the terms of the ELUR, the Grantor or future holder of any interest in the Property ~~[Property/Contaminated Site]~~ shall submit a corrective action plan in writing to the Department within ten (10) days of receipt of the evaluation report, indicating the plans to bring the Property ~~[Property/Contaminated Site]~~ into compliance with the ELUR, including, at a minimum, a schedule for implementation of the plan.

In the event of any violation of the terms of this Restriction, which remains uncured more than ninety (90) days after written notice of violation, all Department approvals and agreements relating to the Property ~~[Property/Contaminated Site]~~ may be voided at the sole discretion of the Department.

I. Terms Used Herein: The definitions of terms used herein shall be the same as the definitions contained in Section 1.4~~3~~ (DEFINITIONS) of the Remediation Regulations.

IN WITNESS WHEREOF, the Grantor has hereunto set (his/her) hand and seal on the day and year set forth above.

~~[Name of Person(s), company, LLC or LLP]~~Rhode Island Department of Environmental Management

By: _____ _____
Grantor (signature)_____ _____Grantor (typed name)

STATE OF RHODE ISLAND
COUNTY OF _____

In (CITY/TOWN), in said County and State, on the _____ day of _____, 20___, before me Personally appeared _____, to me known and known by me to be the party executing the foregoing instrument and (he/she) acknowledged said instrument by (him/her) executed to be (his/her) free act and deed.

Notary Public: _____

My Comm. Expires: _____

Exhibits:
A - *Remedial Decision Letter*
B - *Soil Management Plan*

EXHIBIT C
(To the Environmental Land Use Restriction)

SOILS MANAGEMENT PLAN

Seville Dyeing Company
117 & 229 First Avenue
Woonsocket, Rhode Island
(RIDEM Case Nos. SR-39-1221A)

As part of RIDEM-approved remedial activities conducted by GZA at property identified as Plat 6 Lot 117 (the "Property"), an Environmental Land Use Restriction (ELUR) has been recorded to help prevent humans engaged in activities at the Property (as defined in the ELUR) from being exposed to soils containing hazardous substances in concentrations exceeding the applicable Department-approved Industrial/Commercial Direct Exposure Criteria and GB Leachability Criteria pursuant to the Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Remediation Regulations). Specifically, the ELUR requires that the:

- Site use of the Property be limited to restricted residential uses;
- Groundwater at the Property shall not be used as drinking water; and
- This *Soil Management Plan* (recorded with the ELUR) will be implemented should disturbances of on-site soils be required on the Property, as shown on Figure 1.

This *Soils Management Plan* has been prepared to establish procedures that will be followed should future construction/maintenance activities at the Property require the need to manage the excavation of subsurface soils. The plan serves to supplement, and will be initiated by, the RIDEM notification requirement established by the ELUR for the Property.

Potential future construction/maintenance activities at the Property that could result in the excavation of subsurface soils may include the installation and/or maintenance of subsurface utilities, the construction of site structures, and/or surface pavement. Accordingly, this plan will be implemented whenever soils are disturbed within the Property.

A *Site Plan* depicting the relevant features of the Property is attached. In accordance with Section A iii of the ELUR, no soil at the Property is to be disturbed in any manner without prior permission of the Department's Office of Waste Management, except for emergencies; minor inspections; maintenance; and other activities if such other activities do not disturb the contaminated soil at the Property. As part of the notification process, the Property owner shall provide a brief written description of the anticipated activities involving soil excavation. The notification should be submitted to the Department no later than 30 days prior to the proposed initiation of the activities. The description shall include an estimate of the volume of soil to be excavated, a list of the known and anticipated contaminants of

concern, a site figure clearly identifying the proposed areas to be excavated/disturbed, the duration of the project and the proposed disposal location of the soil.

Following written Notification, the Department will determine the post-closure reporting requirements. Significant disturbances of regulated soil will require submission of a Closure Report for Department review documenting that the activities were performed in accordance with this SMP and the Department approved ELUR. Minor disturbances of regulated soil may be documented through the annual certification submitted in accordance with Section H (Inspection & Non-Compliance) of the Department approved ELUR. The Department will also make a determination regarding the necessity of performing Public Notice to abutting property owners/tenants concerning the proposed activities. Work associated with the Notification will not commence until written Department approval has been issued. Once Department approval has been issued, the Department will be notified a minimum of two (2) days prior to the start of activities at the Property. If any significant alterations to the Department approved plan are necessary, a written description of the proposed deviation, will be submitted to the Department for review and written approval shall be granted prior to initiating such changes.

In accordance with the ELUR, emergency work/utility repairs which require disturbing Site soils can be performed without prior written notification to RIDEM. Such work is subject to the requirements outlined in Section C of the ELUR. In addition to the RIDEM notification requirements and environmental considerations presented in that section, it is important that the contractor performing the emergency work/utility repairs be made aware of the Site conditions and provided with a copy of this Soil Management Plan.

CONTAMINANTS OF CONCERN

Direct contact with onsite soil has been identified as a long-term exposure pathway of concern at the property. Soils at the site were found to contain certain constituents, i.e., Polycyclic Aromatic Hydrocarbons (PAHs), total petroleum hydrocarbon (TPH) and metals, at concentrations that exceed the Method 1 Industrial/Commercial Direct Exposure Criteria. In addition, groundwater at the site has been found to contain TPH at significant concentrations.

To address these conditions, a remedial program described in the Remedial Action Work Plan, involving a soil vapor extraction (SVE) system to address TPH contamination in unsaturated soils, erection of a 4-foot tall fence (height subject to change) to prevent exposure and Site capping as part of eventual Site redevelopment.

