



JOHN H. ALLGAIR, PE, PP, LS (1983-2001)
DAVID J. SAMUEL, PE, PP, CME
JOHN J. STEFANI, PE, LS, PP, CME
JAY B. CORNELL, PE, PP, CME
MICHAEL J. McCLELLAND, PE, PP, CME
GREGORY R. VALES, PE, PP, CME

TIM W. GILLEN, PE, PP, CME (1991-2019)
BRUCE M. KOCH, PE, PP, CME
LOUIS J. PLOSKONKA, PE, CME
TREVOR J. TAYLOR, PE, PP, CME
BEHRAM TURAN, PE, LSRP
LAURA J. NEUMANN, PE, PP
DOUGLAS ROHMEYER, PE, CFM, CME
ROBERT J. RUSSO, PE, PP, CME
JOHN J. HESS, PE, PP, CME

April 24, 2023

Bureau of Case Assignment & Initial Notice
Site Remediation Program
New Jersey Department of Environmental Protection (NJDEP)
401-05H
P.O. Box 420
Trenton, NJ 08625-0420

**Re: Vapor Intrusion Investigation Report
25 Lakeside Avenue, Block 115, Lot 16
West Orange, New Jersey
NJDEP Case # 22-07-27-1645-19 and 22-11-14-1414-25
NJDEP SRP PI# 014423**

To Whom It May Concern:

In accordance with New Jersey Department of Environmental Protection (NJDEP) Vapor Intrusion Guidance (VIG), enclosed is a **Vapor Intrusion Investigation Report** prepared for West Orange DPW located at 25 Lakeside Avenue in West Orange, New Jersey.

Should you have any questions, please do not hesitate to call me at (908) 418-7848.

Very truly yours,
CME Associates

Manal Baba, LSRP
Project Manager

Enclosures

cc: Ms. Zayibeth Carballo
Assistant Municipal Engineer
Township of West Orange
Department of Public Works, Engineering Division
25 Lakeside Avenue, West Orange, NJ 07052
zcarballo@westorange.org

Mr. Michael A. Fonzino
Director of Health & Welfare
66 Main Street
Room 203
West Orange, NJ 07052



Bureau of Case Assignment & Initial Notice
Re: Vapor Intrusion Investigation Report
West Orange DPW 25 Lakeside Ave

April 2023
Page 2

Vapor Intrusion Investigation Report

WEST ORANGE DEPARTMENT OF PUBLIC WORKS
25 LAKESIDE AVENUE
BLOCK 115 LOT 16
WEST ORANGE, NEW JERSEY
NJDEP CASE # 93-05-04-1501-12 & 99-04-06-1412-47
22-07-27-1645-19 and 22-11-14-1414-25
NJDEP SRP PI# 014423

Prepared by:

CME Associates
3759 U.S. Highway 1 South, Suite 100
Monmouth Junction, New Jersey 08852
Tel: (732) 951-2101, Fax: (732) 951-2106

PREPARED FOR:

TOWNSHIP OF WEST ORANGE
DEPARTMENT OF PUBLIC WORKS
25 LAKESIDE AVENUE
WEST ORANGE, NEW JERSEY 07052

April 2023



Bureau of Case Assignment & Initial Notice
Re: Vapor Intrusion Investigation Report
West Orange DPW 25 Lakeside Ave

April 2023
Page 3

TABLE OF CONTENTS

LIST OF TABLES	4
LIST OF PLATES	4
LIST OF APPENDICES	4
1.0 GENERAL INFORMATION	5
2.0 SITE CHARACTERIZATION.....	5
2.1 Site Description, Site Use and Surrounding Land Use	5
2.2 Regional Geology.....	6
2.3 Site Geology	6
2.4 Regional Hydrogeology	6
2.5 Site Hydrogeology.....	7
3.0 VAPOR INTRUSION INVESTIGATION.....	7
4.0 CONCLUSION.....	11



Bureau of Case Assignment & Initial Notice
Re: Vapor Intrusion Investigation Report
West Orange DPW 25 Lakeside Ave

April 2023
Page 4

LIST OF TABLES

<u>Table No.</u>		<u>Description</u>
1	-	Indoor Air and Ambient Air Analytical Results
2	-	Sub-Slab Soil Gas Analytical Results

LIST OF PLATES

<u>Figure No.</u>		<u>Description</u>
1	-	Site Plan
2	-	Vapor Intrusion Investigation Sampling Location Plan

LIST OF APPENDICES

<u>Appendix No.</u>		<u>Description</u>
Appendix 1	-	Indoor Air Building Survey and Sampling Form
Appendix 2	-	Indoor Air, Ambient Air and Sub Slab Gas Laboratory Analytical Results, QA/QC Documents and Chain of Custody Forms



Bureau of Case Assignment & Initial Notice
Re: Vapor Intrusion Investigation Report
West Orange DPW 25 Lakeside Ave

April 2023
Page 5

1.0 GENERAL INFORMATION

The Township of West Orange (Client) retained CME Associates (CME) to provide environmental consulting services associated with remedial investigation (RI) and Remedial Action (RA) at the West Orange Department of Public Works (DPW) located at 25 Lakeside Avenue in the Township of West Orange, Essex County, New Jersey (Site).

A VI investigation was previously completed in 2014 and the results were presented in the 2016 RIR prepared by T&M. The sampling included the collection of four (4) sub-slab soil gas, two (2) indoor air, and one (1) ambient air samples for EPA TO-15 analysis.

Recently, a Preliminary Assessment was conducted at the Site and a Site Investigation was completed at all the identified additional areas of concern (AOCs) at the Site. Additional Vapor Intrusion Evaluation and sampling was recommended for AOC-22 (AOC-22: Vapor Intrusion (VI)) in accordance with established NJDEP Vapor Intrusion Guidance.

Site Information:

- A. Site name: West Orange Department of Public Works (DPW)
- B. Case identifiers: NJDEP Case #s 93-05-04-1501-12, 99-04-06-1412-47, 22-07-27-1645-19 and 22-11-14-1414-25
NJDEP SRP PI# 014423
- C. Site location: 25 Lakeside Avenue, Block 115 Lot 16, West Orange, New Jersey.

Figure 1 presents the Site plan depicting pertinent Site features.

2.0 SITE CHARACTERIZATION

2.1 Site Description, Site Use and Surrounding Land Use



Bureau of Case Assignment & Initial Notice
Re: Vapor Intrusion Investigation Report
West Orange DPW 25 Lakeside Ave

April 2023
Page 6

The Site is comprised of the 3.08 acre Lot 16 in Block 115 at the northeasterly side of Lakeside Avenue. Improvements at the DPW Site are comprised of three-wing structure with Office Wing, Repair Garage Wing and Storage Garage Wing. Asphalt paved parking areas are situated at the southwest and west sides of the DPW Site.

Vehicle fueling stations are situated to the west and northwest portions of the DPW Site. Salt storage dome, exterior salt storage and equipment storage are situated at the east portion of the DPW Site. The West Orange Animal Control Facility is situated at the east side of the DPW Site along Watchung Avenue. Access to the DPW Site is achieved via driveways from Lakeside Avenue and Watchung Avenue. The surrounding area to the north and west, were historically part of the Thomas Edison industrial complex, specifically, the Edison Phonographic Works.

2.2 Regional Geology

The Site is located in Essex County and lies entirely within the Triassic lowlands of the Piedmont Province. The Brunswick Formation, consisting of red-brown sandstone and Watchung Basalt underlie all of Essex County. A review of the Engineering Soil Survey of New Jersey, Report No. 2, Essex County, indicates that the general characteristics of the regional geology consist of unassorted, heterogeneous material, including clay, silt and sand, with varying percentages of gravel, cobbles and boulders. The Brunswick or Basalt Formation is overlain by non-residual deposits ascribed to the Wisconsin Glacier and are identified as ground morainic till.

2.3 Site Geology

Site-specific geological information from previous subsurface explorations indicates that the Site is almost entirely underlain by approximately 1.5 to 6 feet of fill material consisting of brown fine to coarse sand, concrete and brick rubble, ash, slag, metal fragments, and some gravel. The fill material is underlain by a layer of red-brown fine to coarse sand, some silt and little gravel. An organic clayey silt and olive peat is present at depths ranging from 8 to 10 feet bsg. The organic clayey silt stratum is underlain by a layer of fine sand.

2.4 Regional Hydrogeology

The Site is located within the Piedmont Province, which consists of primarily of lowland and gently rolling hills above which rise the Watchung Mountains. The Brunswick Formation is the predominant formation in the region. The formation consists of inter-bedded brown, reddish-brown, sandstone. Three sets of gray to black basalt are intermixed with sandstone of the Brunswick Formation. Glacial deposits, consisting predominantly of till, overlay the rocks.



Bureau of Case Assignment & Initial Notice
Re: Vapor Intrusion Investigation Report
West Orange DPW 25 Lakeside Ave

April 2023
Page 7

The bedrock of the Brunswick Formation is generally capable of sustaining moderate yields to wells. The Watchung basalt is capable of yielding only small quantities of water. Water occurs both under unconfined and confined conditions in these bedrock formations. The aquifers are anisotropic and water moves along the joints and fractures.

