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Via Email

October 31, 2019
File No. 04.0190961.00

Mr. Jeffrey Stephens
Health Director
Town of Westford
55 Main Street
Westford, Massachusetts 01886

Re: Pre-Construction Air Quality Screening
Proposed Newport Materials Asphalt Plant
Westford, Massachusetts

Dear Jeff:

GZA GeoEnvironmental, Inc. (GZA) is pleased to present the Town of Westford (Town), this summary report of the findings and results of the pre-construction screening air quality monitoring performed this past May in the general vicinity of the proposed Newport Materials asphalt plant at 540 Groton Road in Westford. Limitations for this summary report are attached herein.

BACKGROUND

As requested by the Town, GZA collected pre-construction screening level air quality monitoring data during the days of May 6-9, and May 30 at five selected locations to evaluate concentrations of volatile organic compounds (VOCs), particulate matter, lead, and asphalt fume. The five sampling locations were located at Greystone Field off Russells Way, Danley Drive, Chandler Road, Morrison Lane, and the Rita E. Miller Elementary School. All sampling locations ranged from 0.75-1.0 miles northwest of the proposed asphalt plant and were intended to represent areas closest to the plant routinely occupied by Town of Westford residents. **Figure 1** is a locus map showing the area in the vicinity of the proposed asphalt plant. **Figure 2** shows the specific locations where monitoring was performed.

GZA understands the intent of the sampling was to gather limited air quality monitoring data to supplement the available air quality data for the area, which we understand includes dispersion modeling, risk assessment, and Department of Environmental Protection (DEP) / US Environmental Protection Agency (EPA) monitoring data. As we previously discussed, air quality monitoring results are inherently variable and subject to uncertainty due to the temporal and spacial variability of meteorological conditions and air pollutant sources.

PROCEDURES

In accordance with our proposal, GZA performed real time monitoring for the following parameters at each location. A RAE Systems MiniRAE photoionization detector (PID) and a TSI DustTrak 8520 were used to collect real-time measurements of VOC and particulate

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matter (PM10) at each location. GZA recorded the VOC and PM10 concentration every 15 minutes. The DustTrak was programmed to run for 8 hours, record the PM10 concentration every minute, and update the displayed concentration every 10 seconds. For the sampling days May 6-9, the DustTrak was not able to operate under battery power for 8 hours on a full charge. On May 8 and 9, GZA charged the DustTrak after a period of operation so that it could be operated for the remainder of the time on-site. Start and stop times for each monitoring event can be found in **Table 1**.

In addition, two air samples were collected at each of the five locations over the five sampling days (i.e., one location per workday) for lead, asphalt fume, and speciated VOCs. A total of 10 samples were obtained for each analyte. The samples were collected as follows:

1. Samples for lead were collected utilizing 37 millimeter (mm) mixed cellulose ester membrane filter cassettes paired with a constant flow sampling pump set to a flow rate of 2.5 liters per minute (LPM). The sampling pumps drew in surrounding air and passed it through the membrane filter cassettes specifically designed to capture lead. The pumps ran for 480 minutes, passing approximately 1,200 liters of air over eight hours through the cassettes. The samples were analyzed using modified National Institute of Occupational Safety and Health (NIOSH) method 7303.
2. Samples for asphalt fume were collected utilizing 25 mm Teflon polytetrafluoroethylene filter cassettes paired with a constant flow sampling pump set to a flow rate of 2.0 LPM. The sampling pumps drew in surrounding air and passed it through the membrane filter cassettes specifically designed to capture asphalt fumes. The pumps ran for 480 minutes, passing approximately 960 liters of air over 8 hours through the cassettes. The samples were analyzed using modified National Institute of Occupational Safety and Health (NIOSH) method 5042.
3. Samples for speciated VOCs in air were collected using a certified passivated steel canister, evacuated to a vacuum of approximately 30 inches mercury. Samples were collected over an approximate 8-hour period, using a flow controlling regulator. These samples were analyzed by EPA Method TO-15.

Samples were collected and handled in accordance with generally accepted standards of care for industrial hygiene samples, which includes utilizing unique sample identification numbers and chain-of-custody protocols. The samples were shipped to SGS Galson Laboratories, an American Industrial Hygiene Association (AIHA) and a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory, to analyze the data collected for this monitoring event.

RESULTS

Sampling was performed at each monitoring location and analyzed for lead, asphalt fume, and speciated VOC by EPA Method TO-15. Lead and asphalt fume were not detected above their respective levels of quantification in any of the samples collected. Speciated VOC analysis of each canister sample was performed using USEPA Method TO-15 for 75 compounds. Several VOC compounds were detected above the laboratory detection limit. The table below summarizes the VOC compounds detected, including the maximum concentration detected and common sources of emission for each the VOC. Please refer to **Table 1, attached**, for a summary of the laboratory analytical results, including lead, asphalt fumes and VOCs at each sampling location

Volatile Organic Compound	Maximum Concentration (ppbv)	Potential Sources of VOC emission
Freon-12	0.53	Common refrigerant - automobile, residential, commercial and industrial cooling and refrigeration equipment
Chloromethane	0.56	Formerly a common refrigerant - Industrial uses include use in chemical synthesis, as a propellant and as a blowing agent
n-Butane	0.33	Common organic gas - Liquefied petroleum gas household products
Ethanol	5.5	Common simple alcohol - gasoline, household products



Volatile Organic Compound	Maximum Concentration (ppbv)	Potential Sources of VOC emission
Acetonitrile	1.8	Common solvent - auto exhaust and nail polishes and removers
Acetone	3.6	Common solvent - household products, nail polishes and removers
Freon-11	0.26	Common refrigerant - automobile, residential, commercial and industrial cooling and refrigeration equipment
Isopropyl Alcohol	1.0	Common alcohol - household products
Pentane	1.3	Common organic compound - propellant and blowing agent, solvent for household products (e.g. pesticide)
Methyl Ethyl Ketone	0.26	Common ketone - gasoline, household products
Ethyl Acetate	0.73	Common organic, solvent - animal waste, plant volatiles, perfumes, nail polish and removers, food products, fruit
1,2-Dichloroethane	0.31	Common industrial compound - typically detected in ambient air at concentrations up to 1.5 ppb
Toluene	0.36	Common organic solvent – paint thinner, auto industry, household products

Field monitoring for VOC and PM10 was also performed in real-time using a PID and DustTrak monitor, respectively. The PID 15-minute readings across all locations ranged from 0.0 parts per million (ppm) to 0.2 ppm. VOC were not detected (i.e., < 0.01 ppm) during the real-time PID monitoring at the Greystone Field and Elementary School locations. The average VOC concentration ranged from 0.09 ppm to 0.12 ppm at the other three monitoring locations. The DustTrak was equipped with datalogging capabilities which recorded the dust concentration readings each minute. The DustTrak results for PM10 across all sites ranged from <0.001 milligram per cubic meter (mg/m³) to 0.063 mg/m³. The average concentrations for the five locations ranged from 0.002 mg/m³ to 0.023 mg/m³. The field measured VOC and PM10 results are summarized on **Table 2**.

We appreciate this opportunity to be of service to the Town of Westford. If you have any questions regarding this summary report, please do not hesitate to contact Mr. Kenneth Boivin at 603-232-8719.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Samuel P. Despina, P.E., CHMM
Project Manager

Michael P. North, P.E.
Consultant Reviewer

Kenneth D. Boivin, CHMM
Principal

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Attachments: Limitations
Figures
Tables
Laboratory Report



Limitations



USE OF REPORT

1. GZA GeoEnvironmental, Inc. (GZA) has prepared this report on behalf of, and for the exclusive use of the Town of Westford ("Client") 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 risk, and without any liability to GZA.

STANDARD OF CARE

2. 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.
3. The observations, findings, conclusions and recommendations in this report were made under the conditions observed or discovered at the site during our visit(s) and described herein. The conclusions presented in this report were based solely upon the services described in this report and not upon scientific tasks or procedures beyond the scope of described services or the time and budgetary constraints imposed by Client. Where and when applicable, the conclusions and recommendations provided in this report are based, in part, upon observations made on-site and the data obtained from a limited number of indoor and/or outdoor biological, chemical, or physical samples collected from different locations during various times of day and are contingent upon their validity. The nature and extent of variations between these sample results may not become evident until further investigation has been conducted. If variations or other latent or hidden conditions then appear evident after further investigation, it may be necessary to reevaluate the recommendations of this report. Moreover, it should be noted that variations in the types and concentrations of contaminants and variations in their distribution may occur due to the life cycle or decomposition of these contaminants and ambient conditions. Should additional data become available in the future, these data should be reviewed by GZA, and the conclusions and recommendations presented therein modified accordingly.
4. Where quantitative laboratory analyses have been conducted by an outside laboratory, GZA has exclusively relied upon the data provided and has not conducted an independent evaluation of the reliability of these data, including, but not limited to, the analytical methods, equipment, or analyst(s). GZA utilizes laboratories which maintain accreditation by the American Industrial Hygiene Association or other appropriate accreditation(s), certification(s), or licensure.
5. Chemical, physical, or biological analyses, or a combination thereof, may have been performed for specific parameters during the course of this study, as detailed in the report. Additional constituents for which searches were not conducted during the current study may be present at the site.

COMPLIANCE WITH CODES AND REGULATIONS

6. The regulatory compliance status described in this report, where and when applicable, has been evaluated based on our interpretation of industry guidelines and regulations, and where appropriate, the interpretations provided by the applicable regulatory authority personnel at the time of this work. In some cases, these interpretations require subjective judgment and GZA cannot guarantee or warrant that all applicable regulatory authority personnel will interpret the regulations in the same manner as GZA and the agency personnel with whom we have spoken have interpreted them. Applicable regulatory authorities' interpretations, requirements and enforcement policies vary from district office to district office, from state to state and between federal and state agencies. In addition, statutes, rules, standards, regulations and interagency and intra-agency policies may be changed from time to time.



INTERPRETATION OF DATA

7. The purpose of our work was to evaluate airborne concentrations of specific contaminants for comparison to current available industry recommended and/or regulatory guidelines or exposure limits if and where applicable. No attempt was made to evaluate potential health effects among any exposed person or group of people.
8. GZA's findings and conclusions must not be considered as scientific certainties, but rather as our professional opinions concerning the significance of the limited data gathered during the course of the work and the visual observations made on-site. No warranty, express or implied, is made. Specifically, GZA does not and cannot represent that the site contains no hazardous material, oil, or other latent or hidden conditions beyond that observed by GZA during its work. Additionally, GZA makes no warranty that any response action or recommended action will achieve all of its objectives or that the findings of this work will be upheld by an applicable regulatory authority.
9. The conclusions and recommendations contained in this report are based on limited environmental sampling and were arrived at in accordance with generally accepted standards of industrial hygiene and toxicology practices. The sampling results can be considered representative of the conditions present at the site only during the sampling period and only to the extent the sampling results are considered accurate, as indicated in the report. Sampling results are not necessarily representative of conditions at the site at times other than during the sampling period, or at locations at the site other than where sampling is performed.

NEW INFORMATION

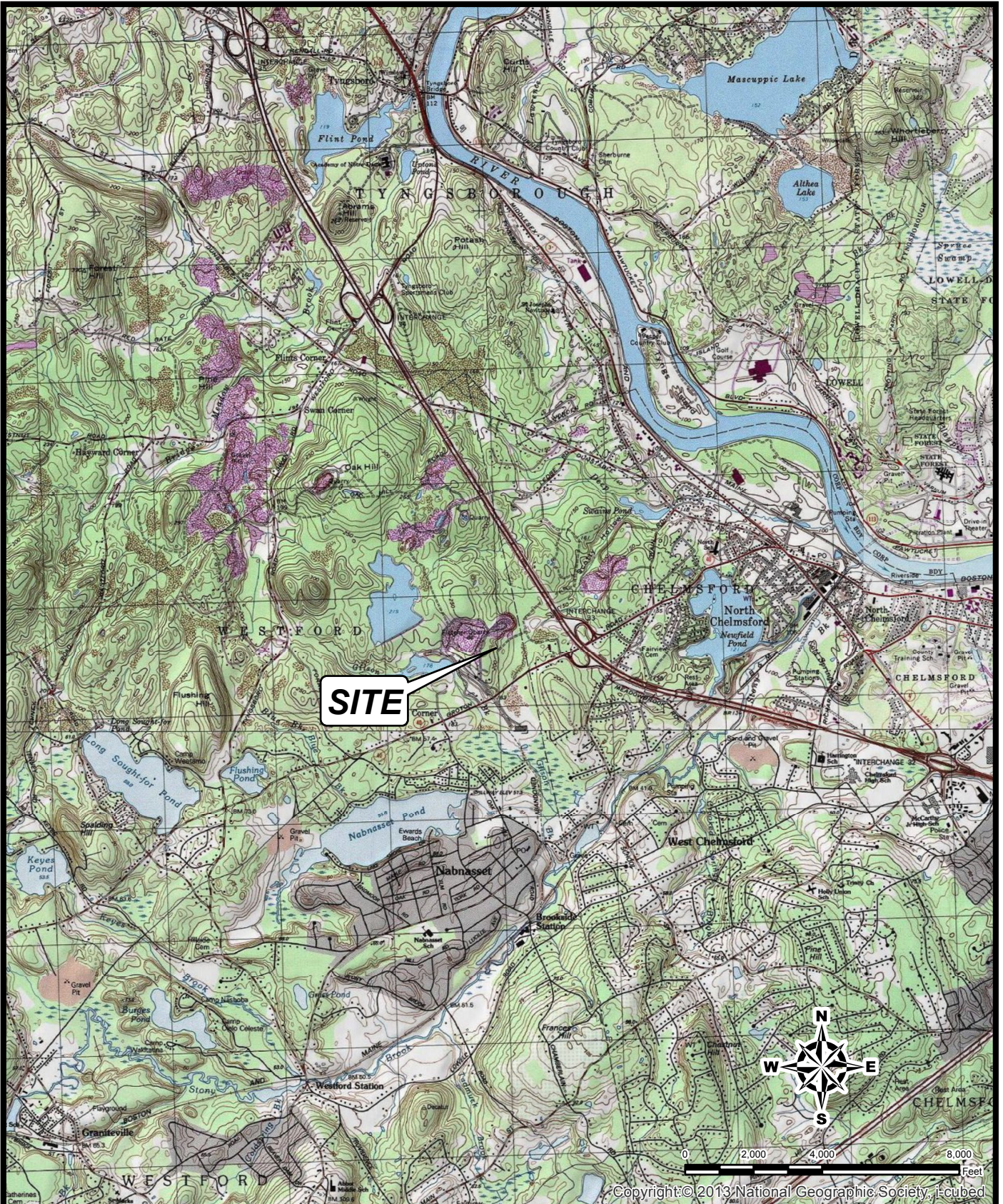
10. In the event that the Client or others authorized to use this report obtain information on environmental regulatory compliance issues at the site not contained in this report, such information shall be brought to GZA's attention forthwith. GZA will evaluate such information and, on the basis of this work, may modify the conclusions stated in this report.