DESCRIPTION AND MAINTENANCE OF ENGINEERED CONTROLS

The engineered controls are an integral part of the ELUR and SMP and must be maintained to prevent potential human exposure to contaminated soils remaining at the Site. The engineered controls consist of:

- Asphalt parking lots, concrete building slabs, and sidewalks (minimum 4-inches thick);
- A geotextile warning barrier, overlain by 6 inches of crushed stone (or a RIDEM approved equal);
- A geotextile warning barrier, overlain by 12 inches of demonstrated clean backfill (common borrow and/or topsoil); and
- The onsite building was constructed with a passive sub-slab depressurization system, capable of being converted into an active system, to prevent vapor intrusion from residual TPH in soil and groundwater

If disturbance of the structural integrity of the engineered controls, or any other activity inconsistent with the requirements of the ELUR is required at the Site (e.g., utility maintenance and/or repair, emergencies, etc.), RIDEM will be notified in writing prior to scheduled maintenance or repair, or in the case of an emergency, as soon as possible but no more than three (3) business days after Owner/Operator learns of the emergency. As previously discussed, and stated in Paragraph C of the ELUR, in the case of an emergency, the restrictions detailed in Paragraphs A (items iii thru v) and B of the ELUR may be temporarily suspended without first notifying RIDEM. In the case of scheduled excavation and/or maintenance or repair of subsurface utilities; RIDEM will be notified in writing, and a construction plan will be provided, prior to the proposed work. The basic health and safety procedures outlined in this SMP will be followed for excavation work conducted within the ELUR area.

SOIL MANAGEMENT GUIDELINES

The following presents the course of action that will be followed should soil disturbance within the Property occur:

1. As part of the RIDEM notification, the Property owner will provide a brief written description of the anticipated activity(ies) involving soil excavation. The description will include an estimate of the volume of soil to be excavated/disturbed and the duration of the construction project.

2. The selected contractor will be provided with a copy of this *Soil Management Plan* to ensure proper soil management.

3. Prior to the initiation of soil excavation, the selected contractor or any other personnel performing subsurface work at the Property will contact DIGSAFE and appropriate utility companies to identify and mark the location of below grade utilities.

4. Persons involved in the excavation and handling of the contaminated soil on the Property are to take appropriate health and safety precautions. Workers should wear, at a minimum, Level D personal protection equipment (PPE), including gloves and eye protection. Workers should also wash their hands with soap and water prior to eating, drinking, smoking, or leaving the site. Worker's safety boots are required to be brushed with a stiff bristle brush or similar instrument to remove residual soil. Used and

disposable PPE is required to be disposed of according to applicable local, State and Federal Regulations. All vehicles utilized during work shall be properly decontaminated as appropriate prior to leaving the site.

5. In the event that an unexpected observation or situation arises (of an environmental nature) during the work, construction activities will immediately cease. Workers will not attempt to handle the situation themselves, but will contact an environmental professional for further evaluation and direction.

6. During all earthwork activities and dust suppression (e.g., watering, etc) proper techniques will be employed.

7. The stockpiling and disposal procedures detailed in this plan apply only to excess soil which cannot be used as backfill in the original excavation or elsewhere on the Property in an approved manner. Soil generated from an excavation conducted within the ELUR area may be placed back into its original excavation for backfill upon completion of the excavation. The original stratigraphy of soil will be maintained, to the extent practicable, upon backfilling excavations so that the corresponding depth and location of the backfilled materials resembles the depth and location at which the soil originally existed. Alternatively, soil generated from an excavation in the ELUR can be disposed of at an appropriate off-site disposal/treatment facility, as described below.

8. Excavated soils will be staged and temporarily stored in a designated area of the property. Within reason, the storage location will be selected to limit the unauthorized access to the materials (e.g., away from public roadways/walkways). No regulated soil will be stockpiled on-site for more than 60 days without prior RIDEM approval.

9. Excavated regulated soils will be either stockpiled on polyethylene sheeting, or stored in roll-off type containers. In either case, the material in storage will be covered with secured polyethylene sheeting at the end of each workday. Stockpiled materials will be maintained with appropriate controls to limit the loss of the cover and protect against rainfall runoff and stormwater erosion.

10. Soils excavated from the Property may not be used off-site for use as fill on residential properties. Excavated material will not be re-used off-site as fill on industrial/commercial properties unless it meets the Method 1 Residential Direct Exposure Criteria for all constituents listed in the RIDEM's Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases, dated November 2011 (Remediation Regulations). Prior to leaving the Property, soil must be sampled by an environmental professional, at a frequency of one sample per 500 cubic yards for the following constituents:

Analyte	EPA Test Method
Total Petroleum Hydrocarbons	Method 8100M
Volatile Organic Compounds	Method 8260
Semi-Volatile organic compounds	Method 8270
Polychlorinated Biphenyls	Method 8081

Total RCRA Metals	Method 6010 & 7471A
Flashpoint	Method 1010M
Corrosivity (pH)	Method 9045C
Reactivity	Methods SW-846 7.3.3.2/9014 and SW-846 7.3.4.2/376.2

In the event that the soil does not meet these criteria, the material must be properly managed and disposed of off-site at an appropriately licensed facility. Copies of the laboratory analysis results will be maintained by the Property owner and included in the annual inspection report for the Property, or the Closure Report, if applicable.

11. All clean fill, including sub-grade material and loam from native sources, imported to the Property must be sampled and analyzed prior to delivery and placement. Clean fill and loam brought on to the Property must be subjected to the following analytical program:

Analyte	EPA Test Method
Total Petroleum Hydrocarbons	8100M
Volatile Organic Compounds	8260
Semi-Volatile Organic Compounds	8270
Priority Pollutant Metals (PP-13)	6010 & 7471A
PCBs	8082

The frequency of sampling and testing will be:

- Full suite of analysis for up to 2,000 cubic yards, with an additional full suite for each subsequent 2,000 cubic yards of material; and
- Arsenic each 500 cubic yards of material

All soil that is to be utilized on-site must meet the Residential Direct Exposure Criteria and the GB Leachability Criteria (as defined in the Remediation Regulations) for all constituents or be certified to be non-jurisdictional by an environmental professional. Also be advised that the *Closure Report/Annual Inspection Report* for the Property must include all original laboratory analytical data or a statement from the facility that provides the clean fill and/or loam attesting to the materials origin and suitability for use at the Site.

12. Best soil management practices should be employed at all times and regulated soils should be segregated into separate piles (or cells or containers) as appropriate based upon the results of analytical testing, when multiple reuse options are planned (e.g. reuse on-site, reuse at a Department approved Industrial/Commercial property, or reuse/disposal at a Department approved licensed facility). Best management practices also include the managing and minimizing of the migration and/or surface run-off of hazardous materials at the Property during the remedial and/or future disturbances. This should be achieved via the installation of hay bales, silt fencing and any other appropriate measures during the entire duration of the earthwork.