2.5 Site Hydrogeology

A review of the results of the previous investigations indicates monitoring wells have been set in the overburden water bearing unit. Groundwater within this unit was encountered during the last sampling event at depths ranging from approximately 4.0 to 9.0 feet bsg and it appears to be under unconfined conditions. Lateral groundwater flow within the overburden aquifer was determined to be generally South-Southeast.

3.0 VAPOR INTRUSION INVESTIGATION

CME's personnel visited the Site on March 30, 2023, to investigate the building and to complete an indoor air quality survey within the building.

The Site is currently improved with a single-story cinder block building (circa 1980) on a concrete slab foundation, includes an office area and a DPW maintenance area and storage garage.

1. Office Area: Offices, Dormitory/Waiting Room, Kitchen and Storage Room
2. DPW Garage - Maintenance area and storage garage Repair area with overhead-bay doors

Exterior areas consist of asphalt driveways and parking lots on the southwestern and eastern side of the structure.

The Site is bound to the north by the Former Barton Press Site (also former Edison complex), followed by Columbia Street and residential dwellings. The Site is bound to the west by the Former Barton Press Site (also former Edison Complex) followed by Main Street. The Site is bound to the south by Twin Towing followed by Lakeside Avenue and commercial properties including AWISCO (a welding supply company), and Joachim Driving School. The Site is bound to the east by Watchung Avenue followed by residential dwellings.

During the period of March 31 and April 2, 2023, CME conducted a VI investigation at the Site. The VI investigation was performed to evaluate the potential impacts to indoor air quality as a result of volatile organic vapors emanating from groundwater plume around the building at the Site.



Bureau of Case Assignment & Initial Notice
Re: Vapor Intrusion Investigation Report
West Orange DPW 25 Lakeside Ave

April 2023
Page 8

The vapor intrusion evaluation included the collection of a total of ten (10) air samples comprising three (3) indoor air samples (IA-1 through IA-3), six (6) sub-slab soil gas samples (SSGS-1 through SSSG-6) and one (1) ambient air sample (AA-1) from outside the building.

Prior to sampling, CME representative, with the help of the property owner's representative, completed the Indoor Air Quality–Building Survey Form to account for potential additional sources of VOCs (not related to the discharge at the Site) that may affect the air sample collected from the building.

The indoor air samples were collected first inside the building to avoid the potential for cross-contamination between the soil gas and indoor air.

Appendix 1 presents the Indoor Air Building Survey and Sampling Form. **Figure 2** presents the Vapor Intrusion Investigation Sampling Location Plan.

Summary of Sampling Results

Indoor Air Sampling Results – Office Area:

Concentrations of benzene were reported above the VI Exposure Pathway Remediation Standard Criteria in samples IA-1, IA-2 and IA-3 at concentrations that exceeded the Non-Residential and Residential Indoor Air Remediation Standards, however they were below the Rapid Action Levels (RAL). Benzene was not detected in any of the sub-slab soil gas samples collected within the office floors area, which indicates that detected benzene is not related to vapor intrusion issue at these locations. It could be related to using an air freshener or cleaning detergent at these locations, no further action is necessary for this pathway.

Ethylbenzene was detected below the Non-Residential VI Indoor Air Remediation Standards in samples IA-1, IA-2 and IA-3 at concentrations that exceeded only Residential Indoor Air Remediation Standards (does not apply to the Site), however they were below the Rapid Action Levels (RAL).

In addition, ethylbenzene was not detected in any of the sub-slab soil gas samples collected within the office floors area or garage floor area, which indicates that detected ethylbenzene is not related to vapor intrusion issue as there is no completed VI exposure pathway at these locations. It could be related to using an air freshener or cleaning detergent at these locations, no further action is necessary for this pathway.



Bureau of Case Assignment & Initial Notice
Re: Vapor Intrusion Investigation Report
West Orange DPW 25 Lakeside Ave

April 2023
Page 9

Based on the assessment of the results, these contaminants are found in the IA, but not the SSSG samples. These compounds are likely originating from background sources unrelated to VI and there is no completed VI exposure pathway. In this case, the Mitigation Decision Matrix directs the investigator to evaluate vadose zone (soil) contamination and preferential pathways as potential contributors to IA contamination, it is established that VI is not contributing to the IA contamination, no further action is necessary for this pathway.

Concentrations of trichloroethene were reported above the Residential VI Exposure Pathway Remediation Standard Criteria in samples IA-1, IA-2 and IA-3 at concentrations that exceeded only Residential Indoor Air Remediation Standards (does not apply to the Site), however they were below the Rapid Action Levels (RAL). Trichloroethene was detected above the Non-Residential and Residential Soil-Gas Screening Levels in the sub-slab soil gas samples. Therefore, long-term monitoring (LTM), without system installation, may be the appropriate mitigative action.

Table 1 presents the analytical results of the indoor air gas samples.

Indoor Air at DPW Garage - Maintenance Area – Storage/Repair Garage :

Indoor Air sampling was not conducted within the DPW *Garage*. **In general, the investigator should not collect IA samples in a building (or portion of a building) where operations use, handle or store the same investigative Contaminant of Concern (COC) (e.g., dry cleaners, active gas service stations, maintenance facilities, various industrial operations). In these situations, it is difficult to determine whether air contaminants present in a building are from operational activities within the facility or from the subsurface (VI).**

“As recommended by the NJDEP Vapor Intrusion Technical Guidance, indoor air samples were not collected at (fill in name/address of specific building) due to operational use, handling or storage of the investigative COC within the building (insert alternative language if appropriate based on site-specific circumstances). Thus, the VI pathway at this building is “indeterminate.” Unless otherwise dictated by permit requirements, annual inspections of this building are necessary to identify any change in use. A change in use necessitates the prompt completion of the VI investigation consistent with N.J.A.C. 7:26E-1.15.”

Sub-slab Soil Gas Sampling Results:

Benzene was detected in one sub-slab soil gas sample (SSSG-4) located within the DPW garage area at a concentration $2.5 \mu\text{g}/\text{m}^3$ which is below the Non-Residential and Residential Soil-Gas Screening Levels.



Bureau of Case Assignment & Initial Notice
Re: Vapor Intrusion Investigation Report
West Orange DPW 25 Lakeside Ave

April 2023
Page 10

Concentrations of trichloroethene were reported above the Non-Residential and Residential Soil-Gas Screening Levels (SGSL) in samples SSAS-2, SSSG-3, SSSG-5 and SSSG-6.

Based on the assessment of the results, trichloroethene is found in the sub-slab soil gas (SSSG) samples but below the Non-Residential Indoor Air Remediation Standards in the indoor air (IA) samples. In this case, the Mitigation Decision Matrix indicates that sampling results of SSSG that are greater than the SGSL but at or less than 10 times the Non-Residential SGSL, long-term monitoring (LTM) is recommended. The following details the recommended LTM schedule:

First year LTM:

1. Annual inspection of building
2. Sampling of IA during heating season.

After first year LTM:

1. Annual inspections of building
2. Sampling of IA every five years

Table 2 presents the analytical results of the sub-slab gas samples. **Appendix 2** presents the Indoor Air, Ambient Air and Sub Slab Gas Laboratory Analytical Results, QA/QC Documents and Chain of Custody Forms.



Bureau of Case Assignment & Initial Notice
Re: Vapor Intrusion Investigation Report
West Orange DPW 25 Lakeside Ave

April 2023
Page 11

Decision Flow Chart for Vapor Intrusion Pathway

Mitigation Decision Matrix - (Step 4)

		Indoor Air Concentrations (for COCs)	
		<IARS	>IARS
Sub-Slab Soil Gas Concentrations (for COCs)	<SGSL	No Action	No Action* (if no other subsurface source)
	>SGSL to 10X SGSL	Monitor**	Mitigate
	>10X SGSL	Monitor / Mitigate	Mitigate

Notes:

* Investigator should consider the potential for vadose zone (soil) contamination and/or preferential pathways as part of the assessment of vapor intrusion before concluding "no further action"

** Refer to Table 6-2

(Excerpts from NJDEP Vapor Intrusion Guidance, dated May 2021- Version 5.0)

4.0 CONCLUSION

The analytical results of the vapor intrusion investigation indicated that all volatile organic compounds were below the most stringent NJDEP regulatory levels. The results of the soil gas and indoor air investigations and the "building walkthrough and survey" were evaluated in accordance with the criteria outlined in the Decision Flow Chart for Vapor Intrusion Pathway and Section 3.1 of the VIG Document.

Based on the investigation results reviewed by CME and according to the NJDEP Vapor Intrusion Guidance, no further vapor intrusion investigation action is required at the Site. Future monitoring/long-term monitoring (LTM) is recommended as detailed above.