ADDITIONAL SERVICES

11. GZA recommends that we be retained to provide further investigation or abatement, if necessary, which would allow GZA to: (1) observe compliance with the concepts and recommendations contained herein; (2) evaluate whether the manner of implementation creates a potential new finding; and (3) evaluate whether the manner of implementation affects or changes the conditions on which our opinions were made.



Figures



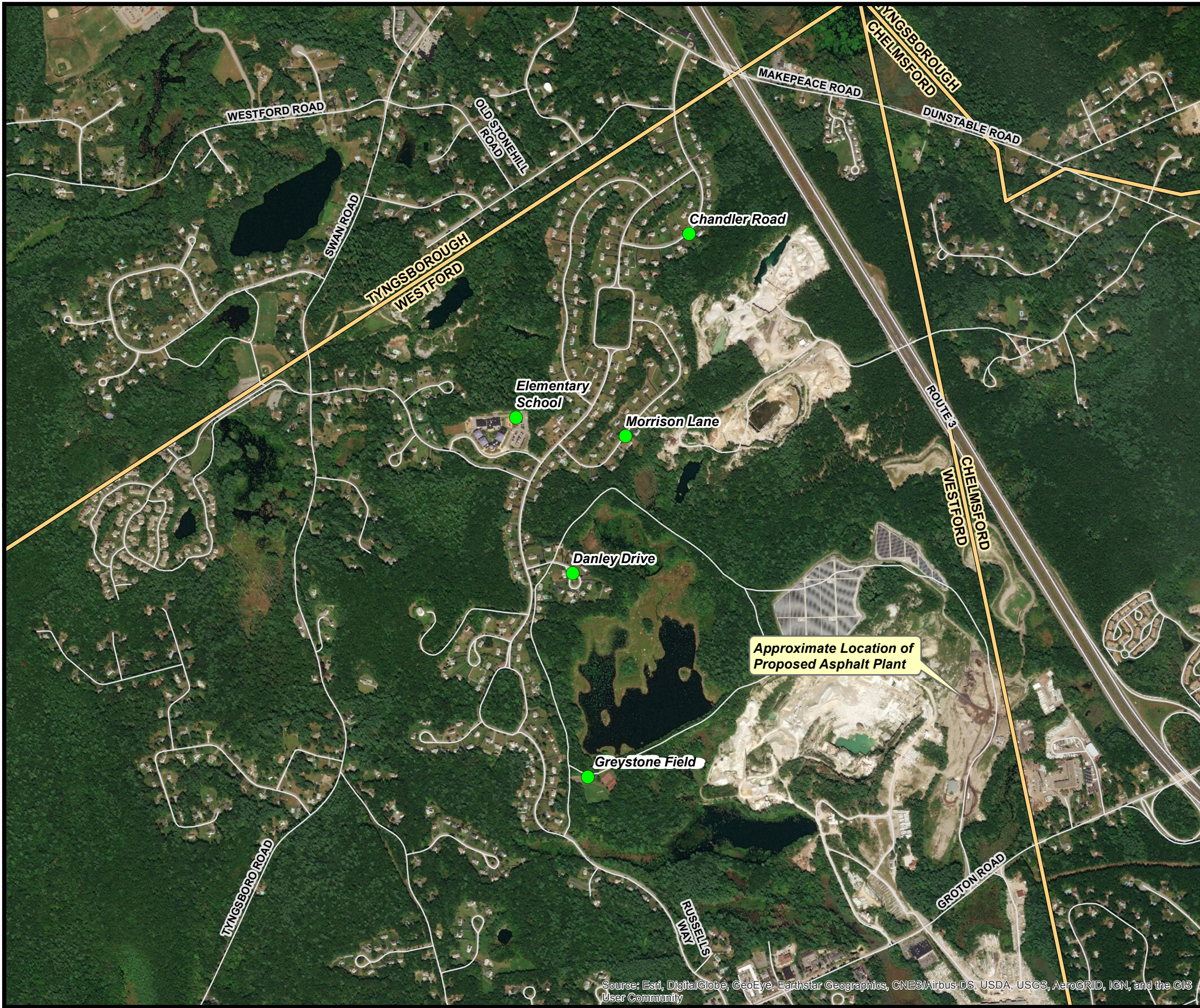
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NO.	ISSUE / DESCRIPTION		BY DATE
PREPARED BY:		PREPARED FOR:	
 GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		TOWN OF WESTFORD, MASSACHUSETTS	
PROJ MGR:	SPD	REVIEWED BY:	KDB
DESIGNED BY:	MJD	CHECKED BY:	MPN
DATE:	OCT 2019	DRAWN BY:	MJD
PROJECT NO.		SCALE: 1 in = 4,000 ft	
04.0190961.00		REVISION NO.	
		FIGURE 1	

AIR QUALITY MONITORING
WESTFORD, MASSACHUSETTS

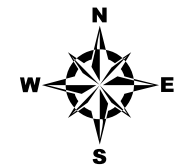
LOCUS PLAN

© 2019 - GZA GeoEnvironmental, Inc. P:\04\lbs\0190906\04_0190961\00\Figures\GIS\MXD\Site Plan.mxd, 10/29/2019, 3:40:07 PM, matthew.deane



LEGEND

-  AIR QUALITY MONITORING LOCATION
-  ROAD
-  TOWN BOUNDARY



0 500 1,000 2,000
SCALE IN FEET

1) THIS MAP CONTAINS THE ESRI ArcGIS ONLINE WORLD IMAGERY MAP SERVICE, PUBLISHED DECEMBER 12, 2009 BY ESRI ARCIMS SERVICES AND UPDATED OFTEN. THIS SERVICE USES UNIFORM NATIONALLY RECOGNIZED DATUM AND CARTOGRAPHY STANDARDS AND A VARIETY OF AVAILABLE SOURCES FROM SEVERAL DATA PROVIDERS.



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AIR QUALITY MONITORING
WESTFORD, MASSACHUSETTS

AIR QUALITY MONITORING SAMPLING LOCATION PLAN

PREPARED BY:

 **GZA GeoEnvironmental, Inc.**
Engineers and Scientists
www.gza.com

PREPARED FOR:

TOWN OF WESTFORD,
MASSACHUSETTS

PROJ MGR: SPD

REVIEWED BY: KDB

CHECKED BY: MPN

FIG

DESIGNED BY: MJD

DRAWN BY: MJD

SCALE: 1" = 1,000 FEET

2

DATE: 10/29/2019

PROJECT NO. 04.0190961.00

REVISION NO.

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Tables

TABLE 1
SUMMARY OF AIR MONITORING RESULTS
Town of Westford, Massachusetts

Constituent	Units	Greystone Field		Danley Drive		Morrison Lane		Chandler Road		Elementary School	
		Ballfields-1 5/6/2019 09:20 - 17:20	Ballfields-2 5/6/2019 09:20 - 17:20	Danley Drive-1 5/7/2019 08:25 - 16:25	Danley Drive-2 5/7/2019 08:25 - 16:25	Morrison Ln-1 5/8/2019 08:55 - 16:55	Morrison Ln-2 5/8/2019 08:55 - 16:55	Chandler Road-1 5/9/2019 08:55 - 16:55	Chandler Road-2 5/9/2019 08:55 - 16:55	Rita School-1 5/30/2019 08:40 - 16:40	Rita School-2 5/30/2019 08:40 - 16:40
Lead	Liters	1156.8	1204.8	1204.8	1056.0	1192.8	1214.4	1192.8	1214.4	1194.0	1194.0
	mg/m ³	<0.00032	<0.00031	<0.00031	<0.00036	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031
Asphalt Fume	Liters	996.0	1022.4	969.6	969.6	960.0	960.0	984.0	984.0	968.5	968.5
	mg/m ³	<0.050	<0.049	<0.052	<0.052	<0.052	<0.052	<0.051	<0.051	<0.052	<0.052
Propylene	ppbv	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Freon-12	ppbv	0.53	0.53	0.51	0.51	0.50	0.51	0.52	0.51	0.42	0.43
Chloromethane	ppbv	0.54	0.56	0.52	0.50	0.51	0.50	0.52	0.49	0.51	0.53
Freon-114	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Vinyl Chloride	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
1,3-Butadiene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
n-Butane	ppbv	0.22	0.33	0.22	0.24	<0.16	0.16	0.18	0.20	0.19	0.20
Bromomethane	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Chloroethane	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Ethanol	ppbv	2.8	5.5	1.4	2.4	2.4	2.5	1.4	1.4	1.7	1.9
Acetonitrile	ppbv	1.4	1.8	0.60	1.4	0.60	0.60	<0.50	<0.50	0.60	0.70
Vinyl Bromide	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Acrolein	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Acetone	ppbv	2.4	3.6	2.6	3.6	2.2	2.4	2.2	2.1	2.5	2.5
Freon-11	ppbv	0.26	0.24	0.24	0.23	0.23	0.24	0.25	0.24	0.19	0.19
Isopropyl Alcohol	ppbv	0.60	0.5	<0.50	1.0	0.60	<0.50	<0.50	<0.50	0.7	0.6
Acrylonitrile	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Pentane	ppbv	0.44	1.3	<0.16	0.28	<0.16	0.42	<0.16	<0.16	<0.16	<0.16
Ethyl Bromide	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
1,1-Dichloroethane	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
tert-Butyl Alcohol	ppbv	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Freon-113	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Carbon Disulfide	ppbv	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Allyl Chloride	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
trans-1,2-Dichloroethene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
1,1-Dichloroethane	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
MTBE	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Vinyl Acetate	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Methyl Ethyl Ketone	ppbv	0.19	0.26	<0.16	0.20	<0.16	<0.16	<0.16	<0.16	0.26	0.22
cis-1,2-Dichloroethylene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Hexane	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Ethyl Acetate	ppbv	0.31	0.73	<0.16	0.59	0.23	0.26	0.21	<0.16	0.31	<0.16
Chloroform	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Tetrahydrofuran	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
1,2-Dichloroethane	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	0.31	<0.16
1,1,1-Trichloroethane	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Benzene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Carbon Tetrachloride	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Cyclohexane	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
1,2-Dichloropropane	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Bromodichloromethane	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
1,4-Dioxane	ppbv	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
2,2,4-Trimethylpentane	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Methyl Methacrylate	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16

TABLE 1
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Town of Westford, Massachusetts

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		Ballfields-1 5/6/2019 09:20 - 17:20	Ballfields-2 5/6/2019 09:20 - 17:20	Danley Drive-1 5/7/2019 08:25 - 16:25	Danley Drive-2 5/7/2019 08:25 - 16:25	Morrison Ln-1 5/8/2019 08:55 - 16:55	Morrison Ln-2 5/8/2019 08:55 - 16:55	Chandler Road-1 5/9/2019 08:55 - 16:55	Chandler Road-2 5/9/2019 08:55 - 16:55	Rita School-1 5/30/2019 08:40 - 16:40	Rita School-2 5/30/2019 08:40 - 16:40
Heptane	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
cis-1,3-Dichloropropene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
trans-1,3-Dichloropropene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
1,1,2-Trichloroethane	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Methyl Isobutyl Ketone	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Toluene	ppbv	<0.16	0.36	<0.16	0.21	<0.16	<0.16	<0.16	<0.16	0.16	<0.16
Methyl Butyl Ketone	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Dibromochloromethane	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
1,2-Dibromoethane	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Tetrachloroethylene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Chlorobenzene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Ethylbenzene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
m & p-xylene	ppbv	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32
Bromoform	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Styrene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
1,1,2,2-Tetrachloroethane	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
o-Xylene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Nonane	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Cumene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
2-Chlorotoluene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
n-Propylbenzene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
4-Ethyltoluene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
1,3,5-Trimethylbenzene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
1,2,4-Trimethylbenzene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Benzyl Chloride	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
1,3-Dichlorobenzene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
1,4-Dichlorobenzene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
1,2-Dichlorobenzene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
Naphthalene	ppbv	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16

Notes:

1. Bolded values indicate the compound was detected.
2. ppbv = parts per billion by volume
3. Sample volume is based on the field measured average flow rate (liters per minute) multiplied by the run time of 480 minutes.

TABLE 2
SUMMARY OF AIR MONITORING FIELD MEASUREMENTS
Town of Westford, Massachusetts

Sample Location	Field Measurements					
	Dusttrak min.	Dusttrak max.	Dusttrak Avg.	PID min.	PID Max.	PID Avg.
	PM10 (mg/m3)			VOC (ppm)		
Greystone Field	0.000	0.009	0.002	0.0	0.0	0.0
Danley Drive	0.004	0.012	0.007	0.10	0.20	0.12
Morrison Lane	0.001	0.010	0.005	0.0	0.20	0.10
Chandler Road	0.015	0.063	0.023	0.0	0.10	0.09
Elementary School	0.008	0.016	0.011	0.0	0.0	0.0

Notes:

- The Dusttrak ran during the following periods on the days of sampling:
Greystone Field (5/6/19): 08:50-13:00
Danley Drive (5/7/19): 08:30-11:30, 13:30-15:00
Morrison Lane (5/8/19): 09:00-12:00, 13:30-17:00
Chandler Road (5/9/19): 09:00-12:15, 13:30-17:00
Elementary School (5/30/19): 08:40-16:40
- The Dusttrak monitored for PM 10 continuously for the times listed in Note 1, recording measurements on a data logger every 60 seconds.