13. Following completion of the construction/earthwork project, a *Closure Report* will be prepared and submitted to RIDEM as required. The report will demonstrate that

following completion of construction activities, the Property is in compliance with the ELUR. Copies of the material shipping records, bills of lading and receiving facility receipts associated with the disposal of the excavated soil will be maintained by the Property owner and will be summarized in the *Closure Report* and in the annual property inspection reports to be completed by the Property Owner Representative and submitted to RIDEM.

GROUNDWATER MANAGEMENT GUILDLINES

As described above, groundwater at the site has been found to contain TPH at significant. Groundwater has been encountered at the Site between approximately 9 and 22 feet below ground surface. Accordingly, the following guidelines have been developed to address dewatering operations conducted at the Property should they become necessary.

1. Should any project require the need for dewatering and/or disturbance of impacted groundwater in support of excavation/construction, a RIDEM Notification will be issued to the Office of Water Resources and Office of Waste Management. The Notification will include a description of plans to manage, contain, treat (if necessary) and discharge or dispose of impacted groundwater. In addition, all appropriate regulatory approvals, including coverage under RIDEM's Remediation General Permit, related to the removal, handling, treatment and discharge of impacted groundwater will be in-place prior to the initiation of the project. Such plans will, at a minimum, include an evaluation of water quality, the method by which water will be treated, contained and/or discharged/disposed and the necessary regulatory approvals, permits, *etc*. **Impacted, untreated groundwater will not be discharged directly to the ground surface, collection utilities, wetlands or water bodies.**

2. Should any project require dewatering, all impacted fluids will either be properly treated for onsite injection, surface water discharge, Publically Owned Treatment Works (POTW) discharge, or containerized for off-site disposal. Any discharges will be performed consistent with all applicable regulations and permits. With respect to fluids to be disposed off-site, they will be properly transferred and containerized to prevent discharges or leaks, characterized per the requirements of the receiving facility, and subsequently transported to a fully licensed/permitted treatment/recycling facility.

BASIC HEALTH AND SAFETY PROCEDURES

The basic health and safety procedures outlined below will be implemented while performing excavation work at the Site. The procedures are intended as a general guideline for basic, short-term excavation and maintenance activities. The contractor conducting the work will be required to follow a health and safety plan developed for their specific activities and personnel in accordance with the OSHA requirements contained in 29 CFR Part 1910.120.

Based on the documented Site conditions, the potential routes of exposure to on-site excavation or utility repair workers include dermal contact (absorption), accidental ingestion

of impacted soil or dust inhalation. Utilization of the appropriate personal protective equipment (PPE) and the general safety guidelines provided below will minimize the potential for worker exposure while performing work within the Property.

Personal Protective Equipment (PPE)

In general, the level of protection that will be used by workers will be determined by the task that the person is performing; however, at a minimum Level D PPE will be worn at all times while performing excavation activities within the ELUR area. Level D PPE will, at a minimum, consist of the following PPE:

1. Steel-toe work boots with over-boots as needed;
2. Eye protection (safety glasses or chemical splash goggles);
3. Work gloves;
4. Hard hat; and
5. Work coveralls.

Site Operating Procedures/Safety Guidelines

Regardless of the level of PPE necessary to complete work in the ELUR area, the following general health and safety guidelines will be followed during the performance of any excavation activities conducted within the ELUR area. Adherence to these guidelines will reduce the potential for worker exposure to impacted media.

1. All work conducted on-site shall be coordinated through a designated employee responsible for the implementation of the requirements of this SMP (including all health and safety procedures);
2. The location of all utilities in the vicinity of the excavation will be established prior to beginning work;
3. All spectators will remain outside the designated Exclusion Zone (established as a 50 foot perimeter beyond the area of excavation);
4. A pre-work meeting will be conducted at the beginning of each day to discuss the health and safety procedures;
5. Practice contamination avoidance: never sit down or kneel in an excavation; never lay equipment on the ground; avoid obvious sources of contamination such as puddles; and avoid unnecessary contact with objects in an excavation;
6. Be alert to any unusual changes in your physical condition; never ignore warning signs. Notify the responsible employee as to suspected exposures;
7. All equipment used in an excavation will be properly cleaned and maintained in good working order. Equipment will be inspected for signs of defect and/or contamination before use and prior to demobilization from the Property;
8. Eating, drinking, chewing gum, and smoking are prohibited in active excavation areas; and
9. The discovery of any condition that would suggest the existence of a situation more hazardous than anticipated shall result in the evacuation of site personnel

from the excavation and the re-evaluation of the hazard and the required level of protection.

In Case of Serious Exposure or Injury

In the event of serious chemical exposure or worker injury, the responsible employee will immediately be alerted. This person will follow the steps indicated below:

1. Summon appropriate emergency response agency by using the emergency phone numbers provided below. Convey the following information:

    a. Nature of emergency,
    b. Location of victim,
    c. Specific information about exposure or accident (gases, chemical, asphyxiation, etc.),
    d. Length of exposure, and
    e. Hazards which may be involved in rescue or treatment;

2. If taken to a hospital, notify the hospital of the background of the problem:

    a. Potential for hospital contamination,
    b. Any contaminated items and the nature of the contamination, and
    c. Estimated arrival time.

Emergency Phone Numbers

Emergency telephone numbers and the directions to the nearest hospital are included below. User is cautioned that this information should be checked and updated, if necessary.