Bureau of Case Assignment & Initial Notice
Re: Vapor Intrusion Investigation Report
West Orange DPW 25 Lakeside Ave

April 2023
Page 12

NJDEP Variance:

Since the last update of the Technical Rules (August 6, 2018) and available variances (February 4, 2019), the Department has implemented changes related to the VI pathway that will be reflected in the future regulatory revisions. The following available VI related variances are recognized by the Department and acceptable for use by the investigator:

- *7:26E-1.7(a) – The Department no longer requires notice on a separate form prior to varying from a technical requirement. The Variance Identification form is no longer available. Rather, on each Key Document form (i.e., SI, RI, RA, etc.), complete the section indicating that the particular phase of the remediation includes a variance taken under N.J.A.C. 7:26E-1.7.*
- *7:26E-1.15(c)1 – The Department no longer expects a notification (by form or spreadsheet) of future sampling events.*
- *7:26E-1.15(g) – The Department no longer utilizes the Heath Department Notification Levels. In addition, the Department no longer requires the submission of indoor and ambient air analytical results to the New Jersey Department of Health, except for samples collected at educational facilities and child care centers as defined in "Standards for Indoor Environment Certification and for Licensure of Indoor Environmental Consultants," N.J.A.C. 8:50-1.3 and pursuant to N.J.A.C. 7:26E-1.15(h).*

"Per the Department's direction as noted in the NJDEP Listserv entitled "[SRRA]: Submission of indoor and ambient air analytical results to the New Jersey Department of Health," indoor and ambient air analytical results, including all maps and figures related to the indoor air sampling, and a sample location spreadsheet do not need to be submitted to the New Jersey Department of Health pursuant to N.J.A.C. 7:26E-1.15(h) unless samples are collected at educational facilities or child care centers as defined in "Standards for Indoor Environment Certification and for Licensure of Indoor Environmental Consultants", N.J.A.C. 8:50-1.3."

TABLE 1
INDOOR AIR & AMBIENT AIR SAMPLE ANALYTICAL RESULTS (APRIL 2023)
West Orange DPW - 25 LAKESIDE AVENUE
WEST ORANGE, ESSEX COUNTY, NEW JERSEY