Laboratory Report



Mr. Samuel Despins
GZA GeoEnvironmental, Inc.
5 Commerce Park North
Suite 201
Bedford, NH 03110

May 28, 2019

Account# 28289

Login# L479688

Dear Samuel Despins:

Enclosed are the analytical results for the samples received by our laboratory on May 14, 2019. All samples on the chain of custody were received in good condition unless otherwise noted. Any additional observations will be noted on the chain of custody.

Please contact client services at (888) 432-5227 if you would like any additional information regarding this report. Thank you for using SGS Galson.

Sincerely,

SGS Galson

A handwritten signature in cursive script that reads "Lisa Swab".

Lisa Swab
Laboratory Director

Enclosure(s)

Terms and Conditions & General Disclaimers

- This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.
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Analytical Disclaimers

- Unless otherwise noted within the report, all quality control results associated with the samples were within established control limits or did not impact reported results.
- Note: The findings recorded within this report were drawn from analysis of the sample(s) provided to the laboratory by the Client (or a third party acting at the Client's direction). The laboratory does not have control over the sampling process, including but not limited to the use of field equipment and collection media, as well as the sampling duration, collection volume or any other collection parameter used by the Client. The findings herein constitute no warranty of the sample's representativeness of any sampled environment, and strictly relate to the samples as they were presented to the laboratory. For recommended sampling collection parameters, please refer to the Sampling and Analysis Guide at www.sgsgalson.com.
- Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceding the final result column may have been rounded and therefore, if carried through the calculations, may not yield an identical final result to the one reported.
- The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).
- Unless otherwise noted within the report, results have not been blank corrected for any field blank or method blank data.

Accreditations SGS Galson holds a variety of accreditations and recognitions. Our quality management system conforms with the requirements of ISO/IEC 17025. Where applicable, samples may also be analyzed in accordance with the requirements of ELAP, NELAC, or LELAP under one of the state accrediting bodies listed below. Current Scopes of Accreditation can be viewed at <http://www.sgsgalson.com> in the accreditations section of the "About" page. To determine if the analyte tested falls under our scope of accreditation, please visit our website or call Client Services at (888) 432-5227.

National/International	Accreditation/Recognition	Lab ID#	Program/Sector
AIHA-LAP, LLC - IHLAP, ELLAP, EMLAP	ISO/IEC 17025 and USEPA NLLAP	Lab ID 100324	Industrial Hygiene, Environmental Lead, Environmental Microbiology

State	Accreditation/Recognition	Lab ID#	Program/Sector
New York (NYSDOH)	ELAP and NELAC (TNI)	Lab ID: 11626	Air Analysis, Solid and Hazardous Waste
New Jersey (NJDEP)	NELAC (TNI)	Lab ID: NY024	Air Analysis
Louisiana (LDEQ)	LELAP	Lab ID: 04083	Air Analysis, Solid Chemical Materials
Texas	Texas Dept. of Licensing and Regulation	Lab ID: 1042	Mold Analysis Laboratory license

Legend

< - Less than	mg - Milligrams	MDL - Method Detection Limit	ppb - Parts per Billion
> - Greater than	ug - Micrograms	NA - Not Applicable	ppm - Parts per Million
l - Liters	m3 - Cubic Meters	NS - Not Specified	ppbv - ppb Volume
LOQ - Limit of Quantitation	kg - Kilograms	ND - Not Detected	ppmv - ppm Volume
ft2 - Square Feet	cm2 - Square Centimeters	in2 - Square Inches	ng - Nanograms



GALSON

LABORATORY ANALYSIS REPORT

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.sgsgalson.com

Client : GZA GeoEnvironmental, Inc.
Site : Town of Westford, MA
Project No. : Baseline AQ Sampling
Date Sampled : 06-MAY-19 - 10-MAY-19
Date Received : 14-MAY-19

Account No.: 28289
Login No. : L479688
Date Analyzed : 17-MAY-19
Report ID : 1135810

Lead

<u>Sample ID</u>	<u>Lab ID</u>	<u>Air Vol</u> <u>liter</u>	<u>Total</u> <u>ug</u>	<u>Conc</u> <u>mg/m3</u>
BLANK PB	L479688-1	NA	<0.38	NA
BALLFIELDS #1 PB	L479688-2	1156.8	<0.38	<0.00032
BALLFIELDS #2 PB	L479688-3	1204.8	<0.38	<0.00031
DANLEY DRIVE #1 PB	L479688-4	1204.8	<0.38	<0.00031
DANLEY DRIVE #2 PB	L479688-5	1056	<0.38	<0.00036
MORRISON LANE #1 PB	L479688-6	1192.8	<0.38	<0.00031
MORRISON LN #2 PB	L479688-7	1214.4	<0.38	<0.00031
CHANDLER ROAD #1 PB	L479688-8	1192.8	<0.38	<0.00031
CHANDLER RD #2 PB	L479688-9	1214.4	<0.38	<0.00031

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of Quantitation: 0.38 ug

Analytical Method : mod. NIOSH 7303/mod. OSHA ID-125G; ICP Date : 20-MAY-19

Collection Media : MCE UW 37mm

Submitted by: LZM/EJB

Supervisor : KEG

Approved by: JJL

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LABORATORY ANALYSIS REPORT

LELAP Lab ID #04083

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.sgsgalson.com

Client : GZA GeoEnvironmental, Inc.
Site : Town of Westford, MA
Project No. : Baseline AQ Sampling

Date Sampled : 06-MAY-19 - 09-MAY-19 Account No.: 28289
Date Received : 14-MAY-19 Login No. : L479688
Date Analyzed : 24-MAY-19 Units : ppbv
Report ID : 1137244

Galson ID:	LOQ	L479688-19	L479688-20	L479688-21
Client ID:	ppbv	BALLFIELDS #1 VOC	BALLFIELDS #2 VOC	DANLEY DR #1 VOC
Propylene	0.50	<0.50	<0.50	<0.50
Freon-12	0.16	0.53	0.53	0.51
Chloromethane	0.16	0.54	0.56	0.52
Freon-114	0.16	<0.16	<0.16	<0.16
Vinyl Chloride	0.16	<0.16	<0.16	<0.16
1,3-Butadiene	0.16	<0.16	<0.16	<0.16
n-Butane	0.16	0.22	0.33	0.22
Bromomethane	0.16	<0.16	<0.16	<0.16
Chloroethane	0.16	<0.16	<0.16	<0.16
Ethanol	0.50	2.8	5.5	1.4
Acetonitrile	0.50	1.4	1.8	0.60
Vinyl Bromide	0.16	<0.16	<0.16	<0.16
Acrolein	0.16	<0.16	<0.16	<0.16
Acetone	0.50	2.4	3.6	2.6
Freon-11	0.16	0.26	0.24	0.24
Isopropyl Alcohol	0.50	0.60	0.50	<0.50

Analytical Method: mod. OSHA PV2120/mod. EPA TO15; GC/MS
Collection Media : 6L Canister
Submitted by : BLD

Supervisor: SAP
Approved by : SAP
Date : 28-MAY-19



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LABORATORY ANALYSIS REPORT

LELAP Lab ID #04083

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East Syracuse, NY 13057
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www.sgsgalson.com

Client : GZA GeoEnvironmental, Inc.
Site : Town of Westford, MA
Project No. : Baseline AQ Sampling

Date Sampled : 06-MAY-19 - 09-MAY-19
Date Received : 14-MAY-19
Date Analyzed : 24-MAY-19
Report ID : 1137244

Account No.: 28289
Login No. : L479688
Units : ppbv

Galson ID:	LOQ	L479688-19	L479688-20	L479688-21
Client ID:	ppbv	BALLFIELDS #1 VOC	BALLFIELDS #2 VOC	DANLEY DR #1 VOC
Acrylonitrile	0.16	<0.16	<0.16	<0.16
Pentane	0.16	0.44	1.3	<0.16
Ethyl Bromide	0.16	<0.16	<0.16	<0.16
1,1-Dichloroethene	0.16	<0.16	<0.16	<0.16
tert-Butyl Alcohol	0.50	<0.50	<0.50	<0.50
Methylene Chloride	0.16	<0.16	<0.16	<0.16
Freon-113	0.16	<0.16	<0.16	<0.16
Carbon Disulfide	0.50	<0.50	<0.50	<0.50
Allyl Chloride	0.16	<0.16	<0.16	<0.16
trans-1,2-Dichloroethene	0.16	<0.16	<0.16	<0.16
1,1-Dichloroethane	0.16	<0.16	<0.16	<0.16
Methyl tert-Butyl Ether	0.16	<0.16	<0.16	<0.16
Vinyl Acetate	0.16	<0.16	<0.16	<0.16
Methyl Ethyl Ketone	0.16	0.19	0.26	<0.16
cis-1,2-Dichloroethylene	0.16	<0.16	<0.16	<0.16
Hexane	0.16	<0.16	<0.16	<0.16

Analytical Method: mod. OSHA PV2120/mod. EPA TO15; GC/MS
Collection Media : 6L Canister
Submitted by : BLD

Supervisor: SAP
Approved by : SAP
Date : 28-MAY-19



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Client : GZA GeoEnvironmental, Inc.
Site : Town of Westford, MA
Project No. : Baseline AQ Sampling

Date Sampled : 06-MAY-19 - 09-MAY-19 Account No.: 28289
Date Received : 14-MAY-19 Login No. : L479688
Date Analyzed : 24-MAY-19 Units : ppbv
Report ID : 1137244

Galson ID:	LOQ	L479688-19	L479688-20	L479688-21
Client ID:	ppbv	BALLFIELDS #1 VOC	BALLFIELDS #2 VOC	DANLEY DR #1 VOC
Ethyl Acetate	0.16	0.31	0.73	<0.16
Chloroform	0.16	<0.16	<0.16	<0.16
Tetrahydrofuran	0.16	<0.16	<0.16	<0.16
1,2-Dichloroethane	0.16	<0.16	<0.16	<0.16
1,1,1-Trichloroethane	0.16	<0.16	<0.16	<0.16
Benzene	0.16	<0.16	<0.16	<0.16
Carbon Tetrachloride	0.16	<0.16	<0.16	<0.16
Cyclohexane	0.16	<0.16	<0.16	<0.16
1,2-Dichloropropane	0.16	<0.16	<0.16	<0.16
Bromodichloromethane	0.16	<0.16	<0.16	<0.16
1,4-Dioxane	0.50	<0.50	<0.50	<0.50
Trichloroethylene	0.16	<0.16	<0.16	<0.16
2,2,4-Trimethylpentane	0.16	<0.16	<0.16	<0.16
Methyl Methacrylate	0.16	<0.16	<0.16	<0.16
Heptane	0.16	<0.16	<0.16	<0.16
cis-1,3-Dichloropropene	0.16	<0.16	<0.16	<0.16

Analytical Method: mod. OSHA PV2120/mod. EPA TO15; GC/MS
Collection Media : 6L Canister
Submitted by : BLD

Approved by : SAP
Date : 28-MAY-19

Supervisor: SAP



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Client : GZA GeoEnvironmental, Inc.
Site : Town of Westford, MA
Project No. : Baseline AQ Sampling

Date Sampled : 06-MAY-19 - 09-MAY-19 Account No.: 28289
Date Received : 14-MAY-19 Login No. : L479688
Date Analyzed : 24-MAY-19 Units : ppbv
Report ID : 1137244

Galson ID:	LOQ	L479688-19	L479688-20	L479688-21
Client ID:	ppbv	BALLFIELDS #1 VOC	BALLFIELDS #2 VOC	DANLEY DR #1 VOC
trans-1,3-Dichloropropene	0.16	<0.16	<0.16	<0.16
1,1,2-Trichloroethane	0.16	<0.16	<0.16	<0.16
Methyl Isobutyl Ketone	0.16	<0.16	<0.16	<0.16
Toluene	0.16	<0.16	0.36	<0.16
Methyl Butyl Ketone	0.16	<0.16	<0.16	<0.16
Dibromochloromethane	0.16	<0.16	<0.16	<0.16
1,2-Dibromoethane	0.16	<0.16	<0.16	<0.16
Tetrachloroethylene	0.16	<0.16	<0.16	<0.16
Chlorobenzene	0.16	<0.16	<0.16	<0.16
Ethylbenzene	0.16	<0.16	<0.16	<0.16
m & p-xylene	0.32	<0.32	<0.32	<0.32
Bromoform	0.16	<0.16	<0.16	<0.16
Styrene	0.16	<0.16	<0.16	<0.16
1,1,2,2-Tetrachloroethane	0.16	<0.16	<0.16	<0.16
o-Xylene	0.16	<0.16	<0.16	<0.16
Nonane	0.16	<0.16	<0.16	<0.16

Analytical Method: mod. OSHA PV2120/mod. EPA TO15; GC/MS
Collection Media : 6L Canister
Submitted by : BLD

Supervisor: SAP
Approved by : SAP
Date : 28-MAY-19



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Client : GZA GeoEnvironmental, Inc.
Site : Town of Westford, MA
Project No. : Baseline AQ Sampling

Date Sampled : 06-MAY-19 - 09-MAY-19 Account No.: 28289
Date Received : 14-MAY-19 Login No. : L479688
Date Analyzed : 24-MAY-19 Units : ppbv
Report ID : 1137244