Response Agency	**Phone Number**
Ambulance	911 or (401) 726-2000
Police	911 or (401) 766-1212
Fire	911 or (401) 765-2500
RIDEM/Office of Compliance & Inspection/Emergency Response Program	(401) 222-1360 or (401) 222-3070 (non-business hours)
USEPA/Hazardous Materials Spills	(800) 424-8802
Poison Control Center	(800) 222-1222
Dig Safe (Utility Clearance)	1-888-DIGSAFE
Hospital	
Landmark Medical Center Emergency Department 115 Cass Ave Woonsocket, RI 02895	(401) 769-4100
Route to Hospital	
Total Distance: 2.4 Miles	
Estimate Time: 9 Minutes	
Directions	**Distance**
1: Turn SOUTH on 1st Ave toward Chestnut St	0.1 mi

2: Turn LEFT onto Fairmount St	0.3 mi
3: Turn RIGHT onto River St	0.5 mi
4: Turn LEFT onto Market Square	331 ft
5: Turn RIGHT onto Bernon St	249 ft
6: Turn LEFT onto Truman Dr	0.5 mi
7: Turn RIGHT at the 1st cross street onto Clinton St	0.4 mi
8: Turn RIGHT onto Cumberland St	0.3 mi
9: Turn LEFT onto Cass Ave	0.2 mi
10: Turn RIGHT	154 ft

Attachments: Figure 1

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Appendix G
ENVIRONMENTAL LAND USAGE RESTRICTION

This Declaration of Environmental Land Usage Restriction ("Restriction") is made on this _____ day of _____, 2020~~—~~ by ~~[property owner]~~the City of Woonsocket, and its successors and/or assigns (hereinafter, the "Grantor").

WITNESSETH:

WHEREAS, the Grantor ~~_____ (name)~~the Rhode Island Department of Environmental Management (RIDEM) is the Owner in fee simple of certain real property identified as Plat 6/Lots 102 and 118~~[specify Plat, Lot(s), address and Town or City~~] Rhode Island (the "Property"), more particularly described in Exhibit A (Legal Description) which is attached hereto and made a part hereof;

WHEREAS, the Property ~~(or portion thereof identified in the Class I survey which is attached hereto as Exhibit 2A and is made a part hereof)~~ has been determined to contain soil ~~and/or groundwater~~ which is contaminated with certain Hazardous Materials and ~~/or~~ petroleum at concentrations in excess of applicable Method 1 Residential~~Industrial/Commercial~~ Direct Exposure Criteria and GB Leachability Criteria ~~[residential or industrial/commercial Direct Exposure Criteria, and/or applicable groundwater objective]~~ ~~criteria~~ pursuant to the Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases ("Remediation Regulations");

WHEREAS, the Grantor and the Department have determined that the environmental land use restrictions set forth below are consistent with the regulations adopted by the Rhode Island Department of Environmental Management ("Department") pursuant to R.I.G.L. § 23-19.14-1 and that this restriction shall be a Conservation Restriction pursuant to R.I.G.L. § 34-39--1 et. seq. and shall not be subject to the 30 year limitation provided in R.I.G.L. § 34-4-21;

WHEREAS, the Department's written approval of this Restriction is contained in the document entitled: Remedial Approval~~Decision~~ Letter,~~[Remedial Decision Letter/ Settlement Agreement/ Order of Approval/ Remedial Approval Letter]~~ issued pursuant to the Remediation Regulations;

WHEREAS, to prevent exposure to or migration of Hazardous Substances and to abate hazards to human health and/or the environment, and in accordance with the ~~[Remedial Decision Letter/ Remedial Agreement/ Order of Approval/ Remedial Approval Letter],~~Remedial Decision Letter, the Grantor desires to impose certain restrictions upon the use, occupancy, and activities of and at the ~~[Property/Contaminated Site]~~Property;

WHEREAS, the Grantor believes that this Restriction will effectively protect public health and the environment from such contamination; and

WHEREAS, the Grantor intends that such restrictions shall run with the land and be binding upon and enforceable against the Grantor and the Grantor's successors and assigns.

NOW, THEREFORE, Grantor agrees as follows:

A. Restrictions Applicable to the ~~[Property/Contaminated Site]~~Property: In accordance with the Remedial Decision Letter,~~[Remedial Decision Letter/ Remedial Agreement/ Order of Approval/ Remedial Approval Letter],~~ the use, occupancy and activity of and at the Property~~[Property/ Contaminated Site]~~ is restricted as follows:

i. No residential use of the Property~~[Property/Contaminated Site]~~ ~~-~~shall be permitted that is contrary to Department approvals and restrictions contained herein;

ii. No groundwater at the Property~~[Property/Contaminated Site]~~ shall be used as potable water;

iii. No soil at the Property ~~[Property/Contaminated Site]~~ shall be disturbed in any manner without written permission of the Department's Office of Waste Management, except as permitted in the Remedial Action Work Plan (RAWP) or Soil Management Plan (SMP) approved by the Department in a written approval letter dated _____(date) Exhibit B and attached hereto;

[iv. Humans engaged in activities at the Property~~[Property/Contaminated Site]~~ shall not be exposed to soils containing Hazardous Materials and/or petroleum in concentrations exceeding the applicable Department approved Direct Exposure Criteria set forth in the Remediation Regulations;

~~[v.Water at the [Property/Contaminated Site] shall be prohibited from infiltrating soils containing Hazardous Materials and/or petroleum in concentrations exceeding the applicable Department approved leachability criteria set forth in the Remediation Regulations;~~

~~[vi.~~[v. ~~No~~ Construction of subsurface structures shall be ~~constructed~~ allowed on the Property ~~[Property/Contaminated Site]~~ over groundwater containing Hazardous Materials ~~and/~~or petroleum in concentrations exceeding the applicable Department approved ~~GA or~~ GB Groundwater Objectives set forth in the Remediation Regulations, provided the structures are equipped with proper engineered controls, *e.g.* passive sub-slab depressurization system, capable of being converted into an active sub-slab depressurization system; and

~~[vii.~~The engineered controls at the Property ~~[Property/ Contaminated Site]~~ described in the ~~[RAWP or SMP]~~SMP contained in Exhibit B attached hereto shall not be disturbed and shall be properly maintained to prevent humans engaged in ~~[residential or industrial/commercial]~~residential~~industrial/commercial~~ activity from being exposed to soils containing Hazardous Materials and/or petroleum in concentrations exceeding

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the applicable Department-approved residential~~industrial/commercial~~ ~~**[residential or industrial/commercial]**~~ Direct Exposure Criteria in accordance with the Remediation Regulations~~; and~~

~~[viii.~~[~~vi.~~ ~~The engineered controls at the **[Property/ Contaminated Site]** described in the **[RAWP or Soil Management Plan SMP]** contained in Exhibit B attached hereto shall not be disturbed and shall be properly maintained so that water does not infiltrate soils containing Hazardous Materials and/or petroleum in concentrations exceeding the applicable Department-approved leachability criteria set forth in the Remediation Regulations.~~ .