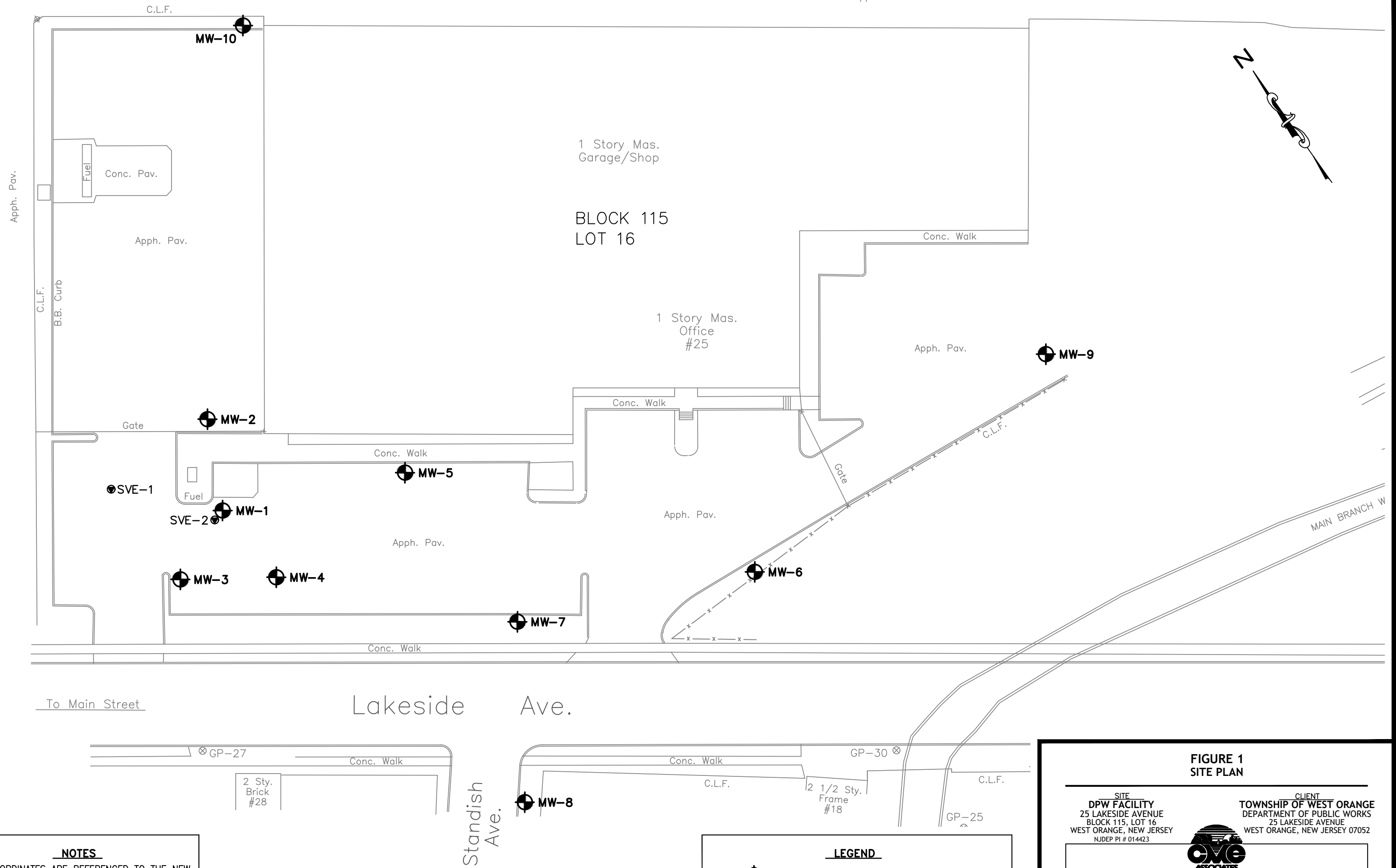
SAMPLE ID:								IA-1				IA-2				IA-3				AA-040123						
LAB ID:								L2317290-01				L2317290-02				L2317290-03				L2317290-04						
COLLECTION DATE:		NJDEP REMEDIATION STANDARDS						4/2/2023				4/2/2023				4/2/2023				4/2/2023						
SAMPLE MATRIX:		VI Exposure Pathway		Indoor Air Remediation Standards		IA Rapid Action Levels																				
		Remediation Std																								
		NJ-RIARS	NJ-NRIARS	NJ-RIAS	NJ-NRIAS	NJ-IRRAL	NJ-INRAL																			
	CAS	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL			
NJ VOLATILE ORGANICS IN AIR																										
1,1,1-Trichloroethane	71-55-6	5200	22000	5200	22000	10000	44000	1.5	1.1	-	1.2	1.1	-	2	1.1	-	ND	1.1	-	ND	1.1	-	ND			
1,1,2,2-Tetrachloroethane	79-34-5	-	-	-	-	-	-	ND	1.4	-	ND	1.4	-	ND	1.4	-	ND	1.4	-	ND	1.4	-	ND			
1,1,2-Trichloroethane	79-00-5	-	-	-	-	-	-	ND	1.1	-	ND	1.1	-	ND	1.1	-	ND	1.1	-	ND	1.1	-	ND			
1,1-Dichloroethane	75-34-3	-	-	-	-	-	-	ND	0.81	-	ND	0.81	-	ND	0.81	-	ND	0.81	-	ND	0.81	-	ND			
1,1-Dichloroethane	75-35-4	21	88	21	88	42	180	ND	0.79	-	ND	0.79	-	ND	0.79	-	ND	0.79	-	ND	0.79	-	ND			
1,2,4-Trichlorobenzene	120-82-1	3.7	8.8	3.7	8.8	4.2	18	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND			
1,2,4-Trimethylbenzene	95-63-6	63	260	63	260	130	520	2	0.98	-	2.2	0.98	-	ND	2.3	0.98	-	ND	2.3	0.98	-	ND	2.3	0.98	-	ND
1,2-Dibromomethane	106-93-4	1.5	1.5	1.5	1.5	1.5	2	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND			
1,2-Dichlorobenzene	95-50-1	210	880	210	880	420	1800	ND	1.2	-	ND	1.2	-	ND	1.2	-	ND	1.2	-	ND	1.2	-	ND			
1,2-Dichloroethane	107-06-2	7.3	31	7.3	31	15	62	ND	0.81	-	ND	0.81	-	ND	0.81	-	ND	0.81	-	ND	0.81	-	ND			
1,2-Dichloropropane	78-87-5	0.92	3.3	0.92	3.3	8.4	36	ND	0.92	-	ND	0.92	-	ND	0.92	-	ND	0.92	-	ND	0.92	-	ND			
1,3,5-Trimethylbenzene	108-67-8	-	-	-	-	-	-	ND	0.98	-	ND	0.98	-	ND	0.98	-	ND	0.98	-	ND	0.98	-	ND			
1,3-Butadiene	106-99-0	-	-	-	-	-	-	ND	0.44	-	ND	0.44	-	ND	0.44	-	ND	0.44	-	ND	0.44	-	ND			
1,3-Dichlorobenzene	541-73-1	-	-	-	-	-	-	ND	1.2	-	ND	1.2	-	ND	1.2	-	ND	1.2	-	ND	1.2	-	ND			
1,4-Dichlorobenzene	106-46-7	830	3500	830	3500	1700	7000	ND	1.2	-	ND	1.2	-	ND	1.2	-	ND	1.2	-	ND	1.2	-	ND			
1,4-Dioxane	123-91-1	0.72	2.5	0.72	2.5	56	250	ND	0.72	-	ND	0.72	-	ND	0.72	-	ND	0.72	-	ND	0.72	-	ND			
2,2,4-Trimethylpentane	540-84-1	-	-	-	-	-	-	3.6	0.93	-	4.3	0.93	-	4	0.93	-	ND	0.93	-	ND	0.93	-	ND			
2-Butanone	78-93-3	5200	22000	5200	22000	10000	44000	2.5	1.5	-	2.7	1.5	-	2.2	1.5	-	ND	1.5	-	ND	1.5	-	ND			
2-Chlorotoluene	95-49-8	-	-	-	-	-	-	ND	1	-	ND	1	-	ND	1	-	ND	1	-	ND	1	-	ND			
3-Chloropropene	107-05-1	-	-	-	-	-	-	ND	0.63	-	ND	0.63	-	ND	0.63	-	ND	0.63	-	ND	0.63	-	ND			
4-Ethyltoluene	622-96-8	-	-	-	-	-	-	ND	0.98	-	ND	0.98	-	ND	0.98	-	ND	0.98	-	ND	0.98	-	ND			
4-Methyl-2-pentanone	108-10-1	3100	13000	3100	13000	6200	26000	2.1	2	-	2.4	2	-	2.3	2	-	ND	2	-	ND	2	-	ND			
Acetone	67-64-1	-	-	-	-	-	-	6.7	2.4	-	95	2.4	-	59	2.4	-	9	2.4	-	9	2.4	-	9			
Benzene	71-43-2	0.64	1.6	0.64	1.6	36	160	1.9	0.64	-	2.1	0.64	-	1.9	0.64	-	ND	0.64	-	ND	0.64	-	ND			
Bromodichloromethane	75-27-4	-	-	-	-	-	-	ND	1.3	-	ND	1.3	-	ND	1.3	-	ND	1.3	-	ND	1.3	-	ND			
Bromoform	75-25-2	-	-	-	-	-	-	ND	2.1	-	ND	2.1	-	ND	2.1	-	ND	2.1	-	ND	2.1	-	ND			
Bromomethane	74-83-9	5.2	22	5.2	22	10	44	ND	0.78	-	ND	0.78	-	ND	0.78	-	ND	0.78	-	ND	0.78	-	ND			
Carbon disulfide	75-15-0	730	3100	730	3100	1500	6200	ND	0.62	-	ND	0.62	-	ND	0.62	-	ND	0.62	-	ND	0.62	-	ND			
Carbon tetrachloride	56-23-5	1.3	2	1.3	2	47	200	ND	1.3	-	ND	1.3	-	ND	1.3	-	ND	1.3	-	ND	1.3	-	ND			
Chlorobenzene	108-90-7	52	220	52	220	100	440	ND	0.92	-	ND	0.92	-	ND	0.92	-	ND	0.92	-	ND	0.92	-	ND			
Chloroethane	75-00-3	10000	44000	10000	44000	20000	88000	ND	0.53	-	ND	0.53	-	ND	0.53	-	ND	0.53	-	ND	0.53	-	ND			
Chloroform	67-66-3	100	430	100	430	200	860	ND	0.98	-	ND	0.98	-	ND	0.98	-	ND	0.98	-	ND	0.98	-	ND			
Chloromethane	74-87-3	94	390	94	390	190	780	1.2	0.41	-	1.1	0.41	-	1.1	0.41	-	1.1	0.41	-	1.1	0.41	-	1.1			
cis-1,2-Dichloroethene	156-59-2	-	-	-	-	-	-	ND	0.79	-	ND	0.79	-	ND	0.79	-	ND	0.79	-	ND	0.79	-	ND			
cis-1,3-Dichloropropene	10061-01-5	0.91	3.1	-	-	-	-	ND	0.91	-	ND	0.91	-	ND	0.91	-	ND	0.91	-	ND	0.91	-	ND			
Cyclohexane	110-82-7	6300	26000	6300	26000	13000	52000	1.2	0.69	-	1.4	0.69	-	1.3	0.69	-	ND	0.69	-	ND	0.69	-	ND			
Dibromochloromethane	124-48-1	-	-	-	-	-	-	ND	1.7	-	ND	1.7	-	ND	1.7	-	ND	1.7	-	ND	1.7	-	ND			
Dichlorodifluoromethane	75-71-8	-	-	-	-	-	-	5.9	0.99	-	5.9	0.99	-	4.9	0.99	-	4.9	0.99	-	4.9	0.99	-	4.9			
Ethanol	64-17-5	-	-	-	-	-	-	140	9.4	-	190	9.4	-	130	9.4	-	ND	9.4	-	ND	9.4	-	ND			
Ethylbenzene	100-41-4	1.1	4.9	1.1	4.9	110	490	1.5	0.87	-	1.8	0.87	-	1.6	0.87	-	ND	0.87	-	ND	0.87	-	ND			
Freon-113	76-13-1	5200	22000	5200	22000	10000	44000	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND			
Freon-114	76-14-2	-	-	-	-	-	-	ND	1.4	-	ND	1.4	-	ND	1.4	-	ND	1.4	-	ND	1.4	-	ND			
Heptane	142-82-5	-	-	-	-	-	-	3.2	0.82	-	3.6	0.82	-	3.2	0.82	-	ND	0.82	-	ND	0.82	-	ND			
Hexachlorobutadiene	87-68-3	-	-	-	-	-	-	ND	2.1	-	ND	2.1	-	ND	2.1	-	ND	2.1	-	ND	2.1	-	ND			
Isopropanol	67-63-0	-	-	-	-	-	-	42	1.2	-	37	1.2	-	39	1.2	-	ND	1.2	-	ND	1.2	-	ND			
Methyl Methacrylate	80-62-6	-	-	-	-	-	-	ND	2	-	ND	2	-	ND	2	-	ND	2	-	ND	2	-	ND			
Methyl tert butyl ether	1634-04-4	11	47	11	47	1100	4700	ND	0.72	-	ND	0.72	-	ND	0.72	-	ND	0.72	-	ND	0.72	-	ND			
Methylene chloride	75-09-2	280	1200	280	1200	1300	5200	ND	1.7	-	ND	1.7	-	ND	1.7	-	ND	1.7	-	ND	1.7	-	ND			
n-Hexane	110-54-3	730	3100	730	3100	1500	6200	5.3	0.7	-	6.7	0.7	-	5.6	0.7	-	ND	0.7	-	ND	0.7	-	ND			
o-Xylene	95-47-6	100	440	100	440	200	880	2	0.87	-	2.3	0.87	-	2	0.87	-	ND	0.87	-	ND	0.87	-	ND			
p/m-Xylene	179601-23-	100	440	100	440	200	880	5.2	1.7	-	6.5	1.7	-	5.6	1.7	-	ND	1.7	-	ND	1.7	-	ND			
Styrene	100-42-5	1000	4400	1000	4400	2000	8800	ND	0.85	-	ND	0.85	-	ND	0.85	-	ND	0.85	-	ND	0.85	-	ND			
Tertiary butyl Alcohol	75-65-0	-	-	-	-	-	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND			
Tetrachloroethene	127-18-4	11	47	11	47	84	360	2.2	1.4	-	2.4	1.4	-	2.4	1.4	-	ND	1.4	-	ND	1.4	-	ND			
Tetrahydrofuran	109-99-9	-	-	-	-	-	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND			
Toluene	108-88-3	5200	22000	5200	22000	10000	44000	8.7	0.75	-	12	0.75	-	8.7	0.75	-	ND	0.75	-	ND	0.75	-	ND			
trans-1,2-Dichloroethene	156-60-5	-	-	-	-	-	-	ND	0.79	-	ND	0.79	-	ND	0.79	-	ND	0.79	-	ND	0.79	-	ND			
trans-1,3-Dichloropropene	10061-02-6	0.91	3.1	-	-	-	-	ND	0.91	-	ND	0.91	-	ND	0.91	-	ND	0.91	-	ND	0.91	-	ND			
Trichloroethene	79-01-6	1.1	3	1.1	3	4.2	18	1.8	1.1	-	1.5	1.1	-	1.8	1.1	-	ND	1.1	-	ND	1.1	-	ND			
Trichlorofluoromethane	75-69-4	-	-	-	-	-	-	100	1.1	-	90	1.1	-	100	1.1	-	1.3	1.1	-	1.3	1.1	-	1.3			
Vinyl bromide	593-60-2	-	-	-	-	-	-	ND	0.87	-	ND	0.87	-	ND	0.87	-	ND	0.87	-	ND	0.87	-	ND			
Vinyl chloride	75-01-4	0.64	2.8	0.64	2.8	64	280	ND	0.51	-	ND	0.51	-	ND	0.51	-	ND	0.51	-	ND	0.51	-	ND			
NJ VOLATILE ORGANICS IN AIR-TIC																										
No Tentatively Identified Compounds		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Butane	000106-97-	-	-	-	-	-	-	11.2	NJ	0	-	14.6	NJ	0	-	11.6	NJ	0	-	-	-	-	-			
Unknown		-	-	-	-	-	-	1.27	J	0	-	2.29	J	0	-	1.24	J	0	-	-	-	-	-			
Isobutane	000075-28-	-	-	-	-	-	-	3.97	NJ	0	-	4.61	NJ	0	-	3.83	NJ	0	-	-	-	-	-			
Nonane (C9)	000111-84-	-	-	-	-	-	-	1.06	NJ	0	-	1.11	NJ	0	-	1.16	NJ	0	-	-	-	-	-			
Acetaldehyde	000075-07-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				