Galson ID:	LOQ	L479688-19	L479688-20	L479688-21
Client ID:	ppbv	BALLFIELDS #1 VOC	BALLFIELDS #2 VOC	DANLEY DR #1 VOC
Cumene	0.16	<0.16	<0.16	<0.16
2-Chlorotoluene	0.16	<0.16	<0.16	<0.16
n-Propylbenzene	0.16	<0.16	<0.16	<0.16
4-Ethyltoluene	0.16	<0.16	<0.16	<0.16
1,3,5-Trimethylbenzene	0.16	<0.16	<0.16	<0.16
1,2,4-Trimethylbenzene	0.16	<0.16	<0.16	<0.16
Benzyl Chloride	0.16	<0.16	<0.16	<0.16
1,3-Dichlorobenzene	0.16	<0.16	<0.16	<0.16
1,4-Dichlorobenzene	0.16	<0.16	<0.16	<0.16
1,2-Dichlorobenzene	0.16	<0.16	<0.16	<0.16
Naphthalene	0.16	<0.16	<0.16	<0.16

Analytical Method: mod. OSHA PV2120/mod. EPA TO15; GC/MS
Collection Media : 6L Canister
Submitted by : BLD

Supervisor: SAP
Approved by : SAP
Date : 28-MAY-19



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LELAP Lab ID #04083

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Client : GZA GeoEnvironmental, Inc.
Site : Town of Westford, MA
Project No. : Baseline AQ Sampling

Date Sampled : 06-MAY-19 - 09-MAY-19 Account No.: 28289
Date Received : 14-MAY-19 Login No. : L479688
Date Analyzed : 24-MAY-19 Units : ppbv
Report ID : 1137244

Galson ID:	LOQ	L479688-22	L479688-23	L479688-24
Client ID:	ppbv	DANLEY DR #2 VOC	MORRISON LN #1 VOC	MORRISON LN #2 VOC
Propylene	0.50	<0.50	<0.50	<0.50
Freon-12	0.16	0.51	0.50	0.51
Chloromethane	0.16	0.50	0.51	0.50
Freon-114	0.16	<0.16	<0.16	<0.16
Vinyl Chloride	0.16	<0.16	<0.16	<0.16
1,3-Butadiene	0.16	<0.16	<0.16	<0.16
n-Butane	0.16	0.24	<0.16	0.16
Bromomethane	0.16	<0.16	<0.16	<0.16
Chloroethane	0.16	<0.16	<0.16	<0.16
Ethanol	0.50	2.4	2.4	2.5
Acetonitrile	0.50	1.4	0.60	0.60
Vinyl Bromide	0.16	<0.16	<0.16	<0.16
Acrolein	0.16	<0.16	<0.16	<0.16
Acetone	0.50	3.6	2.2	2.4
Freon-11	0.16	0.23	0.23	0.24
Isopropyl Alcohol	0.50	1.0	0.60	<0.50

Analytical Method: mod. OSHA PV2120/mod. EPA TO15; GC/MS
Collection Media : 6L Canister
Submitted by : BLD

Approved by : SAP
Date : 28-MAY-19

Supervisor: SAP

**GALSON**

LABORATORY ANALYSIS REPORT

LELAP Lab ID #04083

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.sgsgalson.com

Client : GZA GeoEnvironmental, Inc.
Site : Town of Westford, MA
Project No. : Baseline AQ Sampling

Date Sampled : 06-MAY-19 - 09-MAY-19 Account No.: 28289
Date Received : 14-MAY-19 Login No. : L479688
Date Analyzed : 24-MAY-19 Units : ppbv
Report ID : 1137244

Galson ID:	LOQ	L479688-22	L479688-23	L479688-24
Client ID:	ppbv	DANLEY DR #2 VOC	MORRISON LN #1 VOC	MORRISON LN #2 VOC
Acrylonitrile	0.16	<0.16	<0.16	<0.16
Pentane	0.16	0.28	<0.16	0.42
Ethyl Bromide	0.16	<0.16	<0.16	<0.16
1,1-Dichloroethene	0.16	<0.16	<0.16	<0.16
tert-Butyl Alcohol	0.50	<0.50	<0.50	<0.50
Methylene Chloride	0.16	<0.16	<0.16	<0.16
Freon-113	0.16	<0.16	<0.16	<0.16
Carbon Disulfide	0.50	<0.50	<0.50	<0.50
Allyl Chloride	0.16	<0.16	<0.16	<0.16
trans-1,2-Dichloroethene	0.16	<0.16	<0.16	<0.16
1,1-Dichloroethane	0.16	<0.16	<0.16	<0.16
Methyl tert-Butyl Ether	0.16	<0.16	<0.16	<0.16
Vinyl Acetate	0.16	<0.16	<0.16	<0.16
Methyl Ethyl Ketone	0.16	0.20	<0.16	<0.16
cis-1,2-Dichloroethylene	0.16	<0.16	<0.16	<0.16
Hexane	0.16	<0.16	<0.16	<0.16
Analytical Method: mod. OSHA PV2120/mod. EPA TO15; GC/MS				Supervisor: SAP
Collection Media : 6L Canister				Approved by : SAP
Submitted by : BLD				Date : 28-MAY-19



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Date Sampled : 06-MAY-19 - 09-MAY-19 Account No.: 28289
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Date Analyzed : 24-MAY-19 Units : ppbv
Report ID : 1137244

Galson ID:	LOQ	L479688-22	L479688-23	L479688-24
Client ID:	ppbv	DANLEY DR #2 VOC	MORRISON LN #1 VOC	MORRISON LN #2 VOC
Ethyl Acetate	0.16	0.59	0.23	0.26
Chloroform	0.16	<0.16	<0.16	<0.16
Tetrahydrofuran	0.16	<0.16	<0.16	<0.16
1,2-Dichloroethane	0.16	<0.16	<0.16	<0.16
1,1,1-Trichloroethane	0.16	<0.16	<0.16	<0.16
Benzene	0.16	<0.16	<0.16	<0.16
Carbon Tetrachloride	0.16	<0.16	<0.16	<0.16
Cyclohexane	0.16	<0.16	<0.16	<0.16
1,2-Dichloropropane	0.16	<0.16	<0.16	<0.16
Bromodichloromethane	0.16	<0.16	<0.16	<0.16
1,4-Dioxane	0.50	<0.50	<0.50	<0.50
Trichloroethylene	0.16	<0.16	<0.16	<0.16
2,2,4-Trimethylpentane	0.16	<0.16	<0.16	<0.16
Methyl Methacrylate	0.16	<0.16	<0.16	<0.16
Heptane	0.16	<0.16	<0.16	<0.16
cis-1,3-Dichloropropene	0.16	<0.16	<0.16	<0.16
Analytical Method: mod. OSHA PV2120/mod. EPA TO15; GC/MS				Supervisor: SAP
Collection Media : 6L Canister			Approved by : SAP	
Submitted by : BLD			Date : 28-MAY-19	



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Date Analyzed : 24-MAY-19 Units : ppbv
Report ID : 1137244

Galson ID:	LOQ	L479688-22	L479688-23	L479688-24
Client ID:	ppbv	DANLEY DR #2 VOC	MORRISON LN #1 VOC	MORRISON LN #2 VOC
trans-1,3-Dichloropropene	0.16	<0.16	<0.16	<0.16
1,1,2-Trichloroethane	0.16	<0.16	<0.16	<0.16
Methyl Isobutyl Ketone	0.16	<0.16	<0.16	<0.16
Toluene	0.16	0.21	<0.16	<0.16
Methyl Butyl Ketone	0.16	<0.16	<0.16	<0.16
Dibromochloromethane	0.16	<0.16	<0.16	<0.16
1,2-Dibromoethane	0.16	<0.16	<0.16	<0.16
Tetrachloroethylene	0.16	<0.16	<0.16	<0.16
Chlorobenzene	0.16	<0.16	<0.16	<0.16
Ethylbenzene	0.16	<0.16	<0.16	<0.16
m & p-xylene	0.32	<0.32	<0.32	<0.32
Bromoform	0.16	<0.16	<0.16	<0.16
Styrene	0.16	<0.16	<0.16	<0.16
1,1,2,2-Tetrachloroethane	0.16	<0.16	<0.16	<0.16
o-Xylene	0.16	<0.16	<0.16	<0.16
Nonane	0.16	<0.16	<0.16	<0.16

Analytical Method: mod. OSHA PV2120/mod. EPA TO15; GC/MS
Collection Media : 6L Canister
Submitted by : BLD

Approved by : SAP
Date : 28-MAY-19

Supervisor: SAP



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Date Analyzed : 24-MAY-19 Units : ppbv
Report ID : 1137244

Galson ID:	LOQ	L479688-22	L479688-23	L479688-24
Client ID:	ppbv	DANLEY DR #2 VOC	MORRISON LN #1 VOC	MORRISON LN #2 VOC
Cumene	0.16	<0.16	<0.16	<0.16
2-Chlorotoluene	0.16	<0.16	<0.16	<0.16
n-Propylbenzene	0.16	<0.16	<0.16	<0.16
4-Ethyltoluene	0.16	<0.16	<0.16	<0.16
1,3,5-Trimethylbenzene	0.16	<0.16	<0.16	<0.16
1,2,4-Trimethylbenzene	0.16	<0.16	<0.16	<0.16
Benzyl Chloride	0.16	<0.16	<0.16	<0.16
1,3-Dichlorobenzene	0.16	<0.16	<0.16	<0.16
1,4-Dichlorobenzene	0.16	<0.16	<0.16	<0.16
1,2-Dichlorobenzene	0.16	<0.16	<0.16	<0.16
Naphthalene	0.16	<0.16	<0.16	<0.16

Analytical Method: mod. OSHA PV2120/mod. EPA TO15; GC/MS
Collection Media : 6L Canister
Submitted by : BLD

Supervisor: SAP
Approved by : SAP
Date : 28-MAY-19



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Project No. : Baseline AQ Sampling

Date Sampled : 06-MAY-19 - 09-MAY-19
Date Received : 14-MAY-19
Date Analyzed : 24-MAY-19
Report ID : 1137244

Account No.: 28289
Login No. : L479688
Units : ppbv

Galson ID:	LOQ	L479688-25	L479688-26
Client ID:	ppbv	CHANDLER RD #1 VOC	CHANDLER RD #2 VOC

Propylene	0.50	<0.50	<0.50
Freon-12	0.16	0.52	0.51
Chloromethane	0.16	0.52	0.49
Freon-114	0.16	<0.16	<0.16
Vinyl Chloride	0.16	<0.16	<0.16
1,3-Butadiene	0.16	<0.16	<0.16
n-Butane	0.16	0.18	0.20
Bromomethane	0.16	<0.16	<0.16
Chloroethane	0.16	<0.16	<0.16
Ethanol	0.50	1.4	1.4
Acetonitrile	0.50	<0.50	<0.50
Vinyl Bromide	0.16	<0.16	<0.16
Acrolein	0.16	<0.16	<0.16
Acetone	0.50	2.2	2.1
Freon-11	0.16	0.25	0.24
Isopropyl Alcohol	0.50	<0.50	<0.50

Analytical Method: mod. OSHA PV2120/mod. EPA TO15; GC/MS
Collection Media : 6L Canister
Submitted by : BLD

Approved by : SAP
Date : 28-MAY-19

Supervisor: SAP

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Date Analyzed : 24-MAY-19 Units : ppbv
Report ID : 1137244

Galson ID: LOQ L479688-25 L479688-26
Client ID: ppbv CHANDLER RD #1 VOC CHANDLER RD #2 VOC

Acrylonitrile	0.16	<0.16	<0.16
Pentane	0.16	<0.16	<0.16
Ethyl Bromide	0.16	<0.16	<0.16
1,1-Dichloroethene	0.16	<0.16	<0.16
tert-Butyl Alcohol	0.50	<0.50	<0.50
Methylene Chloride	0.16	<0.16	<0.16
Freon-113	0.16	<0.16	<0.16
Carbon Disulfide	0.50	<0.50	<0.50
Allyl Chloride	0.16	<0.16	<0.16
trans-1,2-Dichloroethene	0.16	<0.16	<0.16
1,1-Dichloroethane	0.16	<0.16	<0.16
Methyl tert-Butyl Ether	0.16	<0.16	<0.16
Vinyl Acetate	0.16	<0.16	<0.16
Methyl Ethyl Ketone	0.16	<0.16	<0.16
cis-1,2-Dichloroethylene	0.16	<0.16	<0.16
Hexane	0.16	<0.16	<0.16

Analytical Method: mod. OSHA PV2120/mod. EPA TO15; GC/MS
Collection Media : 6L Canister
Submitted by : BLD

Approved by : SAP
Date : 28-MAY-19

Supervisor: SAP



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Date Sampled : 06-MAY-19 - 09-MAY-19 Account No.: 28289
Date Received : 14-MAY-19 Login No. : L479688
Date Analyzed : 24-MAY-19 Units : ppbv
Report ID : 1137244

Galson ID:	LOQ	L479688-25	L479688-26
Client ID:	ppbv	CHANDLER RD #1 VOC	CHANDLER RD #2 VOC

Ethyl Acetate	0.16	0.21	<0.16
Chloroform	0.16	<0.16	<0.16
Tetrahydrofuran	0.16	<0.16	<0.16
1,2-Dichloroethane	0.16	<0.16	<0.16
1,1,1-Trichloroethane	0.16	<0.16	<0.16
Benzene	0.16	<0.16	<0.16
Carbon Tetrachloride	0.16	<0.16	<0.16
Cyclohexane	0.16	<0.16	<0.16
1,2-Dichloropropane	0.16	<0.16	<0.16
Bromodichloromethane	0.16	<0.16	<0.16
1,4-Dioxane	0.50	<0.50	<0.50
Trichloroethylene	0.16	<0.16	<0.16
2,2,4-Trimethylpentane	0.16	<0.16	<0.16
Methyl Methacrylate	0.16	<0.16	<0.16
Heptane	0.16	<0.16	<0.16
cis-1,3-Dichloropropene	0.16	<0.16	<0.16

Analytical Method: mod. OSHA PV2120/mod. EPA T015; GC/MS
Collection Media : 6L Canister
Submitted by : BLD

Supervisor: SAP
Approved by : SAP
Date : 28-MAY-19



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Date Received : 14-MAY-19
Date Analyzed : 24-MAY-19
Report ID : 1137244