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B. No action shall be taken, allowed, suffered, or omitted at the ~~**[Property/ Contaminated Site]**~~Property ~~-~~ **if such action or omission is reasonably likely to:**

i. Create a risk of migration of Hazardous Materials and/or petroleum;
ii. Create a potential hazard to human health or the environment; or
iii. Result in the disturbance of any engineering controls utilized at the Property~~**[Property/Contaminated Site]**~~, except as permitted in the Department-approved ~~**[RAWP or SMP]**~~SMP contained in Exhibit B.

C. Emergencies: In the event of any emergency which presents a significant risk to human health or to the environment, including but not limited to, maintenance and repair of utility lines or a response to emergencies such as fire or flood, the application of Paragraphs A (iii.-viii.) and B above may be suspended, provided such risk cannot be abated without suspending such Paragraphs and the Grantor complies with the following:

i. Grantor shall notify the Department's Office of Waste Management in writing of the emergency as soon as possible but no more than three (3) business days after Grantor's having learned of the emergency. (This does not remove Grantor's obligation to notify any other necessary state, local or federal agencies.);

ii. Grantor shall limit both the extent and duration of the suspension to the minimum period reasonable and necessary to adequately respond to the emergency;

iii. Grantor shall implement reasonable measures necessary to prevent actual, potential, present and future risk to human health and the environment resulting from such suspension;

iv. Grantor shall communicate at the time of written notification to the Department its intention to conduct the Emergency Response Actions and provide a schedule to complete the Emergency Response Actions;

v. Grantor shall continue to implement the Emergency Response Actions, on the schedule submitted to the Department, to ensure that the Property ~~**[Property/Contaminated Site]**~~ is remediated in accordance with the Remediation Regulations (or applicable variance) or restored to its condition prior to such emergency. Based upon

information submitted to the Department at the time the ELUR was recorded pertaining to known environmental conditions at the Property~~[Property/Contaminated Site]~~, emergency maintenance and repair of utility lines shall only require restoration of the Property ~~[Property/Contaminated Site]~~ to its condition prior to the maintenance and repair of the utility lines; and

vi. Grantor shall submit to the Department, within ten (10) days after the completion of the Emergency Response Action, a status report describing the emergency activities that have been completed.

D. Release of Restriction; Alterations of Subject Area: The Grantor shall not make, or allow or suffer to be made, any alteration of any kind in, to, or about any portion of the Property ~~[Property/Contaminated Site]~~ inconsistent with this Restriction unless the Grantor has received the Department's prior written approval for such alteration. If the Department determines that the proposed alteration is significant, the Department may require the amendment of this Restriction. Alterations deemed insignificant by the Department will be approved via a letter from the Department. The Department shall not approve any such alteration and shall not release the Property ~~[Property/Contaminated Site]~~ from the provisions of this Restriction unless the Grantor demonstrates to the Department's satisfaction that Grantor has managed the Property ~~[Property/Contaminated Site]~~ in accordance with applicable regulations.

E. Notice of Lessees and Other Holders of Interests in the Property~~[Property/Contaminated Site]~~: The Grantor, or any future holder of any interest in the Property~~[Property/Contaminated Site]~~, shall cause any lease, grant, or other transfer of any interest in the Property ~~[Property/Contaminated Site]~~ to include a provision expressly requiring the lessee, grantee, or transferee to comply with this Restriction. The failure to include such provision shall not affect the validity or applicability of this Restriction to the Property~~[Property/Contaminated Site]~~.

F. Enforceability: If any court of competent jurisdiction determines that any provision of this Restriction is invalid or unenforceable, the Grantor shall notify the Department in writing within fourteen (14) days of such determination.

G. Binding Effect: All of the terms, covenants, and conditions of this Restriction shall run with the land and shall be binding on the Grantor, its successors and assigns, and each Owner and any other party entitled to control, possession or use of the Property ~~[Property/Contaminated Site]~~ during such period of Ownership or possession.

H. Inspection & Non-Compliance: It shall be the obligation of the Grantor, or any future holder of any interest in the Property~~[Property/Contaminated Site]~~, to provide for annual inspections of the Property ~~[Property/Contaminated Site]~~ for compliance with the ELUR in accordance with Department requirements.

~~[~~An officer or Director of the company with direct knowledge of past and present conditions of the ~~[Property/Contaminated Site]~~Property (the "Company Representative"), or~~]~~ ~~A~~ a qualified environmental professional will, on behalf of the Grantor or future holder of any

interest in the Property~~[Property/Contaminated Site]~~, evaluate the compliance status of the Property ~~[Property/Contaminated Site]~~ on an annual basis. Upon completion of the evaluation, the ~~[Company Representative or]~~ environmental professional will prepare and simultaneously submit to the Department and to the Grantor or future holder of any interest in the Property ~~[Property/Contaminated Site]~~ an evaluation report detailing the findings of the inspection , and noting any compliance violations at the Property~~[Property/Contaminated Site]~~. If the Property ~~[Property/Contaminated Site]~~ is determined to be out of compliance with the terms of the ELUR, the Grantor or future holder of any interest in the Property ~~[Property/Contaminated Site]~~ shall submit a corrective action plan in writing to the Department within ten (10) days of receipt of the evaluation report, indicating the plans to bring the Property ~~[Property/Contaminated Site]~~ into compliance with the ELUR, including, at a minimum, a schedule for implementation of the plan.

In the event of any violation of the terms of this Restriction, which remains uncured more than ninety (90) days after written notice of violation, all Department approvals and agreements relating to the Property ~~[Property/Contaminated Site]~~ may be voided at the sole discretion of the Department.

I. Terms Used Herein: The definitions of terms used herein shall be the same as the definitions contained in Section 3 (DEFINITIONS) of the Remediation Regulations.

IN WITNESS WHEREOF, the Grantor has hereunto set (his/her) hand and seal on the day and year set forth above.