TABLE 2
SUB-SLAB SOIL GAS SAMPLE ANALYTICAL RESULTS (APRIL 2023)
West Orange DPW - 25 LAKESIDE AVENUE
WEST ORANGE, ESSEX COUNTY, NEW JERSEY
NJDEP SRP PI# 014423

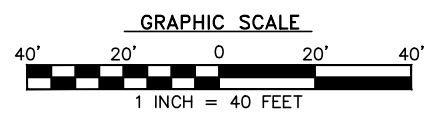


SAMPLE ID: LAB ID: COLLECTION DATE: SAMPLE MATRIX:	Soil-Gas Screening Levels				SSSG-1				SSSG-2				SSSG-3				SSSG-4				SSSG-5				SSSG-6				
					L2317290-06				L2317290-07				L2317290-08				L2317290-05				L2317290-09				L2317290-10				
					4/1/2023				4/1/2023				4/1/2023				4/1/2023				4/1/2023				4/1/2023				
SOIL_VAPOR					SOIL_VAPOR					SOIL_VAPOR					SOIL_VAPOR					SOIL_VAPOR					SOIL_VAPOR				
ANALYTE	CAS	NJ-RSGS (ug/m3)	NJ-NRSGS (ug/m3)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL		
NJ VOLATILE ORGANICS IN AIR																													
1,1,1-Trichloroethane	71-55-6	260000	1100000	2.8	1.1	-	4.3	1.1	-	5	1.1	-	1.6	1.1	-	5.1	1.1	-	13	1.8	-								
1,1,2,2-Tetrachloroethane	79-34-5	-	-	ND	1.4	-	ND	1.4	-	ND	1.4	-	ND	1.4	-	ND	1.4	-	ND	1.4	-								
1,1,2-Trichloroethane	79-00-5	-	-	ND	1.1	-	ND	1.1	-	ND	1.1	-	ND	1.1	-	ND	1.1	-	ND	1.1	-								
1,1-Dichloroethane	75-34-3	-	-	ND	0.81	-	ND	0.81	-	ND	0.81	-	ND	0.81	-	ND	0.81	-	ND	0.81	-								
1,1-Dichloroethene	75-35-4	1000	4400	ND	0.79	-	ND	0.79	-	ND	0.79	-	ND	0.79	-	ND	0.79	-	ND	0.79	-								
1,2,4-Trichlorobenzene	120-82-1	100	440	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-								
1,2,4-Trimethylbenzene	95-63-6	3100	13000	ND	0.98	-	ND	0.98	-	ND	0.98	-	ND	0.98	-	4.9	0.98	-	2	0.98	-								
1,2-Dibromochloroethane	106-93-4	15	15	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-								
1,2-Dichlorobenzene	95-50-1	10000	44000	ND	1.2	-	ND	1.2	-	ND	1.2	-	ND	1.2	-	ND	1.2	-	ND	1.2	-								
1,2-Dichloroethane	107-06-2	360	1500	ND	0.81	-	ND	0.81	-	ND	0.81	-	ND	0.81	-	ND	0.81	-	ND	0.81	-								
1,2-Dichloropropane	78-87-5	38	170	ND	0.92	-	ND	0.92	-	ND	0.92	-	ND	0.92	-	ND	0.92	-	ND	0.92	-								
1,3,5-Trimethylbenzene	108-67-8	-	-	ND	0.98	-	ND	0.98	-	ND	0.98	-	ND	0.98	-	1.8	0.98	-	ND	0.98	-								
1,3-Butadiene	106-99-0	-	-	ND	0.44	-	ND	0.44	-	ND	0.44	-	ND	0.44	-	ND	0.44	-	ND	0.44	-								
1,3-Dichlorobenzene	541-73-1	-	-	ND	1.2	-	ND	1.2	-	ND	1.2	-	ND	1.2	-	ND	1.2	-	ND	1.2	-								
1,4-Dichlorobenzene	106-46-7	42000	180000	ND	1.2	-	ND	1.2	-	ND	1.2	-	ND	1.2	-	ND	1.2	-	ND	1.2	-								
1,4-Dioxane	123-91-1	28	120	ND	0.72	-	ND	0.72	-	ND	0.72	-	ND	0.72	-	ND	0.72	-	ND	0.72	-								
2,2,4-Trimethylpentane	540-84-1	-	-	ND	0.93	-	ND	0.93	-	ND	0.93	-	6.5	0.93	-	ND	0.93	-	ND	0.93	-								
2-Butanone	78-93-3	260000	1100000	1.9	1.5	-	ND	1.5	-	ND	1.5	-	4.1	1.5	-	ND	1.5	-	ND	1.5	-								
2-Chlorotoluene	95-49-6	-	-	ND	1	-	ND	1	-	ND	1	-	ND	1	-	ND	1	-	ND	1	-								
3-Chloropropene	107-05-1	-	-	ND	0.63	-	ND	0.63	-	ND	0.63	-	ND	0.63	-	ND	0.63	-	ND	0.63	-								
4-Ethyltoluene	622-96-8	-	-	ND	0.98	-	ND	0.98	-	ND	0.98	-	1	0.98	-	ND	0.98	-	ND	0.98	-								
4-Methyl-2-pentanone	108-10-1	160000	660000	ND	2	-	ND	2	-	ND	2	-	7.4	2	-	3.1	2	-	ND	2	-								
Acetone	67-64-1	-	-	4	2.4	-	5.2	2.4	-	5.5	2.4	-	40	2.4	-	8.8	2.4	-	13	2.4	-								
Benzene	71-43-2	18	79	ND	0.64	-	ND	0.64	-	ND	0.64	-	2.5	0.64	-	ND	0.64	-	ND	0.64	-								
Bromodichloromethane	75-27-4	-	-	ND	1.3	-	2.3	1.3	-	ND	1.3	-	ND	1.3	-	ND	1.3	-	ND	1.3	-								
Bromofom	75-25-2	-	-	ND	2.1	-	ND	2.1	-	ND	2.1	-	ND	2.1	-	ND	2.1	-	ND	2.1	-								
Bromomethane	74-83-9	260	1100	ND	0.78	-	ND	0.78	-	ND	0.78	-	ND	0.78	-	ND	0.78	-	ND	0.78	-								
Carbon disulfide	75-15-0	36000	150000	ND	0.62	-	ND	0.62	-	ND	0.62	-	4.4	0.62	-	ND	0.62	-	ND	0.62	-								
Carbon tetrachloride	56-23-5	23	100	ND	1.3	-	1.3	1.3	-	1.4	1.3	-	ND	1.3	-	2.2	1.3	-	ND	1.3	-								
Chlorobenzene	108-90-7	2600	11000	ND	0.92	-	ND	0.92	-	ND	0.92	-	ND	0.92	-	ND	0.92	-	ND	0.92	-								
Chloroethane	75-00-3	520000	2200000	ND	0.53	-	ND	0.53	-	ND	0.53	-	ND	0.53	-	ND	0.53	-	ND	0.53	-								
Chloroform	67-66-3	5100	21000	2.1	0.98	-	1.8	0.98	-	9.3	0.98	-	5.9	0.98	-	6.3	0.98	-	7.3	0.98	-								
Chloromethane	74-87-3	4700	20000	ND	0.41	-	ND	0.41	-	ND	0.41	-	0.52	0.41	-	ND	0.41	-	ND	0.41	-								
cis-1,2-Dichloroethene	156-59-2	-	-	ND	0.79	-	ND	0.79	-	1.6	0.79	-	4	0.79	-	10	0.79	-	3.5	1.3	-								
cis-1,3-Dichloropropene	10061-01-5	-	-	ND	0.91	-	ND	0.91	-	ND	0.91	-	ND	0.91	-	ND	0.91	-	ND	0.91	-								
Cyclohexane	110-82-7	310000	1300000	0.69	0.69	-	ND	0.69	-	ND	0.69	-	2.1	0.69	-	ND	0.69	-	ND	0.69	-								
Dibromochloromethane	124-48-1	-	-	ND	1.7	-	ND	1.7	-	ND	1.7	-	ND	1.7	-	ND	1.7	-	ND	1.7	-								
Dichlorodifluoromethane	75-71-8	-	-	15	0.99	-	2.7	0.99	-	2.9	0.99	-	2.6	0.99	-	2.4	0.99	-	2.5	1.6	-								
Ethanol	64-17-5	-	-	ND	0.4	-	ND	0.4	-	23	0.4	-	28	0.4	-	28	0.4	-	19	16	-								
Ethylbenzene	100-41-4	56	250	ND	0.87	-	ND	0.87	-	ND	0.87	-	2.4	0.87	-	ND	0.87	-	ND	0.87	-								
Freon-113	76-13-1	260000	1100000	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-								
Freon-114	76-14-2	-	-	ND	1.4	-	ND	1.4	-	ND	1.4	-	ND	1.4	-	ND	1.4	-	ND	1.4	-								
Heptane	142-82-5	-	-	ND	0.82	-	ND	0.82	-	ND	0.82	-	3.3	0.82	-	ND	0.82	-	ND	0.82	-								
Hexachlorobutadiene	87-68-3	-	-	ND	2.1	-	ND	2.1	-	ND	2.1	-	ND	2.1	-	ND	2.1	-	ND	2.1	-								
Isopropanol	67-63-0	-	-	ND	1.2	-	ND	1.2	-	1.6	1.2	-	2.7	1.2	-	ND	1.2	-	ND	1.2	-								
Methyl Methacrylate	80-62-6	-	-	ND	2	-	ND	2	-	ND	2	-	ND	2	-	ND	2	-	ND	2	-								
Methyl tert butyl ether	1634-04-4	540	2400	ND	0.72	-	ND	0.72	-	ND	0.72	-	ND	0.72	-	ND	0.72	-	ND	0.72	-								
Methylene chloride	75-09-2	14000	61000	4.9	1.7	-	ND	1.7	-	ND	1.7	-	ND	1.7	-	ND	1.7	-	2.7	1.7	-								
n-Hexane	110-54-3	36000	150000	ND	0.7	-	ND	0.7	-	ND	0.7	-	5.6	0.7	-	ND	0.7	-	ND	0.7	-								
o-Xylene	95-47-6	5200	22000	ND	0.87	-	ND	0.87	-	ND	0.87	-	4.3	0.87	-	ND	0.87	-	ND	0.87	-								
p/m-Xylene	179601-23-1	5200	22000	ND	1.7	-	ND	1.7	-	ND	1.7	-	9.6	1.7	-	ND	1.7	-	ND	1.7	-								
Styrene	100-42-5	52000	220000	ND	0.85	-	ND	0.85	-	ND	0.85	-	ND	0.85	-	ND	0.85	-	ND	0.85	-								
Tertiary butyl Alcohol	75-65-0	-	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-								
Tetrachloroethene	127-18-4	540	2400	67	1.4	-	75	1.4	-	270	1.4	-	95	1.4	-	120	1.4	-	180	2.2	-								
Tetrahydrofuran	109-99-9	-	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-	ND	1.5	-								
Toluene	108-88-3	260000	1100000	ND	0.75	-	ND	0.75	-	ND	0.75	-	11	0.75	-	1.5	0.75	-	1.5	0.75	-								
trans-1,2-Dichloroethene	156-60-5	-	-	ND	0.79	-	ND	0.79	-	ND	0.79	-	ND	0.79	-	ND	0.79	-	ND	0.79	-								
trans-1,3-Dichloropropene	10061-02-6	-	-	ND	0.91	-	ND	0.91	-	ND	0.91	-	ND	0.91	-														