Account No.: 28289
Login No. : L479688
Units : ppbv

Galson ID: LOQ L479688-25 L479688-26
Client ID: ppbv CHANDLER RD #1 VOC CHANDLER RD #2 VOC

trans-1,3-Dichloropropene	0.16	<0.16	<0.16
1,1,2-Trichloroethane	0.16	<0.16	<0.16
Methyl Isobutyl Ketone	0.16	<0.16	<0.16
Toluene	0.16	<0.16	<0.16
Methyl Butyl Ketone	0.16	<0.16	<0.16
Dibromochloromethane	0.16	<0.16	<0.16
1,2-Dibromoethane	0.16	<0.16	<0.16
Tetrachloroethylene	0.16	<0.16	<0.16
Chlorobenzene	0.16	<0.16	<0.16
Ethylbenzene	0.16	<0.16	<0.16
m & p-xylene	0.32	<0.32	<0.32
Bromoform	0.16	<0.16	<0.16
Styrene	0.16	<0.16	<0.16
1,1,2,2-Tetrachloroethane	0.16	<0.16	<0.16
o-Xylene	0.16	<0.16	<0.16
Nonane	0.16	<0.16	<0.16

Analytical Method: mod. OSHA PV2120/mod. EPA TO15; GC/MS
Collection Media : 6L Canister
Submitted by : BLD

Approved by : SAP
Date : 28-MAY-19

Supervisor: SAP



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Date Analyzed : 24-MAY-19 Units : ppbv
Report ID : 1137244

Galson ID:	LOQ	L479688-25	L479688-26
Client ID:	ppbv	CHANDLER RD #1 VOC	CHANDLER RD #2 VOC

Cumene	0.16	<0.16	<0.16
2-Chlorotoluene	0.16	<0.16	<0.16
n-Propylbenzene	0.16	<0.16	<0.16
4-Ethyltoluene	0.16	<0.16	<0.16
1,3,5-Trimethylbenzene	0.16	<0.16	<0.16
1,2,4-Trimethylbenzene	0.16	<0.16	<0.16
Benzyl Chloride	0.16	<0.16	<0.16
1,3-Dichlorobenzene	0.16	<0.16	<0.16
1,4-Dichlorobenzene	0.16	<0.16	<0.16
1,2-Dichlorobenzene	0.16	<0.16	<0.16
Naphthalene	0.16	<0.16	<0.16

Analytical Method: mod. OSHA PV2120/mod. EPA TO15; GC/MS
Collection Media : 6L Canister
Submitted by : BLD

Supervisor: SAP
Approved by : SAP
Date : 28-MAY-19



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Project No. : Baseline AQ Sampling
Date Sampled : 06-MAY-19 - 10-MAY-19
Date Received : 14-MAY-19

Account No.: 28289
Login No. : L479688
Date Analyzed : 15-MAY-19
Report ID : 1134938

Asphalt Fume (Gravimetric)

<u>Sample ID</u>	<u>Lab ID</u>	<u>Air Vol</u> <u>liter</u>	<u>Total</u> <u>mg</u>	<u>Conc</u> <u>mg/m3</u>
BLANK AF	L479688-10	NA	<0.050	NA
BALLFIELDS #1 AF	L479688-11	996	<0.050	<0.050
BALLFIELDS #2 AF	L479688-12	1022.4	<0.050	<0.049
DANLEY DR #1 AF	L479688-13	969.6	<0.050	<0.052
DANLEY DR #2 AF	L479688-14	969.6	<0.050	<0.052
MORRISON LN #1 AF	L479688-15	960	<0.050	<0.052
MORRISON LN #2 AF	L479688-16	960	<0.050	<0.052
CHANDLER RD #1 AF	L479688-17	984	<0.050	<0.051
CHANDLER RD #2 AF	L479688-18	984	<0.050	<0.051

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of Quantitation: 0.050 mg
Analytical Method : mod. NIOSH 5042; Gravimetric
Collection Media : PTFE PW 1u 37mm

Submitted by: PAH
Date : 21-MAY-19
Supervisor : CMP

Approved by: SAP/CMP



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LABORATORY FOOTNOTE REPORT

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Client Name : GZA GeoEnvironmental, Inc.
Site : Town of Westford, MA
Project No. : Baseline AQ Sampling

Date Sampled : 06-MAY-19 - 10-MAY-19 Account No.: 28289
Date Received: 14-MAY-19 Login No. : L479688
Date Analyzed: 15-MAY-19 - 24-MAY-19

L479688 (Report ID: 1135810):

Reported results reflect elemental analysis of the requested metals. Certain compounds may not be solubilized during digestion, resulting in data that is biased low.

SOPs: MT-SOP-27(6), MT-SOP-29(5)

L479688 (Report ID: 1135810):

Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated accuracy applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process. The accuracy is based solely on spike recovery data from internal quality control samples. Where N/A appears below, insufficient data is available to provide statistical accuracy and mean recovery values for the associated analyte.

Parameter	Accuracy	Mean Recovery
Lead	+/-7.8%	99.7%

L479688 (Report ID: 1137244):

NYSDOH does not offer a certification for the following compounds:

Propylene, Ethyl Acetate, Tetrahydrofuran, Methyl n-Butyl Ketone, 4-Ethyl Toluene, n-Butane, Ethanol, Pentane, Ethyl Bromide, Nonane, and n-Propylbenzene.

SOPs: in-vocs(36)

L479688 (Report ID: 1137244):

Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated accuracy applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process. The accuracy is based solely on spike recovery data from internal quality control samples. Where N/A appears below, insufficient data is available to provide statistical accuracy and mean recovery values for the associated analyte.

Parameter	Accuracy	Mean Recovery
1,1,2-Trichloroethane	+/-10.1%	99.9%
1,1-Dichloroethene	+/-12.2%	101%
1,2-Dichloroethane	+/-14.7%	103%
2,2,4-Trimethylpentane	+/-12.5%	101%
Allyl Chloride	+/-18.4%	98.3%
Carbon Tetrachloride	+/-12.8%	104%
cis-1,2-Dichloroethylene	+/-12%	101%
cis-1,3-Dichloropropene	+/-12.5%	103%
1,4-Dioxane	+/-14.4%	99.6%
Tetrachloroethylene	+/-13.8%	100%
Toluene	+/-14.9%	101%
1,2-Dichlorobenzene	+/-17.4%	102%
1,3,5-Trimethylbenzene	+/-16.9%	103%
Acrolein	+/-20.2%	99.9%
Acrylonitrile	+/-14.7%	99.1%



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Date Sampled : 06-MAY-19 - 10-MAY-19 Account No.: 28289
Date Received: 14-MAY-19 Login No. : L479688
Date Analyzed: 15-MAY-19 - 24-MAY-19

Cyclohexane	+/-14.2%	101%
trans-1,2-Dichloroethene	+/-12.3%	100%
Vinyl Chloride	+/-16.6%	98.6%
1,1-Dichloroethane	+/-11%	98.8%
1,2,4-Trimethylbenzene	+/-19.1%	105%
1,2-Dichloropropane	+/-12.6%	98.1%
4-Ethyltoluene	+/-17.5%	104%
Dibromochloromethane	+/-15.3%	104%
Methyl Isobutyl Ketone	+/-19%	102%
tert-Butyl Alcohol	+/-16.7%	102%
2-Chlorotoluene	+/-15.5%	102%
Chloroethane	+/-15.6%	97.4%
Heptane	+/-15.7%	101%
Methyl Butyl Ketone	+/-20.8%	104%
Nonane	+/-17.6%	103%
Tetrahydrofuran	+/-18.4%	101%
trans-1,3-Dichloropropene	+/-12.2%	105%
Vinyl Acetate	+/-18.2%	101%
Vinyl Bromide	+/-16%	100%
1,3-Dichlorobenzene	+/-17.3%	101%
Acetonitrile	+/-21.8%	98.7%
Bromoform	+/-21.6%	105%
Benzene	+/-10.9%	99.2%
Naphthalene	+/-33%	106%
Hexane	+/-14%	99.6%
n-Propylbenzene	+/-14.7%	102%
Pentane	+/-16.1%	98.3%
1,1,2,2-Tetrachloroethane	+/-16.8%	99.2%
1,3-Butadiene	+/-16.1%	100%
Benzyl Chloride	+/-21%	106%
Chloroform	+/-10.6%	100%
Freon-11	+/-15.7%	103%
Freon-12	+/-19.7%	103%
Chloromethane	+/-18.5%	98%
Methylene Chloride	+/-12.4%	97.1%
Methyl tert-Butyl Ether	+/-14.5%	102%
Styrene	+/-17.3%	104%
1,4-Dichlorobenzene	+/-17.9%	102%
Acetone	+/-19.6%	102%
Bromodichloromethane	+/-10.9%	102%
Carbon Disulfide	+/-13.1%	97.5%
Cumene	+/-15.8%	102%
Ethyl Acetate	+/-16.3%	101%
Ethyl Bromide	+/-13.5%	100%
Ethanol	+/-20%	101%



GALSON

LABORATORY FOOTNOTE REPORT

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.sgsgalson.com

Client Name : GZA GeoEnvironmental, Inc.
Site : Town of Westford, MA
Project No. : Baseline AQ Sampling

Date Sampled : 06-MAY-19 - 10-MAY-19 Account No.: 28289
Date Received: 14-MAY-19 Login No. : L479688
Date Analyzed: 15-MAY-19 - 24-MAY-19

Freon-113	+/-10.5%	99%
Methyl Ethyl Ketone	+/-15.5%	101%
Methyl Methacrylate	+/-16.5%	104%
o-Xylene	+/-15.9%	103%
1,2-Dibromoethane	+/-16.1%	102%
n-Butane	+/-18.4%	97.8%
Chlorobenzene	+/-14.7%	98.9%
Ethylbenzene	+/-16.9%	103%
Freon-114	+/-14.6%	102%
Isopropyl Alcohol	+/-16.3%	101%
1,1,1-Trichloroethane	+/-12%	103%
Bromomethane	+/-13.2%	98.3%
m & p-xylene	+/-18.6%	103%
Propylene	+/-19.3%	96.7%
Trichloroethylene	+/-9.3%	100%

L479688 (Report ID: 1134938):

SOPs: GRAV-SOP-5(22), GRAV-SOP-6(19)

Gravimetric analytical accuracy of the sampling media is 0.005 +/- 0.016 mg (average blank weight change +/- 95% confidence interval or $k=2$). The estimated uncertainty applies to the media, technology, and SOP(s) referenced in this report and does not account for any uncertainty associated with the sampling process.

1209386/P294957723
Date:05/14/19
Shipper:UPS
Initials:BCF



Prep:UNKNOWN

1209386/P294455131
Date:05/14/19
Shipper:UPS
Initials:BCF



Prep:UNKNOWN



12093867P291776942
Date:05/14/19
Shipper:UPS
Initials:BCF



Prep:UNKNOWN

1479688

Turn Around Time (TAT): (surcharge) ☒ Standard 0% ☐ 4 Business Days 35% ☐ 3 Business Days 50% ☐ 2 Business Days 75% ☐ Next Day by 6pm 100% ☐ Next Day by Noon 150% ☐ Same Day 200%	Client Acct No.: 28289 Report To: Mr. Samuel Despins Company Name: GZA GeoEnvironmental, Inc. Address 1: 5 Commerce Park North Address 2: Suite 201 City, State Zip: Bedford, NH 03110 Phone No.: 603 - 232 - 8721 Cell No.: 603 - 767 - 4318 Email reports to: samuel.despins@gza.com Comments:	Invoice To: Mr. Samuel Despins Company Name: GZA GeoEnvironmental, Inc. Address 1: 5 Commerce Park North Address 2: Suite 201 City, State Zip: Bedford, NH 03110 Phone No.: Email Address: rhonda.lavallee@gza.com, samuel.despins@gza.com Comments: P.O. No.: Payment info.: ☐ I will call SGS Galson to provide credit card info ☐ Card on File (enter the last five digits on the line below)
☒ Samples submitted using the FreePumpLoan™ Program ☐ Samples submitted using the FreeSamplingBadges™ Program	Online COC No.: 180072	

Comments :	State Sampled : Massachusetts Please indicate which OEL(s) this data will be used for : ☒ OSHA PEL ☒ ACGIH TLV ☐ MSHA ☐ Cal OSHA ☐ IAQ : ☒ Other : NIOSH Specify Limit(s) Specify Other
-------------------	--

Site Name : Town of Westford, MA	Project : Baseline AQ Sampling	Sampled By : David Thibault	List description of industry or Process/interferences present in sampling area :
---	---------------------------------------	------------------------------------	---

Sample ID (Maximum of 20 Characters)	Date Sampled	Collection Medium	Sample Volume Sample Time Sample Area	Liters Minutes in ² , cm ² , ft ²	Analysis Requested	Method Reference ^	Hexavalent Chromium Process (e.g., welding, plating, painting, etc.)
BLANK PB	5/10/2019	37mm UW MCB, 3pc	N/A (BLANK)	N/A	Lead	mod. NIOSH 7303/mod. OSHA ID-125G; ICP	
BALLFIELDS #1 PB	5/6/2019	37mm UW MCB, 3pc	1156.8	L	Lead	mod. NIOSH 7303/mod. OSHA ID-125G; ICP	

☐ ^ If the method(s) indicated on the COC are not our routine/preferred method(s), we will substitute our routine/preferred methods. If this is not acceptable, check here to have us contact you.