~~[Name of Person(s), company, LLC or LLP]~~Rhode Island Department of Environmental Management

By: _____ _____
Grantor (signature)_____ _____Grantor (typed name)

STATE OF RHODE ISLAND
COUNTY OF _____

In (CITY/TOWN), in said County and State, on the _____ day of _____, 20___, before me Personally appeared _____, to me known and known by me to be the party executing the foregoing instrument and (he/she) acknowledged said instrument by (him/her) executed to be (his/her) free act and deed.

Notary Public: _____

My Comm. Expires: _____

Exhibits:
A - *Remedial Decision Letter*
B - *Soil Management Plan*

EXHIBIT C
(To the Environmental Land Use Restriction)

SOILS MANAGEMENT PLAN

Seville Dyeing Company
117 & 229 First Avenue
Woonsocket, Rhode Island
(RIDEM Case Nos. SR-39-1221A)

As part of RIDEM-approved remedial activities conducted by GZA at property identified as Plat 6 Lots 102 and 118 (the "Property"), an Environmental Land Use Restriction (ELUR) has been recorded to help prevent humans engaged in activities at the Property (as defined in the ELUR) from being exposed to soils containing hazardous substances in concentrations exceeding the applicable Department-approved Industrial/Commercial Direct Exposure Criteria and GB Leachability Criteria pursuant to the Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Remediation Regulations). Specifically, the ELUR requires that the:

- Site use of the Property be limited to restricted residential uses;
- Groundwater at the Property shall not be used as drinking water; and
- This *Soil Management Plan* (recorded with the ELUR) will be implemented should disturbances of on-site soils be required on the Property, as shown on Figure 1.

This *Soils Management Plan* has been prepared to establish procedures that will be followed should future construction/maintenance activities at the Property require the need to manage the excavation of subsurface soils. The plan serves to supplement, and will be initiated by, the RIDEM notification requirement established by the ELUR for the Property.

Potential future construction/maintenance activities at the Property that could result in the excavation of subsurface soils may include the installation and/or maintenance of subsurface utilities, the construction of site structures, and/or surface pavement. Accordingly, this plan will be implemented whenever soils are disturbed within the Property.

A *Site Plan* depicting the relevant features of the Property is attached. In accordance with Section A iii of the ELUR, no soil at the Property is to be disturbed in any manner without prior permission of the Department's Office of Waste Management, except for emergencies; minor inspections; maintenance; and other activities if such other activities do not disturb the contaminated soil at the Property. As part of the notification process, the Property owner shall provide a brief written description of the anticipated activities involving soil excavation. The notification should be submitted to the Department no later than 30 days prior to the proposed initiation of the activities. The description shall include an estimate of the volume of soil to be excavated, a list of the known and anticipated contaminants of

concern, a site figure clearly identifying the proposed areas to be excavated/disturbed, the duration of the project and the proposed disposal location of the soil.

Following written Notification, the Department will determine the post-closure reporting requirements. Significant disturbances of regulated soil will require submission of a Closure Report for Department review documenting that the activities were performed in accordance with this SMP and the Department approved ELUR. Minor disturbances of regulated soil may be documented through the annual certification submitted in accordance with Section H (Inspection & Non-Compliance) of the Department approved ELUR. The Department will also make a determination regarding the necessity of performing Public Notice to abutting property owners/tenants concerning the proposed activities. Work associated with the Notification will not commence until written Department approval has been issued. Once Department approval has been issued, the Department will be notified a minimum of two (2) days prior to the start of activities at the Property. If any significant alterations to the Department approved plan are necessary, a written description of the proposed deviation, will be submitted to the Department for review and written approval shall be granted prior to initiating such changes.

In accordance with the ELUR, emergency work/utility repairs which require disturbing Site soils can be performed without prior written notification to RIDEM. Such work is subject to the requirements outlined in Section C of the ELUR. In addition to the RIDEM notification requirements and environmental considerations presented in that section, it is important that the contractor performing the emergency work/utility repairs be made aware of the Site conditions and provided with a copy of this Soil Management Plan.

CONTAMINANTS OF CONCERN

Direct contact with onsite soil has been identified as a long-term exposure pathway of concern at the property. Soils at the site were found to contain certain constituents, i.e., Polycyclic Aromatic Hydrocarbons (PAHs), total petroleum hydrocarbon (TPH) and metals, at concentrations that exceed the Method 1 Industrial/Commercial Direct Exposure Criteria. In addition, groundwater at the site has been found to contain TPH at significant concentrations.

To address these conditions, a remedial program described in the Remedial Action Work Plan, involving a soil vapor extraction (SVE) system to address TPH contamination in unsaturated soils, erection of a 4-foot tall fence (height subject to change) to prevent exposure and Site capping as part of eventual Site redevelopment.

DESCRIPTION AND MAINTENANCE OF ENGINEERED CONTROLS

The engineered controls are an integral part of the ELUR and SMP and must be maintained to prevent potential human exposure to contaminated soils remaining at the Site. The engineered controls consist of:

- Asphalt parking lots, concrete building slabs, and sidewalks (minimum 4-inches thick);
- A geotextile warning barrier, overlain by 6 inches of crushed stone (or a RIDEM approved equal);
- A geotextile warning barrier, overlain by 12 inches of demonstrated clean backfill (common borrow and/or topsoil); and
- The onsite building was constructed with a passive sub-slab depressurization system, capable of being converted into an active system, to prevent vapor intrusion from residual TPH in soil and groundwater

If disturbance of the structural integrity of the engineered controls, or any other activity inconsistent with the requirements of the ELUR is required at the Site (e.g., utility maintenance and/or repair, emergencies, etc.), RIDEM will be notified in writing prior to scheduled maintenance or repair, or in the case of an emergency, as soon as possible but no more than three (3) business days after Owner/Operator learns of the emergency. As previously discussed, and stated in Paragraph C of the ELUR, in the case of an emergency, the restrictions detailed in Paragraphs A (items iii thru v) and B of the ELUR may be temporarily suspended without first notifying RIDEM. In the case of scheduled excavation and/or maintenance or repair of subsurface utilities; RIDEM will be notified in writing, and a construction plan will be provided, prior to the proposed work. The basic health and safety procedures outlined in this SMP will be followed for excavation work conducted within the ELUR area.