R:\W0380 DPW 25 Lakeside Ave\02\W000380.02 MAIN.dwg 04/06/21 08:42:58AM LAYOUT SITE PLAN



- NOTES**
- 1) COORDINATES ARE REFERENCED TO THE NEW JERSEY STATE PLANE COORDINATE SYSTEM.
 - 2) ELEVATIONS ARE REFERENCED TO NATIONAL GEODETIC VERTICAL DATUM (1929).

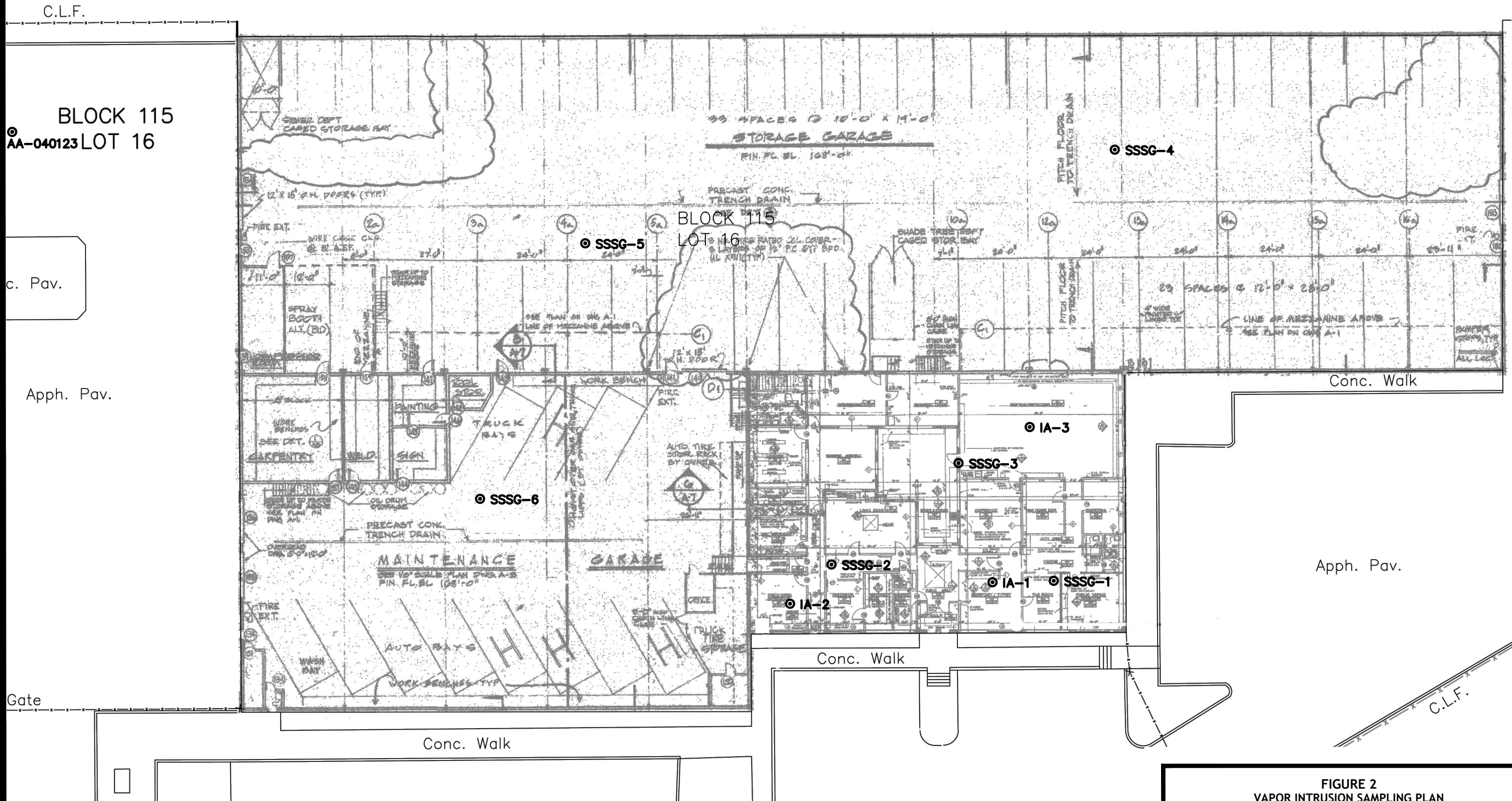


LEGEND

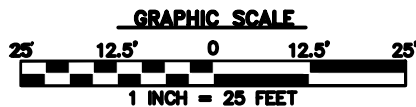
- MW-1 EXISTING MONITORING WELL LOCATION
- SVE-1 EXISTING SOIL VAPOR EXTRACTION WELL

**FIGURE 1
SITE PLAN**

SITE DPW FACILITY 25 LAKESIDE AVENUE BLOCK 115, LOT 16 WEST ORANGE, NEW JERSEY NJDEP PI # 014423		CLIENT TOWNSHIP OF WEST ORANGE DEPARTMENT OF PUBLIC WORKS 25 LAKESIDE AVENUE WEST ORANGE, NEW JERSEY 07052	
 CONSULTING AND MUNICIPAL ENGINEERS 3759 U.S. Hwy 1 South • Suite 100, Monmouth Junction, NJ 08852—Phone: (732)951-2101 Fax: (732)951-2106			
DRAWN BY: JDH/RP	PROJECT NO.: W000380.02	DRAWING: 2	
CHECKED BY: MB	DRAWING SCALE: 1" = 40'	SHEET: 2 OF 12	
APPROVED BY: MB/BT	DATE: APRIL 2021		



- NOTES**
- COORDINATES ARE REFERENCED TO THE NEW JERSEY STATE PLANE COORDINATE SYSTEM.
 - ELEVATIONS ARE REFERENCED TO NATIONAL GEODETIC VERTICAL DATUM (1929).