Chain of Custody	Print Name / Signature	Date	Time	Print Name / Signature	Date	Time
Relinquished By :	Samuel Despins	SIGNED ELECTRONICALLY	5/10/2019	11:54	Received By : Bill Fischer	14MAY19 1054
Relinquished By :					Received By :	

Samples received after 3pm will be considered as next day's business.		Online COC No. : 180072 Prep No. : PSY527701 Account No. : 28289 Finalized : 5/10/2019 11:55:48 AM
All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: http://www.sgs.com/en/Terms-and-Conditions.aspx		



GALSON

CHAIN OF CUSTODY

Comments :

Sample ID (Maximum of 20 Characters)	Date Sampled	Collection Medium	Sample Volume Sample Time Sample Area	Liters Minutes in ² , cm ² , ft ²	Analysis Requested	Method Reference ^	Hexavalent Chromium Process (e.g., welding, plating, painting, etc.)
BALLFIELDS #2 PB	5/6/2019	37mm UW MCE, 3pc	1204.8	L	Lead	mod. NIOSH 7303/mod. OSHA ID-125G; ICP	
DANLEY DRIVE #1 PB	5/7/2019	37mm UW MCE, 3pc	1204.8	L	Lead	mod. NIOSH 7303/mod. OSHA ID-125G; ICP	
DANLEY DRIVE #2 PB	5/7/2019	37mm UW MCE, 3pc	1056	L	Lead	mod. NIOSH 7303/mod. OSHA ID-125G; ICP	
MORRISON LANE #1 PB	5/8/2019	37mm UW MCE, 3pc	1192.8	L	Lead	mod. NIOSH 7303/mod. OSHA ID-125G; ICP	
MORRISON LN #2 PB	5/8/2019	37mm UW MCE, 3pc	1214.4	L	Lead	mod. NIOSH 7303/mod. OSHA ID-125G; ICP	
CHANDLER ROAD #1 PB	5/9/2019	37mm UW MCE, 3pc	1192.8	L	Lead	mod. NIOSH 7303/mod. OSHA ID-125G; ICP	
CHANDLER RD #2 PB	5/9/2019	37mm UW MCE, 3pc	1214.4	L	Lead	mod. NIOSH 7303/mod. OSHA ID-125G; ICP	
BLANK AF	5/10/2019	37mm 1um PW PTFE, 2pc (black band)	N/A (BLANK)	N/A	Asphalt Fume (Gravimetric)	mod. NIOSH 5042/MDHS 14/4; GRAV	
BALLFIELDS #1 AF	5/6/2019	37mm 1um PW PTFE, 2pc (black band)	996	L	Asphalt Fume (Gravimetric)	mod. NIOSH 5042/MDHS 14/4; GRAV	
BALLFIELDS #2 AF	5/6/2019	37mm 1um PW PTFE, 2pc (black band)	1022.4	L	Asphalt Fume (Gravimetric)	mod. NIOSH 5042/MDHS 14/4; GRAV	
DANLEY DR #1 AF	5/7/2019	37mm 1um PW PTFE, 2pc (black band)	969.6	L	Asphalt Fume (Gravimetric)	mod. NIOSH 5042/MDHS 14/4; GRAV	

☐ ^ If the method(s) indicated on the COC are not our routine/preferred method(s), we will substitute our routine/preferred methods. If this is not acceptable, check here to have us contact you.

Chain of Custody	Print Name / Signature	Date	Time	Print Name / Signature	Date	Time
Relinquished By :	Samuel Despins SIGNED ELECTRONICALLY	5/10/2019	11:54	Received By : Bill Fischer	5/10/2019	1054
Relinquished By :				Received By :		

Samples received after 3pm will be considered as next day's business.

Online COC No. : 180072
 Prep No. : PSY527701
 Account No. : 28289
 Finalized : 5/10/2019 11:55:48 AM

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: <http://www.sgs.com/en/Terms-and-Conditions.aspx>



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CHAIN OF CUSTODY

Comments :

Analyze 6L Cans for TO15 List
per client. ZRK 5/21/19

Sample ID (Maximum of 20 Characters)	Date Sampled	Collection Medium	Sample Volume Sample Time Sample Area	Liters Minutes in ³ , cm ³ , ft ³	Analysis Requested	Method Reference ^	Hexavalent Chromium Process (e.g., welding, plating, painting, etc.)
DANLEY DR #2 AF	5/7/2019	37mm 1um PW PTFE, 2pc (black band)	969.6	L	Asphalt Fume (Gravimetric)	mod. NIOSH 5042/MDHS 14/4; GRAV	
MORRISON LN #1 AF	5/8/2019	37mm 1um PW PTFE, 2pc (black band)	960	L	Asphalt Fume (Gravimetric)	mod. NIOSH 5042/MDHS 14/4; GRAV	
MORRISON LN #2 AF	5/8/2019	37mm 1um PW PTFE, 2pc (black band)	960	L	Asphalt Fume (Gravimetric)	mod. NIOSH 5042/MDHS 14/4; GRAV	
CHANDLER RD #1 AF	5/9/2019	37mm 1um PW PTFE, 2pc (black band)	984	L	Asphalt Fume (Gravimetric)	mod. NIOSH 5042/MDHS 14/4; GRAV	
CHANDLER RD #2 AF	5/9/2019	37mm 1um PW PTFE, 2pc (black band)	984	L	Asphalt Fume (Gravimetric)	mod. NIOSH 5042/MDHS 14/4; GRAV	
BALLFIELDS #1 VOC	5/6/2019	6-L Canister	5.375	L	Volatile Organics (4-6 TO15 list compounds) (modified, see appendix Item No. 1)	mod. OSHA PV2120/mod. EPA TO15; GC/MS	Regulator flow rate assumed to be 0.0125 Lpm, correspondent to the requested 6L over 8 hour sampling period.
BALLFIELDS #2 VOC	5/6/2019	6-L Canister	5.25	L	Volatile Organics (4-6 TO15 list compounds) (modified, see appendix Item No. 1)	mod. OSHA PV2120/mod. EPA TO15; GC/MS	Regulator flow rate assumed to be 0.0125 Lpm, correspondent to the requested 6L over 8 hour sampling period.

☐ ^ If the method(s) indicated on the COC are not our routine/preferred method(s), we will substitute our routine/preferred methods. If this is not acceptable, check here to have us contact you.

Chain of Custody	Print Name / Signature	Date	Time	Print Name / Signature	Date	Time
Relinquished By :	Samuel Despina SIGNED ELECTRONICALLY	5/10/2019	11:54	Received By : Bill Fischer	4/24/19	10:54
Relinquished By :				Received By :		

Samples received after 3pm will be considered as next day's business.

Online COC No. : 180072
Prep No. : PSY527701
Account No. : 28289
Finalized : 5/10/2019 11:55:48 AM

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: <http://www.sgs.com/en/Terms-and-Conditions.aspx>



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CHAIN OF CUSTODY

Comments :

Sample ID (Maximum of 20 Characters)	Date Sampled	Collection Medium	Sample Volume Sample Time Sample Area	Liters Minutes in ³ , cm ³ , ft ³	Analysis Requested	Method Reference ^	Hexavalent Chromium Process (e.g., welding, plating, painting, etc.)
DANLEY DR #1 VOC	5/7/2019	6-L Canister	5.5	L	Volatile Organics (4-6 TO15 list compounds) (modified, see appendix Item No. 1)	mod. OSHA PV2120/mod. EPA TO15; GC/MS	Regulator flow rate assumed to be 0.0125 Lpm, correspondent to the requested 6L over 8 hour sampling period.
DANLEY DR #2 VOC	5/7/2019	6-L Canister	6	L	Volatile Organics (4-6 TO15 list compounds) (modified, see appendix Item No. 1)	mod. OSHA PV2120/mod. EPA TO15; GC/MS	Regulator flow rate assumed to be 0.0125 Lpm, correspondent to the requested 6L over 8 hour sampling period.
MORRISON LN #1 VOC	5/8/2019	6-L Canister	6	L	Volatile Organics (4-6 TO15 list compounds) (modified, see appendix Item No. 1)	mod. OSHA PV2120/mod. EPA TO15; GC/MS	Regulator flow rate assumed to be 0.0125 Lpm, correspondent to the requested 6L over 8 hour sampling period.

☐ ^ If the method(s) indicated on the COC are not our routine/preferred method(s), we will substitute our routine/preferred methods. If this is not acceptable, check here to have us contact you.

Chain of Custody	Print Name / Signature	Date	Time		Print Name / Signature	Date	Time
Relinquished By :	Samuel Despina SIGNED ELECTRONICALLY	5/10/2019	11:54	Received By :	Bill Fischer	14 MAY 19	1054
Relinquished By :				Received By :			

Samples received after 3pm will be considered as next day's business.

Online COC No. : 180072
Prep No. : PSY527701
Account No. : 28289
Finalized : 5/10/2019 11:55:48 AM

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: <http://www.sgs.com/en/Terms-and-Conditions.aspx>



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CHAIN OF CUSTODY

Comments :

Sample ID (Maximum of 20 Characters)	Date Sampled	Collection Medium	Sample Volume Sample Time Sample Area	Liters Minutes in ² , cm ² , ft ²	Analysis Requested	Method Reference ^A	Hexavalent Chromium Process (e.g., welding, plating, painting, etc.)
MORRISON LN #2 VOC	5/8/2019	6-L Canister	5.5	L	Volatile Organics (4-6 TO15 list compounds) (modified, see appendix Item No. 1)	mod. OSHA PV2120/mod. EPA TO15; GC/MS	Regulator flow rate assumed to be 0.0125 Lpm, correspondent to the requested 6L over 8 hour sampling period.
CHANDLER RD #1 VOC	5/9/2019	6-L Canister	5.5	L	Volatile Organics (4-6 TO15 list compounds) (modified, see appendix Item No. 1)	mod. OSHA PV2120/mod. EPA TO15; GC/MS	Regulator flow rate assumed to be 0.0125 Lpm, correspondent to the requested 6L over 8 hour sampling period.
CHANDLER RD #2 VOC	5/9/2019	6-L Canister	6	L	Volatile Organics (4-6 TO15 list compounds) (modified, see appendix Item No. 1)	mod. OSHA PV2120/mod. EPA TO15; GC/MS	Regulator flow rate assumed to be 0.0125 Lpm, correspondent to the requested 6L over 8 hour sampling period.

☐ ^A If the method(s) indicated on the COC are not our routine/preferred method(s), we will substitute our routine/preferred methods. If this is not acceptable, check here to have us contact you.

Chain of Custody	Print Name / Signature	Date	Time	Print Name / Signature	Date	Time
Relinquished By :	Samuel Despina SIGNED ELECTRONICALLY	5/10/2019	11:54	Received By : Bill Fischer	14MAY19	1054
Relinquished By :				Received By :		

Samples received after 3pm will be considered as next day's business.

Online COC No. : 180072

Prep No. : PSY527701

Account No. : 28289

Finalized : 5/10/2019 11:55:48 AM

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: <http://www.sgs.com/en/Terms-and-Conditions.aspx>

CHAIN OF CUSTODY

Appendix

[illegible]



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CHAIN OF CUSTODY

Appendix

Item No.	Parameters Added			Parameters Removed		
Sample #2 (BALLFIELDS #1 PB)			480	2.41		1156.8
Sample #3 (BALLFIELDS #2 PB)			480	2.51		1204.8
Sample #4 (DANLEY DRIVE #1 PB)			480	2.51		1204.8
Sample #5 (DANLEY DRIVE #2 PB)			480	2.2		1056
Sample #6 (MORRISON LANE #1 PB)			480	2.485		1192.8
Sample #7 (MORRISON LN #2 PB)			480	2.53		1214.4
Sample #8 (CHANDLER ROAD #1 PB)			480	2.485		1192.8
Sample #9 (CHANDLER RD #2 PB)			480	2.53		1214.4
Sample #11 (BALLFIELDS #1 AF)			480	2.075		996
Sample #12 (BALLFIELDS #2 AF)			480	2.13		1022.4
Sample #13 (DANLEY DR #1 AF)			480	2.02		969.6
Sample #14 (DANLEY DR #2 AF)			480	2.02		969.6

☐ ^ If the method(s) indicated on the COC are not our routine/preferred method(s), we will substitute our routine/preferred methods. If this is not acceptable, check here to have us contact you.

Chain of Custody	Print Name / Signature		Date	Time		Print Name / Signature		Date	Time
Relinquished By:	Samuel Despina	SIGNED ELECTRONICALLY	5/10/2019	11:54	Received By:	Bill Fischer		14 MAY 19	1054
Relinquished By:					Received By:				

Samples received after 3pm will be considered as next day's business.

Online COC No.: 180072
Prep No.: PSY527701
Account No.: 28289
Finalized: 5/10/2019 11:55:48 AM

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: <http://www.sgs.com/en/Terms-and-Conditions.aspx>



Appendix

Item No.	Parameters Added						Parameters Removed								
Sample #15 (MORRISON LN #1 AF)				480		2						960			
Sample #16 (MORRISON LN #2 AF)				480		2						960			
Sample #17 (CHANDLER RD #1 AF)				480		2.05						984			
Sample #18 (CHANDLER RD #2 AF)				480		2.05						984			
Sample #19 (BALLFIELDS #1 VOC)				430		.0125						5.375			
Sample #20 (BALLFIELDS #2 VOC)				420		.0125						5.25			
Sample #21 (DANLEY DR #1 VOC)				440		.0125						5.5			
Sample #24 (MORRISON LN #2 VOC)				440		.0125						5.5			

☐ ^ If the method(s) indicated on the COC are not our routine/preferred method(s), we will substitute our routine/preferred methods. If this is not acceptable, check here to have us contact you.

Chain of Custody	Print Name / Signature		Date	Time		Print Name / Signature		Date	Time
Relinquished By:	Samuel Despina	SIGNED ELECTRONICALLY	5/10/2019	11:54	Received By:	Bill Fischer	[Signature]	14 MAY 19	1054
Relinquished By:					Received By:				

Samples received after 3pm will be considered as next day's business.

Online COC No.: 180072Prep No.: PSY527701Account No.: 28289Finalized : 5/10/2019 11:55:48 AM

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: http://www.sgs.com/en/Terms-and-Conditions.aspx

Mr. Samuel Despins
GZA GeoEnvironmental, Inc.
5 Commerce Park North
Suite 201
Bedford, NH 03110

June 11, 2019

Account# 28289

Login# L481582

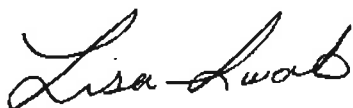
Dear Mr. Despins:

Enclosed are the analytical results for the samples received by our laboratory on June 03, 2019. All samples on the chain of custody were received in good condition unless otherwise noted. Any additional observations will be noted on the chain of custody.

Please contact client services at (888) 432-5227 if you would like any additional information regarding this report. Thank you for using SGS Galson.