SOIL MANAGEMENT GUIDELINES

The following presents the course of action that will be followed should soil disturbance within the Property occur:

1. As part of the RIDEM notification, the Property owner will provide a brief written description of the anticipated activity(ies) involving soil excavation. The description will include an estimate of the volume of soil to be excavated/disturbed and the duration of the construction project.

2. The selected contractor will be provided with a copy of this *Soil Management Plan* to ensure proper soil management.

3. Prior to the initiation of soil excavation, the selected contractor or any other personnel performing subsurface work at the Property will contact DIGSAFE and appropriate utility companies to identify and mark the location of below grade utilities.

4. Persons involved in the excavation and handling of the contaminated soil on the Property are to take appropriate health and safety precautions. Workers should wear, at a minimum, Level D personal protection equipment (PPE), including gloves and eye protection. Workers should also wash their hands with soap and water prior to eating, drinking, smoking, or leaving the site. Worker's safety boots are required to be brushed with a stiff bristle brush or similar instrument to remove residual soil. Used and

disposable PPE is required to be disposed of according to applicable local, State and Federal Regulations. All vehicles utilized during work shall be properly decontaminated as appropriate prior to leaving the site.

5. In the event that an unexpected observation or situation arises (of an environmental nature) during the work, construction activities will immediately cease. Workers will not attempt to handle the situation themselves, but will contact an environmental professional for further evaluation and direction.

6. During all earthwork activities and dust suppression (e.g., watering, etc) proper techniques will be employed.

7. The stockpiling and disposal procedures detailed in this plan apply only to excess soil which cannot be used as backfill in the original excavation or elsewhere on the Property in an approved manner. Soil generated from an excavation conducted within the ELUR area may be placed back into its original excavation for backfill upon completion of the excavation. The original stratigraphy of soil will be maintained, to the extent practicable, upon backfilling excavations so that the corresponding depth and location of the backfilled materials resembles the depth and location at which the soil originally existed. Alternatively, soil generated from an excavation in the ELUR can be disposed of at an appropriate off-site disposal/treatment facility, as described below.

8. Excavated soils will be staged and temporarily stored in a designated area of the property. Within reason, the storage location will be selected to limit the unauthorized access to the materials (e.g., away from public roadways/walkways). No regulated soil will be stockpiled on-site for more than 60 days without prior RIDEM approval.

9. Excavated regulated soils will be either stockpiled on polyethylene sheeting, or stored in roll-off type containers. In either case, the material in storage will be covered with secured polyethylene sheeting at the end of each workday. Stockpiled materials will be maintained with appropriate controls to limit the loss of the cover and protect against rainfall runoff and stormwater erosion.

10. Soils excavated from the Property may not be used off-site for use as fill on residential properties. Excavated material will not be re-used off-site as fill on industrial/commercial properties unless it meets the Method 1 Residential Direct Exposure Criteria for all constituents listed in the RIDEM's Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases, dated November 2011 (Remediation Regulations). Prior to leaving the Property, soil must be sampled by an environmental professional, at a frequency of one sample per 500 cubic yards for the following constituents:

Analyte	EPA Test Method
Total Petroleum Hydrocarbons	Method 8100M
Volatile Organic Compounds	Method 8260
Semi-Volatile organic compounds	Method 8270
Polychlorinated Biphenyls	Method 8081

Total RCRA Metals	Method 6010 & 7471A
Flashpoint	Method 1010M
Corrosivity (pH)	Method 9045C
Reactivity	Methods SW-846 7.3.3.2/9014 and SW-846 7.3.4.2/376.2

In the event that the soil does not meet these criteria, the material must be properly managed and disposed of off-site at an appropriately licensed facility. Copies of the laboratory analysis results will be maintained by the Property owner and included in the annual inspection report for the Property, or the Closure Report, if applicable.

11. All clean fill, including sub-grade material and loam from native sources, imported to the Property must be sampled and analyzed prior to delivery and placement. Clean fill and loam brought on to the Property must be subjected to the following analytical program:

Analyte	EPA Test Method
Total Petroleum Hydrocarbons	8100M
Volatile Organic Compounds	8260
Semi-Volatile Organic Compounds	8270
Priority Pollutant Metals (PP-13)	6010 & 7471A
PCBs	8082

The frequency of sampling and testing will be:

- Full suite of analysis for up to 2,000 cubic yards, with an additional full suite for each subsequent 2,000 cubic yards of material; and
- Arsenic each 500 cubic yards of material

All soil that is to be utilized on-site must meet the Residential Direct Exposure Criteria and the GB Leachability Criteria (as defined in the Remediation Regulations) for all constituents or be certified to be non-jurisdictional by an environmental professional. Also be advised that the *Closure Report/Annual Inspection Report* for the Property must include all original laboratory analytical data or a statement from the facility that provides the clean fill and/or loam attesting to the materials origin and suitability for use at the Site.

12. Best soil management practices should be employed at all times and regulated soils should be segregated into separate piles (or cells or containers) as appropriate based upon the results of analytical testing, when multiple reuse options are planned (e.g. reuse on-site, reuse at a Department approved Industrial/Commercial property, or reuse/disposal at a Department approved licensed facility). Best management practices also include the managing and minimizing of the migration and/or surface run-off of hazardous materials at the Property during the remedial and/or future disturbances. This should be achieved via the installation of hay bales, silt fencing and any other appropriate measures during the entire duration of the earthwork.

13. Following completion of the construction/earthwork project, a *Closure Report* will be prepared and submitted to RIDEM as required. The report will demonstrate that

following completion of construction activities, the Property is in compliance with the ELUR. Copies of the material shipping records, bills of lading and receiving facility receipts associated with the disposal of the excavated soil will be maintained by the Property owner and will be summarized in the *Closure Report* and in the annual property inspection reports to be completed by the Property Owner Representative and submitted to RIDEM.

GROUNDWATER MANAGEMENT GUILDLINES

As described above, groundwater at the site has been found to contain TPH at significant. Groundwater has been encountered at the Site between approximately 9 and 22 feet below ground surface. Accordingly, the following guidelines have been developed to address dewatering operations conducted at the Property should they become necessary.