- LEGEND**
- SSSG-1 SUB-SLAB AIR SAMPLE
 - IA-1 INDOOR AIR SAMPLE
 - AA-040123 AMBIENT AIR SAMPLE

FIGURE 2
VAPOR INTRUSION SAMPLING PLAN

SITE
DPW FACILITY
25 LAKESIDE AVENUE
BLOCK 115, LOT 16
WEST ORANGE, NEW JERSEY
NJDEP PI # 014423

CLIENT
TOWNSHIP OF WEST ORANGE
DEPARTMENT OF PUBLIC WORKS
25 LAKESIDE AVENUE
WEST ORANGE, NEW JERSEY 07052



CONSULTING AND MUNICIPAL ENGINEERS

3759 U.S. Hwy 1 South - Suite 100, Monmouth Junction, NJ 08852 - Phone: (732) 951-2101 Fax: (732) 951-2106

DRAWN BY: KB	PROJECT NO.: IW000380.09	DRAWING: 6
CHECKED BY: MB	DRAWING SCALE: 1" = 25'	SHEET: 6 OF 6
APPROVED BY: MB/BT	DATE: APRIL 2023	



Bureau of Case Assignment & Initial Notice
Re: Vapor Intrusion Investigation Report
West Orange DPW 25 Lakeside Ave

April 2023
Page 13

Appendix 1



New Jersey Department of Environmental Protection

INDOOR AIR BUILDING SURVEY
and SAMPLING FORM

Preparer's name: Eric Snee Date: 4/1/2023

Preparer's affiliation: CME Associates Phone #: (732) 951-2101

Site Name: Department of Public Works Case #: SRP PI No. 014423

Part I - Occupants

Building Address: 25 Lakeside Avenue, West Orange, NJ 07052

Building Block: 115 Lot: 16

Property Contact: Joe Pelose Owner / Renter / other: Superintendent of Public Works

Contact's Phone: home () work (973) 325-4153 cell ()

Part II - Building Characteristics

Building type: residential / multi-family residential / office / strip mall / commercial / industrial

Describe building: masonry bldg. - DPW Offices & Maintenance/Storage Garages

Sensitive population: day care / nursing home / hospital / school / other (specify):

Number of floors below grade: 0 (full basement / crawlspace / slab on grade)

Approx. depth of basement below grade surface: NA ft. Basement size: NA ft²

Basement floor construction: concrete / dirt / floating / stone / other (specify):

Foundation walls: poured concrete / cinder blocks / stone / other (specify)

Basement sump present? Yes / No Sump pump? Yes / No Water in sump? Yes / No

Trench drains in garages formerly discharged to grit boxes outside bldg.
Are the basement walls or floor sealed with waterproof paint or epoxy coatings? Yes / No

Is there a whole house fan? Yes / No Exhaust fans in garages

Type of ground cover outside of building: grass / concrete / asphalt / other (specify)

Existing subsurface depressurization (radon) system in place? Yes / No active / passive

Sub-slab vapor/moisture barrier in place? Yes / No

Type of barrier:

What Type of Heating System does the building have (past & current)?

Offices - forced air & electric baseboard; Maint. garage - infrared;

Storage garage - not heated (formerly gas-fired units)

Part III – Indoor Contaminant Sources

Identify all potential indoor sources found in the building (including attached garages), the location of the source (floor and room), and whether the item was removed from the building 48 hours prior to indoor air sampling event. Any ventilation implemented after removal of the items should be completed at least 24 hours prior to the commencement of the indoor air sampling event.

Potential Sources	Location(s)	Removed (Yes / No / NA)
Gasoline storage cans	garages	
Gas-powered equipment	garages	
Kerosene storage cans		
Moth balls		
Air fresheners		
Fuel tank (inside building)		NA
Wood stove or fireplace		NA
New furniture / upholstery		
New carpeting / flooring		NA
Hobbies - glues, paints, etc.	garages, office storage space	No
LIST OTHER IMPORTANT SOURCES IDENTIFIED:		
ammonia solution (diaz machine)	offices - utility/storage room	No
motor oils, waste oils	garages	
grease, lubricating agents	garages	
hydraulic, transmission, brake fluids	garages	
welding equipment	garages	

Part IV – Miscellaneous Items

Do any occupants of the building smoke? Yes / No How often? _____

Last time someone smoked in the building? 20+ years hours / days ago

Does the building have an attached garage directly connected to living space? Yes / No Office/garage spaces directly connected

If so, is a car usually parked in the garage? Yes / No cars, trucks, & heavy equipment

Are gas-powered equipment or cans of gasoline/fuels stored in the garage? Yes / No

Do the occupants of the building have their clothes dry cleaned? Yes / No Unknown

If yes, how often? weekly / monthly / 3-4 times a year

Do any of the occupants use solvents in work? Yes / No

If yes, what types of solvents are used? vehicle/equipment maintenance (degreasers, cleaners, etc.)

If yes, are their clothes washed at work? Yes / No

Has painting or staining been done in the building in the last 6 months? Yes / No

If yes, when _____ and where? _____

Provide any information that may be pertinent to the sampling event and may assist in the data interpretation process.

Active DPW maintenance/storage garages attached directly to office space

Indoor air sampled in office space only; sub-slab soil-gas sampled in offices and garages

Part V – Sampling Information

Sample Technician: Eric Snee Phone number: (732) 951 - 2101

Company: CME Associates

Sample Source: Indoor Air / Sub-Slab / Near Slab Soil Gas / Exterior Soil Gas

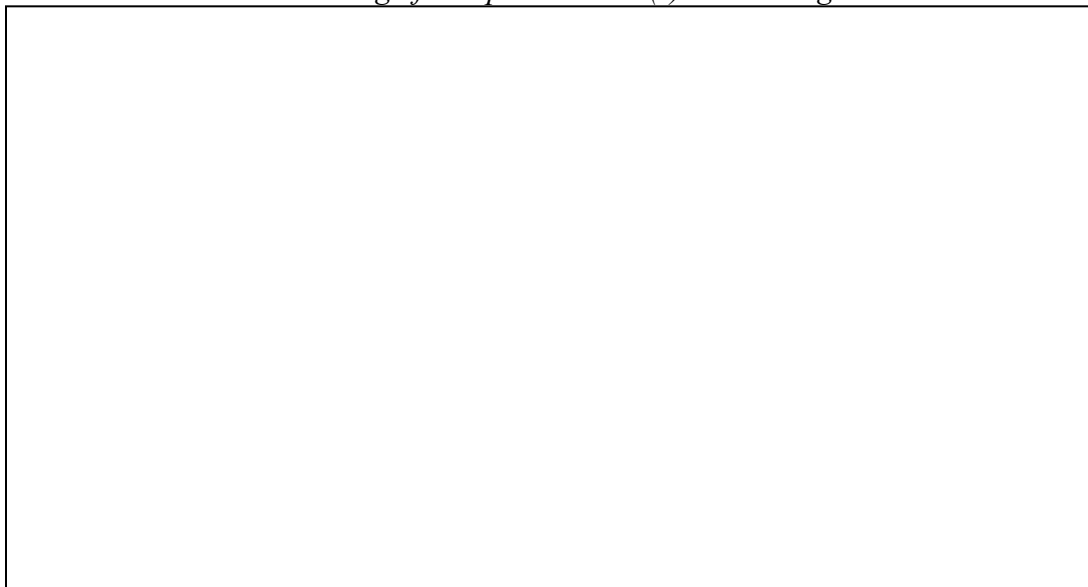
Were “Instructions for Occupants” followed? Yes / No

If not, describe modifications: _____

Sample locations (floor, room):

Sample #	Location	Analytical Method	Sample Volume	Sample Time	Sample Date	Sampler Type	Ambient Temp (°F)

Drawing of Sample Location(s) in Building



Type of field instrument used (include summary of results): _____

Part VI - Meteorological Conditions

Was there significant precipitation within 12 hours prior to (or during) the sampling event? Yes / No

Describe the general weather conditions: 4/1/23 - temps in 50s to 70s, periodic rain, increasing winds evening of 4/1 to morning of 4/2 - thunderstorms, strong winds; 4/2/23 - 40s to 50s, partly cloudy



Bureau of Case Assignment & Initial Notice
Re: Vapor Intrusion Investigation Report
West Orange DPW 25 Lakeside Ave

April 2023
Page 14

Appendix 2



ANALYTICAL REPORT

Lab Number:	L2317290
Client:	CME Associates 3759 US Hwy 1 South Suite 100 Monmouth Junction, NJ 08852
ATTN:	Suresh Puppala
Phone:	(732) 951-2101
Project Name:	WEST ORANGE DPW
Project Number:	IN000380.09
Report Date:	04/17/23