Sincerely,

SGS Galson



Lisa Swab
Laboratory Director

Enclosure(s)

Terms and Conditions & General Disclaimers

- This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.
- Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Analytical Disclaimers

- Unless otherwise noted within the report, all quality control results associated with the samples were within established control limits or did not impact reported results.
- Note: The findings recorded within this report were drawn from analysis of the sample(s) provided to the laboratory by the Client (or a third party acting at the Client's direction). The laboratory does not have control over the sampling process, including but not limited to the use of field equipment and collection media, as well as the sampling duration, collection volume or any other collection parameter used by the Client. The findings herein constitute no warranty of the sample's representativeness of any sampled environment, and strictly relate to the samples as they were presented to the laboratory. For recommended sampling collection parameters, please refer to the Sampling and Analysis Guide at www.sgsgalson.com.
- Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceding the final result column may have been rounded and therefore, if carried through the calculations, may not yield an identical final result to the one reported.
- The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).
- Unless otherwise noted within the report, results have not been blank corrected for any field blank or method blank data.

Accreditations SGS Galson holds a variety of accreditations and recognitions. Our quality management system conforms with the requirements of ISO/IEC 17025. Where applicable, samples may also be analyzed in accordance with the requirements of ELAP, NELAC, or LELAP under one of the state accrediting bodies listed below. Current Scopes of Accreditation can be viewed at <http://www.sgsgalson.com> in the accreditations section of the "About" page. To determine if the analyte tested falls under our scope of accreditation, please visit our website or call Client Services at (888) 432-5227.

National/International	Accreditation/Recognition	Lab ID#	Program/Sector
AIHA-LAP, LLC - IHLAP, ELLAP, EMLAP	ISO/IEC 17025 and USEPA NLLAP	Lab ID 100324	Industrial Hygiene, Environmental Lead, Environmental Microbiology
State	Accreditation/Recognition	Lab ID#	Program/Sector
New York (NYSDOH)	ELAP and NELAC (TNI)	Lab ID: 11626	Air Analysis, Solid and Hazardous Waste
New Jersey (NJDEP)	NELAC (TNI)	Lab ID: NY024	Air Analysis
Louisiana (LDEQ)	LELAP	Lab ID: 04083	Air Analysis, Solid Chemical Materials
Texas	Texas Dept. of Licensing and Regulation	Lab ID: 1042	Mold Analysis Laboratory license

Legend

< - Less than	mg - Milligrams	MDL - Method Detection Limit	ppb - Parts per Billion
> - Greater than	ug - Micrograms	NA - Not Applicable	ppm - Parts per Million
l - Liters	m3 - Cubic Meters	NS - Not Specified	ppbv - ppb Volume
LOQ - Limit of Quantitation	kg - Kilograms	ND - Not Detected	ppmv - ppm Volume
ft2 - Square Feet	cm2 - Square Centimeters	in2 - Square Inches	ng - Nanograms



GALSON

LABORATORY ANALYSIS REPORT

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.sgsgalson.com

Client : GZA GeoEnvironmental, Inc.
Site : Town of Westford, MA
Project No. : Baseline AQ Sampling
Date Sampled : 30-MAY-19
Date Received : 03-JUN-19

Account No.: 28289
Login No. : L481582
Date Analyzed : 05-JUN-19
Report ID : 1138900

Lead

<u>Sample ID</u>	<u>Lab ID</u>	<u>Air Vol</u> <u>liter</u>	<u>Total</u> <u>ug</u>	<u>Conc</u> <u>mg/m3</u>
BLANK PB	L481582-1	NA	<0.38	NA
SCHOOL #1 PB	L481582-2	1193.952	<0.38	<0.00031
SCHOOL #2 PB	L481582-3	1193.952	<0.38	<0.00031

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of Quantitation: 0.38 ug	Submitted by: CAW/JMR	Approved by: JJL
Analytical Method : mod. NIOSH 7303/mod. OSHA ID-125G; ICP	Date : 05-JUN-19	
Collection Media : MCE UW 37mm	Supervisor : KEG	



GALSON

LABORATORY ANALYSIS REPORT

LELAP Lab ID #04083

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.sgsgalson.com

Client : GZA GeoEnvironmental, Inc.
Site : Town of Westford, MA
Project No. : Baseline AQ Sampling

Date Sampled : 30-MAY-19
Date Received : 03-JUN-19
Date Analyzed : 05-JUN-19
Report ID : 1138885

Account No.: 28289
Login No. : L481582
Units : ppbv

Galson ID:	LOQ	L481582-7	L481582-8
Client ID:	ppbv	SCHOOL #2 VOC	SCHOOL #1 VOC
Propylene	0.50	<0.50	<0.50
Freon-12	0.16	0.43	0.42
Chloromethane	0.16	0.53	0.51
Freon-114	0.16	<0.16	<0.16
Vinyl Chloride	0.16	<0.16	<0.16
1,3-Butadiene	0.16	<0.16	<0.16
n-Butane	0.16	0.20	0.19
Bromomethane	0.16	<0.16	<0.16
Chloroethane	0.16	<0.16	<0.16
Ethanol	0.50	1.9	1.7
Acetonitrile	0.50	0.70	0.60
Vinyl Bromide	0.16	<0.16	<0.16
Acrolein	0.16	<0.16	<0.16
Acetone	0.50	2.5	2.5
Freon-11	0.16	0.19	0.19
Isopropyl Alcohol	0.50	0.60	0.70
Analytical Method: mod. OSHA PV2120/mod. EPA TO15; GC/MS			Supervisor: SAP
Collection Media : 6L Canister			Approved by : BHB
Submitted by : BLD			Date : 06-JUN-19



GALSON

LABORATORY ANALYSIS REPORT

LELAP Lab ID #04083

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.sgsgalson.com

Client : GZA GeoEnvironmental, Inc.
Site : Town of Westford, MA
Project No. : Baseline AQ Sampling

Date Sampled : 30-MAY-19
Date Received : 03-JUN-19
Date Analyzed : 05-JUN-19
Report ID : 1138885

Account No.: 28289
Login No. : L481582
Units : ppbv

Galson ID:	LOQ	L481582-7	L481582-8
Client ID:	ppbv	SCHOOL #2 VOC	SCHOOL #1 VOC
Acrylonitrile	0.16	<0.16	<0.16
Pentane	0.16	<0.16	<0.16
Ethyl Bromide	0.16	<0.16	<0.16
1,1-Dichloroethene	0.16	<0.16	<0.16
tert-Butyl Alcohol	0.50	<0.50	<0.50
Methylene Chloride	0.16	<0.16	<0.16
Freon-113	0.16	<0.16	<0.16
Carbon Disulfide	0.50	<0.50	<0.50
Allyl Chloride	0.16	<0.16	<0.16
trans-1,2-Dichloroethene	0.16	<0.16	<0.16
1,1-Dichloroethane	0.16	<0.16	<0.16
Methyl tert-Butyl Ether	0.16	<0.16	<0.16
Vinyl Acetate	0.16	<0.16	<0.16
Methyl Ethyl Ketone	0.16	0.22	0.26
cis-1,2-Dichloroethylene	0.16	<0.16	<0.16
Hexane	0.16	<0.16	<0.16

Analytical Method: mod. OSHA PV2120/mod. EPA TO15; GC/MS
Collection Media : 6L Canister
Submitted by : BLD

Approved by : BHB
Date : 06-JUN-19

Supervisor: SAP

**GALSON**

LABORATORY ANALYSIS REPORT

LELAP Lab ID #04083

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.sgsgalson.com

Client : GZA GeoEnvironmental, Inc.
Site : Town of Westford, MA
Project No. : Baseline AQ Sampling

Date Sampled : 30-MAY-19
Date Received : 03-JUN-19
Date Analyzed : 05-JUN-19
Report ID : 1138885

Account No.: 28289
Login No. : L481582
Units : ppbv

Galson ID:	LOQ	L481582-7	L481582-8
Client ID:	ppbv	SCHOOL #2 VOC	SCHOOL #1 VOC
Ethyl Acetate	0.16	<0.16	0.31
Chloroform	0.16	<0.16	<0.16
Tetrahydrofuran	0.16	<0.16	<0.16
1,2-Dichloroethane	0.16	<0.16	0.31
1,1,1-Trichloroethane	0.16	<0.16	<0.16
Benzene	0.16	<0.16	<0.16
Carbon Tetrachloride	0.16	<0.16	<0.16
Cyclohexane	0.16	<0.16	<0.16
1,2-Dichloropropane	0.16	<0.16	<0.16
Bromodichloromethane	0.16	<0.16	<0.16
1,4-Dioxane	0.50	<0.50	<0.50
Trichloroethylene	0.16	<0.16	<0.16
2,2,4-Trimethylpentane	0.16	<0.16	<0.16
Methyl Methacrylate	0.16	<0.16	<0.16
Heptane	0.16	<0.16	<0.16
cis-1,3-Dichloropropene	0.16	<0.16	<0.16
Analytical Method: mod. OSHA PV2120/mod. EPA TO15; GC/MS			Supervisor: SAP
Collection Media : 6L Canister			Approved by : BHB
Submitted by : BLD			Date : 06-JUN-19



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LABORATORY ANALYSIS REPORT

LELAP Lab ID #04083

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Client : GZA GeoEnvironmental, Inc.
Site : Town of Westford, MA
Project No. : Baseline AQ Sampling

Date Sampled : 30-MAY-19
Date Received : 03-JUN-19
Date Analyzed : 05-JUN-19
Report ID : 1138885

Account No.: 28289
Login No. : L481582
Units : ppbv

Galson ID:	LOQ	L481582-7	L481582-8
Client ID:	ppbv	SCHOOL #2 VOC	SCHOOL #1 VOC
trans-1,3-Dichloropropene	0.16	<0.16	<0.16
1,1,2-Trichloroethane	0.16	<0.16	<0.16
Methyl Isobutyl Ketone	0.16	<0.16	<0.16
Toluene	0.16	<0.16	0.16
Methyl Butyl Ketone	0.16	<0.16	<0.16
Dibromochloromethane	0.16	<0.16	<0.16
1,2-Dibromoethane	0.16	<0.16	<0.16
Tetrachloroethylene	0.16	<0.16	<0.16
Chlorobenzene	0.16	<0.16	<0.16
Ethylbenzene	0.16	<0.16	<0.16
m & p-xylene	0.32	<0.32	<0.32
Bromoform	0.16	<0.16	<0.16
Styrene	0.16	<0.16	<0.16
1,1,2,2-Tetrachloroethane	0.16	<0.16	<0.16
o-Xylene	0.16	<0.16	<0.16
Nonane	0.16	<0.16	<0.16
Analytical Method: mod. OSHA PV2120/mod. EPA TO15; GC/MS			Supervisor: SAP
Collection Media : 6L Canister			Approved by : BHB
Submitted by : BLD			Date : 06-JUN-19



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LABORATORY ANALYSIS REPORT

LELAP Lab ID #04083

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Client : GZA GeoEnvironmental, Inc.
Site : Town of Westford, MA
Project No. : Baseline AQ Sampling

Date Sampled : 30-MAY-19
Date Received : 03-JUN-19
Date Analyzed : 05-JUN-19
Report ID : 1138885

Account No.: 28289
Login No. : L481582
Units : ppbv

Galson ID:	LOQ	L481582-7	L481582-8
Client ID:	ppbv	SCHOOL #2 VOC	SCHOOL #1 VOC
Cumene	0.16	<0.16	<0.16
2-Chlorotoluene	0.16	<0.16	<0.16
n-Propylbenzene	0.16	<0.16	<0.16
4-Ethyltoluene	0.16	<0.16	<0.16
1,3,5-Trimethylbenzene	0.16	<0.16	<0.16
1,2,4-Trimethylbenzene	0.16	<0.16	<0.16
Benzyl Chloride	0.16	<0.16	<0.16
1,3-Dichlorobenzene	0.16	<0.16	<0.16
1,4-Dichlorobenzene	0.16	<0.16	<0.16
1,2-Dichlorobenzene	0.16	<0.16	<0.16
Naphthalene	0.16	<0.16	<0.16

Analytical Method: mod. OSHA PV2120/mod. EPA TO15; GC/MS
Collection Media : 6L Canister
Submitted by : BLD

Approved by : BHB
Date : 06-JUN-19

Supervisor: SAP



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Client : GZA GeoEnvironmental, Inc.
Site : Town of Westford, MA
Project No. : Baseline AQ Sampling
Date Sampled : 30-MAY-19
Date Received : 03-JUN-19

Account No.: 28289
Login No. : L481582
Date Analyzed : 04-JUN-19
Report ID : 1138690

Asphalt Fume (Gravimetric)

<u>Sample ID</u>	<u>Lab ID</u>	<u>Air Vol</u> <u>liter</u>	<u>Total</u> <u>mg</u>	<u>Conc</u> <u>mg/m3</u>
BLANK AF	L481582-4	NA	<0.050	NA
SCHOOL #1 AF	L481582-5	968.448	<0.050	<0.052
SCHOOL #2 AF	L481582-6	968.448	<0.050	<0.052

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of Quantitation: 0.050 mg
Analytical Method : mod. NIOSH 5042; Gravimetric
Collection Media : PTFE PW 1u 37mm

Submitted by: PAH
Date : 11-JUN-19
Supervisor : CMP

Approved by: CMP



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LABORATORY FOOTNOTE REPORT

6601 Kirkville Road
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Client Name : GZA GeoEnvironmental, Inc.
Site : Town of Westford, MA
Project No. : Baseline AQ Sampling

Date Sampled : 30-MAY-19
Date Received: 03-JUN-19
Date Analyzed: 04-JUN-19 - 05-JUN-19

Account No.: 28289
Login No. : L481582

L481582 (Report ID: 1138900):

Reported results reflect elemental analysis of the requested metals. Certain compounds may not be solubilized during digestion, resulting in data that is biased low.