1. Should any project require the need for dewatering and/or disturbance of impacted groundwater in support of excavation/construction, a RIDEM Notification will be issued to the Office of Water Resources and Office of Waste Management. The Notification will include a description of plans to manage, contain, treat (if necessary) and discharge or dispose of impacted groundwater. In addition, all appropriate regulatory approvals, including coverage under RIDEM's Remediation General Permit, related to the removal, handling, treatment and discharge of impacted groundwater will be in-place prior to the initiation of the project. Such plans will, at a minimum, include an evaluation of water quality, the method by which water will be treated, contained and/or discharged/disposed and the necessary regulatory approvals, permits, *etc*. **Impacted, untreated groundwater will not be discharged directly to the ground surface, collection utilities, wetlands or water bodies.**

2. Should any project require dewatering, all impacted fluids will either be properly treated for onsite injection, surface water discharge, Publically Owned Treatment Works (POTW) discharge, or containerized for off-site disposal. Any discharges will be performed consistent with all applicable regulations and permits. With respect to fluids to be disposed off-site, they will be properly transferred and containerized to prevent discharges or leaks, characterized per the requirements of the receiving facility, and subsequently transported to a fully licensed/permitted treatment/recycling facility.

BASIC HEALTH AND SAFETY PROCEDURES

The basic health and safety procedures outlined below will be implemented while performing excavation work at the Site. The procedures are intended as a general guideline for basic, short-term excavation and maintenance activities. The contractor conducting the work will be required to follow a health and safety plan developed for their specific activities and personnel in accordance with the OSHA requirements contained in 29 CFR Part 1910.120.

Based on the documented Site conditions, the potential routes of exposure to on-site excavation or utility repair workers include dermal contact (absorption), accidental ingestion

of impacted soil or dust inhalation. Utilization of the appropriate personal protective equipment (PPE) and the general safety guidelines provided below will minimize the potential for worker exposure while performing work within the Property.

Personal Protective Equipment (PPE)

In general, the level of protection that will be used by workers will be determined by the task that the person is performing; however, at a minimum Level D PPE will be worn at all times while performing excavation activities within the ELUR area. Level D PPE will, at a minimum, consist of the following PPE:

1. Steel-toe work boots with over-boots as needed;
2. Eye protection (safety glasses or chemical splash goggles);
3. Work gloves;
4. Hard hat; and
5. Work coveralls.

Site Operating Procedures/Safety Guidelines

Regardless of the level of PPE necessary to complete work in the ELUR area, the following general health and safety guidelines will be followed during the performance of any excavation activities conducted within the ELUR area. Adherence to these guidelines will reduce the potential for worker exposure to impacted media.

1. All work conducted on-site shall be coordinated through a designated employee responsible for the implementation of the requirements of this SMP (including all health and safety procedures);
2. The location of all utilities in the vicinity of the excavation will be established prior to beginning work;
3. All spectators will remain outside the designated Exclusion Zone (established as a 50 foot perimeter beyond the area of excavation);
4. A pre-work meeting will be conducted at the beginning of each day to discuss the health and safety procedures;
5. Practice contamination avoidance: never sit down or kneel in an excavation; never lay equipment on the ground; avoid obvious sources of contamination such as puddles; and avoid unnecessary contact with objects in an excavation;
6. Be alert to any unusual changes in your physical condition; never ignore warning signs. Notify the responsible employee as to suspected exposures;
7. All equipment used in an excavation will be properly cleaned and maintained in good working order. Equipment will be inspected for signs of defect and/or contamination before use and prior to demobilization from the Property;
8. Eating, drinking, chewing gum, and smoking are prohibited in active excavation areas; and
9. The discovery of any condition that would suggest the existence of a situation more hazardous than anticipated shall result in the evacuation of site personnel

from the excavation and the re-evaluation of the hazard and the required level of protection.

In Case of Serious Exposure or Injury

In the event of serious chemical exposure or worker injury, the responsible employee will immediately be alerted. This person will follow the steps indicated below:

1. Summon appropriate emergency response agency by using the emergency phone numbers provided below. Convey the following information:

    a. Nature of emergency,
    b. Location of victim,
    c. Specific information about exposure or accident (gases, chemical, asphyxiation, etc.),
    d. Length of exposure, and
    e. Hazards which may be involved in rescue or treatment;

2. If taken to a hospital, notify the hospital of the background of the problem:

    a. Potential for hospital contamination,
    b. Any contaminated items and the nature of the contamination, and
    c. Estimated arrival time.

Emergency Phone Numbers

Emergency telephone numbers and the directions to the nearest hospital are included below. User is cautioned that this information should be checked and updated, if necessary.

Response Agency	**Phone Number**
Ambulance	911 or (401) 726-2000
Police	911 or (401) 766-1212
Fire	911 or (401) 765-2500
RIDEM/Office of Compliance & Inspection/Emergency Response Program	(401) 222-1360 or (401) 222-3070 (non-business hours)
USEPA/Hazardous Materials Spills	(800) 424-8802
Poison Control Center	(800) 222-1222
Dig Safe (Utility Clearance)	1-888-DIGSAFE
Hospital	
Landmark Medical Center Emergency Department 115 Cass Ave Woonsocket, RI 02895	(401) 769-4100
Route to Hospital	
Total Distance: 2.4 Miles	
Estimate Time: 9 Minutes	
Directions	**Distance**
1: Turn SOUTH on 1st Ave toward Chestnut St	0.1 mi

2: Turn LEFT onto Fairmount St	0.3 mi
3: Turn RIGHT onto River St	0.5 mi
4: Turn LEFT onto Market Square	331 ft
5: Turn RIGHT onto Bernon St	249 ft
6: Turn LEFT onto Truman Dr	0.5 mi
7: Turn RIGHT at the 1st cross street onto Clinton St	0.4 mi
8: Turn RIGHT onto Cumberland St	0.3 mi
9: Turn LEFT onto Cass Ave	0.2 mi
10: Turn RIGHT	154 ft

Attachments: Figure 1

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GZA GeoEnvironmental, Inc.