SOPs: MT-SOP-27(6), MT-SOP-29(5)

L481582 (Report ID: 1138900):

Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated accuracy applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process. The accuracy is based solely on spike recovery data from internal quality control samples. Where N/A appears below, insufficient data is available to provide statistical accuracy and mean recovery values for the associated analyte.

Parameter	Accuracy	Mean Recovery
Lead	+/-7.8%	99.7%

L481582 (Report ID: 1138885):

NYSDOH does not offer a certification for the following compounds:

Propylene, Ethyl Acetate, Tetrahydrofuran, Methyl n-Butyl Ketone, 4-Ethyl Toluene, n-Butane, Ethanol, Pentane, Ethyl Bromide, Nonane, and n-Propylbenzene.

SOPs: in-vocs(36)

Laboratory control samples (LCS/LCSD) recovered outside the control limits of 70.0 to 130% at 153 & 156% for Ethanol.

Bracketing continuing calibration verification standards (CCVs) recovered outside control limits of 70.0 to 130% at 134% for Ethanol.

L481582 (Report ID: 1138885):

Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated accuracy applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process. The accuracy is based solely on spike recovery data from internal quality control samples. Where N/A appears below, insufficient data is available to provide statistical accuracy and mean recovery values for the associated analyte.

Parameter	Accuracy	Mean Recovery
1,1,2-Trichloroethane	+/-10.1%	99.9%
1,1-Dichloroethene	+/-12.2%	101%
1,2-Dichloroethane	+/-14.7%	103%
2,2,4-Trimethylpentane	+/-12.5%	101%
Allyl Chloride	+/-18.4%	98.3%
Carbon Tetrachloride	+/-12.8%	104%
cis-1,2-Dichloroethylene	+/-12%	101%
cis-1,3-Dichloropropene	+/-12.5%	103%
1,4-Dioxane	+/-14.4%	99.6%
Tetrachloroethylene	+/-13.8%	100%
Toluene	+/-14.9%	101%



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Site : Town of Westford, MA
Project No. : Baseline AQ Sampling

Date Sampled : 30-MAY-19
Date Received: 03-JUN-19
Date Analyzed: 04-JUN-19 - 05-JUN-19

Account No.: 28289
Login No. : L481582

1,2-Dichlorobenzene	+/-17.4%	102%
1,3,5-Trimethylbenzene	+/-16.9%	103%
Acrolein	+/-20.2%	99.9%
Acrylonitrile	+/-14.7%	99.1%
Cyclohexane	+/-14.2%	101%
trans-1,2-Dichloroethene	+/-12.3%	100%
Vinyl Chloride	+/-16.6%	98.6%
1,1-Dichloroethane	+/-11%	98.8%
1,2,4-Trimethylbenzene	+/-19.1%	105%
1,2-Dichloropropane	+/-12.6%	98.1%
4-Ethyltoluene	+/-17.5%	104%
Dibromochloromethane	+/-15.3%	104%
Methyl Isobutyl Ketone	+/-19%	102%
tert-Butyl Alcohol	+/-16.7%	102%
2-Chlorotoluene	+/-15.5%	102%
Chloroethane	+/-15.6%	97.4%
Heptane	+/-15.7%	101%
Methyl Butyl Ketone	+/-20.8%	104%
Nonane	+/-17.6%	103%
Tetrahydrofuran	+/-18.4%	101%
trans-1,3-Dichloropropene	+/-12.2%	105%
Vinyl Acetate	+/-18.2%	101%
Vinyl Bromide	+/-16%	100%
1,3-Dichlorobenzene	+/-17.3%	101%
Acetonitrile	+/-21.8%	98.7%
Bromoform	+/-21.6%	105%
Benzene	+/-10.9%	99.2%
Naphthalene	+/-33%	106%
Hexane	+/-14%	99.6%
n-Propylbenzene	+/-14.7%	102%
Pentane	+/-16.1%	98.3%
1,1,2,2-Tetrachloroethane	+/-16.8%	99.2%
1,3-Butadiene	+/-16.1%	100%
Benzyl Chloride	+/-21%	106%
Chloroform	+/-10.6%	100%
Freon-11	+/-15.7%	103%
Freon-12	+/-19.7%	103%
Chloromethane	+/-18.5%	98%
Methylene Chloride	+/-12.4%	97.1%
Methyl tert-Butyl Ether	+/-14.5%	102%
Styrene	+/-17.3%	104%
1,4-Dichlorobenzene	+/-17.9%	102%
Acetone	+/-19.6%	102%
Bromodichloromethane	+/-10.9%	102%
Carbon Disulfide	+/-13.1%	97.5%



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Client Name : GZA GeoEnvironmental, Inc.
Site : Town of Westford, MA
Project No. : Baseline AQ Sampling

Date Sampled : 30-MAY-19
Date Received: 03-JUN-19
Date Analyzed: 04-JUN-19 - 05-JUN-19

Account No.: 28289
Login No. : L481582

Cumene	+/-15.8%	102%
Ethyl Acetate	+/-16.3%	101%
Ethyl Bromide	+/-13.5%	100%
Ethanol	+/-20%	101%
Freon-113	+/-10.5%	99%
Methyl Ethyl Ketone	+/-15.5%	101%
Methyl Methacrylate	+/-16.5%	104%
o-Xylene	+/-15.9%	103%
1,2-Dibromoethane	+/-16.1%	102%
n-Butane	+/-18.4%	97.8%
Chlorobenzene	+/-14.7%	98.9%
Ethylbenzene	+/-16.9%	103%
Freon-114	+/-14.6%	102%
Isopropyl Alcohol	+/-16.3%	101%
1,1,1-Trichloroethane	+/-12%	103%
Bromomethane	+/-13.2%	98.3%
m & p-xylene	+/-18.6%	103%
Propylene	+/-19.3%	96.7%
Trichloroethylene	+/-9.3%	100%

L481582 (Report ID: 1138690):

SOPs: GRAV-SOP-5(23), GRAV-SOP-6(19)

Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated accuracy applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process. The accuracy is based solely on spike recovery data from internal quality control samples. Where N/A appears below, insufficient data is available to provide statistical accuracy and mean recovery values for the associated analyte.

Asphalt Fume (Gravimetric): Accuracy: N/A; Mean Recovery: N/A

GZA ENV
Date:06/03/19
Shipper:PO
Initials:MAK
Prep:UNKNOWN

148582

GALSON CHAIN OF CUSTODY

w/Recut

Turn Around Time (TAT): (surcharge)	Client Acct No.: 28289	Report To: Mr. Samuel Despins	Invoice To: Mr. Samuel Despins
☒ Standard 0%	Company Name: GZA GeoEnvironmental, Inc.	Address 1: 5 Commerce Park North	Company Name: GZA GeoEnvironmental, Inc.
☐ 4 Business Days 35%	Address 2: Suite 201	Address 1: 5 Commerce Park North	Address 2: Suite 201
☐ 3 Business Days 50%	City, State Zip: Bedford, NH 03110	City, State Zip: Bedford, NH 03110	City, State Zip: Bedford, NH 03110
☐ 2 Business Days 75%	Phone No.: 603 - 232 - 8721	Phone No.:	Phone No.:
☐ Next Day by 6pm 100%	Cell No.: 603 - 767 - 4318	Email Address: rhonda.lavallee@gza.com,	Email Address: samuel.despins@gza.com
☐ Next Day by Noon 150%	Email reports to: samuel.despins@gza.com	Comments:	P.O. No.:
☐ Same Day 200%	Comments:	Payment info: ☐ I will call SGS Galson to provide credit card info	☐ Card on File (enter the last five digits on the line below)
☒ Samples submitted using the FreePumpLoan™ Program	Online COC No.: 182360		
☐ Samples submitted using the FreeSamplingBadges™ Program	"DUP"=#2, School #1=WL148, School #2=WL172 per client. BMC 6/6/19		

Comments: *Did not receive #1 & #2 of UWMCE or PTFE - 6/3/19 ID's are School & School (DUP) on each media type cassette*

State Sampled: Massachusetts

Please indicate which OEL(s) this data will be used for:

☒ OSHA PEL ☒ ACGIH TLV ☐ MSHA ☐ Cal OSHA

☐ IAQ: Specify Limit(s) ☒ Other: NIOSH Specify Other

Site Name: Town of Westford, MA Project: Baseline AQ Sampling Sampled By: David Thibault

List description of industry or Process/interferences present in sampling area:

Sample ID (Maximum of 20 Characters)	Date Sampled	Collection Medium	Sample Volume Sample Time Sample Area	Liters Minutes in ² , cm ² , ft ²	Analysis Requested	Method Reference ^	Hexavalent Chromium Process (e.g., welding, plating, painting, etc.)
BLANK PB	5/30/2019	37mm UW MCE, 3pc	N/A (BLANK)	N/A	Lead	mod. NIOSH 7303/mod. OSHA ID-125G; ICP	
SCHOOL #1 PB	5/30/2019	37mm UW MCE, 3pc	1193.952	L	Lead	mod. NIOSH 7303/mod. OSHA ID-125G; ICP	

☐ ^ If the method(s) indicated on the COC are not our routine/preferred method(s), we will substitute our routine/preferred methods. If this is not acceptable, check here to have us contact you.

Chain of Custody	Print Name / Signature	Date	Time	Print Name / Signature	Date	Time
Relinquished By:	Samuel Despins SIGNED ELECTRONICALLY	5/31/2019	09:46	Received By:		
Relinquished By:				Received By: Michelle Krause	6/3/19	1250

Samples received after 3pm will be considered as next day's business.

Online COC No.: 182360
Prep No.: PSY527701
Account No.: 28289
Finalized: 5/31/2019 9:53:29 AM

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: <http://www.sgs.com/en/Terms-and-Conditions.aspx>



GALSON

CHAIN OF CUSTODY

Comments :

XSuma IDS - WL172, WL148 SK6/3/19

Sample ID (Maximum of 20 Characters)	Date Sampled	Collection Medium	Sample Volume Sample Time Sample Area	Liters Minutes in ² , cm ² , ft ²	Analysis Requested	Method Reference ^	Hexavalent Chromium Process (e.g., welding, plating, painting, etc.)
SCHOOL #2 PB	5/30/2019	37mm UW MCE, 3pc	1193.952	L	Lead	mod. NIOSH 7303/mod. OSHA ID-125G; ICP	
BLANK AF	5/30/2019	37mm 1um PW PTFE, 2pc (black band)	N/A (BLANK)	N/A	Asphalt Fume (Gravimetric)	mod. NIOSH 5042/MDHS 14/4; GRAV	
SCHOOL #1 AF	5/30/2019	37mm 1um PW PTFE, 2pc (black band)	968.448	L	Asphalt Fume (Gravimetric)	mod. NIOSH 5042/MDHS 14/4; GRAV	
SCHOOL #2 AF	5/30/2019	37mm 1um PW PTFE, 2pc (black band)	968.448	L	Asphalt Fume (Gravimetric)	mod. NIOSH 5042/MDHS 14/4; GRAV	
SCHOOL #1 VOC	5/30/2019	6-L Canister	6	L	Volatile Organics Profile (TO15 list) (modified, see appendix Item No. 1)	mod. OSHA PV2120/mod. EPA TO15; GC/MS	Regulator flow rate assumed to be 0.0125 Lpm, correspondent to the requested 6L over 8 hour sampling period. Please run analysis for the TO15 list, ignore Appendix item #1.

☐ ^ If the method(s) indicated on the COC are not our routine/preferred method(s), we will substitute our routine/preferred methods. If this is not acceptable, check here to have us contact you.

Chain of Custody	Print Name / Signature	Date	Time	Print Name / Signature	Date	Time
Relinquished By :	Samuel Despina SIGNED ELECTRONICALLY	5/31/2019	09:46	Received By :		
Relinquished By :				Received By : Michelle Krause	5/31/19	1250

Samples received after 3pm will be considered as next day's business.

Online COC No. : 182360

Prep No. : PSY527701

Account No. : 28289

Finalized : 5/31/2019 9:53:29 AM

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CHAIN OF CUSTODY

Comments :

Sample ID (Maximum of 20 Characters)	Date Sampled	Collection Medium	Sample Volume Sample Time Sample Area	Liters Minutes in ² , cm ² , ft ²	Analysis Requested	Method Reference ^	Hexavalent Chromium Process (e.g., welding, plating, painting, etc.)
SCHOOL #2 VOC	5/30/2019	6-L Canister	5.44	L	Volatile Organics Profile (TO15 list) (modified, see appendix Item No. 1)	mod. OSHA PV2120/mod. EPA TO15; GC/MS	Regulator flow rate assumed to be 0.0125 Lpm, correspondent to the requested 6L over 8 hour sampling period. Please run analysis for the TO15 list, ignore Appendix item #1.

☐ ^ If the method(s) indicated on the COC are not our routine/preferred method(s), we will substitute our routine/preferred methods. If this is not acceptable, check here to have us contact you.

Chain of Custody	Print Name / Signature	Date	Time	Print Name / Signature	Date	Time
Relinquished By :	Samuel Deepins SIGNED ELECTRONICALLY	5/31/2019	09:46	Received By :		
Relinquished By :				Received By :	Wilhelmine Krause	6/3/19 1250

Samples received after 3pm will be considered as next day's business.

Online COC No. : 182360
 Prep No. : PSY527701
 Account No. : 28289
 Finalized : 5/31/2019 9:53:29 AM

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: <http://www.sgs.com/en/Terms-and-Conditions.aspx>

Appendix

[illegible]☐ ^a If the method(s) indicated on the COC are not our routine/preferred method(s), we will substitute our routine/preferred methods. If this is not acceptable, check here to have us contact you.

Chain of Custody	Print Name / Signature		Date	Time		Print Name / Signature		Date	Time
Relinquished By :	Samuel Despina	SIGNED ELECTRONICALLY	5/31/2019	09:46	Received By :				
Relinquished By :					Received By :	Michael Krause		6/3/19	1250

Samples received after 3pm will be considered as next day's business.

Online COC No. : 182360

Prep No. : PSY527701

Account No. : 28289

Finalized : 5/31/2019 9:53:29 AM

* All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: <http://www.sgs.com/en/Terms-and-Conditions.aspx>