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com



Project Name: WEST ORANGE DPW
Project Number: IN000380.09

Lab Number: L2317290
Report Date: 04/17/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2317290-01	IA-1	AIR	Not Specified	04/02/23 12:11	04/03/23
L2317290-02	IA-2	AIR	Not Specified	04/02/23 08:36	04/03/23
L2317290-03	IA-3	AIR	Not Specified	04/02/23 11:58	04/03/23
L2317290-04	AA-040123	AIR	Not Specified	04/02/23 11:36	04/03/23
L2317290-05	SSSG-4	SOIL_VAPOR	Not Specified	04/01/23 16:56	04/03/23
L2317290-06	SSSG-1	SOIL_VAPOR	Not Specified	04/01/23 14:25	04/03/23
L2317290-07	SSSG-2	SOIL_VAPOR	Not Specified	04/01/23 15:09	04/03/23
L2317290-08	SSSG-3	SOIL_VAPOR	Not Specified	04/01/23 13:50	04/03/23
L2317290-09	SSSG-5	SOIL_VAPOR	Not Specified	04/01/23 10:09	04/03/23
L2317290-10	SSSG-6	SOIL_VAPOR	Not Specified	04/01/23 11:46	04/03/23

Project Name: WEST ORANGE DPW
Project Number: IN000380.09

Lab Number: L2317290
Report Date: 04/17/23

**NJ DEP Data of Known Quality Protocols
 Conformance/Non-Conformance
 Summary Questionnaire**

1	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the NJDEP Data of Known Quality performance standards?	YES
1a	Were the method specified handling, preservation, and holding time requirements met?	YES
1b	EPH Method: Was the EPH Method conducted without significant modifications (see Section 11.3 of respective DKQ methods)?	N/A
2	Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)?	YES
3	Were all samples received at an appropriate temperature ($4 \pm 2^{\circ} \text{C}$)?	N/A
4	Were all QA/QC performance criteria specified in the NJDEP DKQP standards achieved?	YES
5a	Were reporting limits specified or referenced on the chain-of-custody or communicated to the laboratory prior to sample receipt?	NO
5b	Were these reporting limits met?	N/A
6	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the DKQP documents and/or site-specific QAPP?	YES
7	Are project-specific matrix spikes and/or laboratory duplicates included in this data set?	NO

Note: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to question #1, #1a or #1b is "No", the data package does not meet the requirements for "Data of Known Quality".

Project Name: WEST ORANGE DPW
Project Number: IN000380.09

Lab Number: L2317290
Report Date: 04/17/23

Case Narrative

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

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

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

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

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

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

Project Name: WEST ORANGE DPW
Project Number: IN000380.09

Lab Number: L2317290
Report Date: 04/17/23

Case Narrative (continued)

NJDEP Volatile Organics in Air

Canisters were released from the laboratory on March 31, 2023. The canister certification results are provided as an addendum.

Any Manual integrations that were performed on the sample(s), as well as on the associated quality control samples, are noted on the individual quantitation reports. A listing of all manual integrations performed and the integration code definitions are provided in the manual integration documentation section of the data package.

Please note: Dilution analysis due to exceedance of the calibration range is not required for Ethanol or Isopropyl Alcohol.

GC column and trap information utilized for the analysis of this sample delivery group is detailed below:

Column Type: Restek RTX-1

Column Length: 60 Meters

Internal diameter: 0.52 mm

Film thickness: 1.00 um

Trap 1: Entech Cold Trap - no packing material

Trap 2: Entech Tenax - 20 cm packing material

Gaseous calibration standards were utilized for system calibration and quality control standards associated with this sample delivery group. These standards were purchased from Linde (formerly Spectra Gases).

Laboratory standard procedure for QC (i.e. method blanks, LCS) and sample analysis is to withdraw a 250 mL aliquot from the canister as the "1X" analysis. For some calibration levels and samples, subsequent dilutions will be performed as needed by decreasing aliquot volumes via the instrumentation, or by performing a dilution using a second canister. Make-up air is not routinely added to canisters prior to sample analysis.

Project Name: WEST ORANGE DPW
Project Number: IN000380.09

Lab Number: L2317290
Report Date: 04/17/23

Case Narrative (continued)

DKQP Related Narratives

L2317290-10D: The sample has elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

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

Authorized Signature:  Christopher J. Anderson

Title: Technical Director/Representative

Date: 04/17/23

AIR

Project Name: WEST ORANGE DPW**Project Number:** IN000380.09**Lab Number:** L2317290**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-01

Client ID: IA-1

Sample Location:

Date Collected: 04/02/23 12:11

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Matrix: Air

Analytical Method: 48,TO-15

Analytical Date: 04/15/23 17:34

Analyst: RAY

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	1.2	0.20	--	5.9	0.99	--		1
Chloromethane	0.59	0.20	--	1.2	0.41	--		1
Freon-114	ND	0.20	--	ND	1.4	--		1
Vinyl chloride	ND	0.20	--	ND	0.51	--		1
1,3-Butadiene	ND	0.20	--	ND	0.44	--		1
Bromomethane	ND	0.20	--	ND	0.78	--		1
Chloroethane	ND	0.20	--	ND	0.53	--		1
Ethanol	76	5.0	--	140	9.4	--		1
Vinyl bromide	ND	0.20	--	ND	0.87	--		1
Acetone	28	1.0	--	67	2.4	--		1
Trichlorofluoromethane	18	0.20	--	100	1.1	--		1
Isopropanol	17	0.50	--	42	1.2	--		1
1,1-Dichloroethene	ND	0.20	--	ND	0.79	--		1
Tertiary butyl Alcohol	ND	0.50	--	ND	1.5	--		1
Methylene chloride	ND	0.50	--	ND	1.7	--		1
3-Chloropropene	ND	0.20	--	ND	0.63	--		1
Carbon disulfide	ND	0.20	--	ND	0.62	--		1
Freon-113	ND	0.20	--	ND	1.5	--		1
trans-1,2-Dichloroethene	ND	0.20	--	ND	0.79	--		1
1,1-Dichloroethane	ND	0.20	--	ND	0.81	--		1
Methyl tert butyl ether	ND	0.20	--	ND	0.72	--		1
2-Butanone	0.84	0.50	--	2.5	1.5	--		1
cis-1,2-Dichloroethene	ND	0.20	--	ND	0.79	--		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-01

Client ID: IA-1

Sample Location:

Date Collected: 04/02/23 12:11

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Chloroform	ND	0.20	--	ND	0.98	--		1
Tetrahydrofuran	ND	0.50	--	ND	1.5	--		1
1,2-Dichloroethane	ND	0.20	--	ND	0.81	--		1
n-Hexane	1.5	0.20	--	5.3	0.70	--		1
1,1,1-Trichloroethane	0.28	0.20	--	1.5	1.1	--		1
Benzene	0.58	0.20	--	1.9	0.64	--		1
Carbon tetrachloride	ND	0.20	--	ND	1.3	--		1
Cyclohexane	0.36	0.20	--	1.2	0.69	--		1
1,2-Dichloropropane	ND	0.20	--	ND	0.92	--		1
Bromodichloromethane	ND	0.20	--	ND	1.3	--		1
1,4-Dioxane	ND	0.20	--	ND	0.72	--		1
Trichloroethene	0.34	0.20	--	1.8	1.1	--		1
2,2,4-Trimethylpentane	0.78	0.20	--	3.6	0.93	--		1
Methyl Methacrylate	ND	0.50	--	ND	2.0	--		1
Heptane	0.77	0.20	--	3.2	0.82	--		1
cis-1,3-Dichloropropene	ND	0.20	--	ND	0.91	--		1
4-Methyl-2-pentanone	0.51	0.50	--	2.1	2.0	--		1
trans-1,3-Dichloropropene	ND	0.20	--	ND	0.91	--		1
1,1,2-Trichloroethane	ND	0.20	--	ND	1.1	--		1
Toluene	2.3	0.20	--	8.7	0.75	--		1
Dibromochloromethane	ND	0.20	--	ND	1.7	--		1
1,2-Dibromoethane	ND	0.20	--	ND	1.5	--		1
Tetrachloroethene	0.33	0.20	--	2.2	1.4	--		1
Chlorobenzene	ND	0.20	--	ND	0.92	--		1
Ethylbenzene	0.35	0.20	--	1.5	0.87	--		1
p/m-Xylene	1.2	0.40	--	5.2	1.7	--		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-01

Client ID: IA-1

Sample Location:

Date Collected: 04/02/23 12:11

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Bromoform	ND	0.20	--	ND	2.1	--		1
Styrene	ND	0.20	--	ND	0.85	--		1
1,1,2,2-Tetrachloroethane	ND	0.20	--	ND	1.4	--		1
o-Xylene	0.45	0.20	--	2.0	0.87	--		1
2-Chlorotoluene	ND	0.20	--	ND	1.0	--		1
4-Ethyltoluene	ND	0.20	--	ND	0.98	--		1
1,3,5-Trimethylbenzene	ND	0.20	--	ND	0.98	--		1
1,2,4-Trimethylbenzene	0.41	0.20	--	2.0	0.98	--		1
1,3-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,4-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,2-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,2,4-Trichlorobenzene	ND	0.20	--	ND	1.5	--		1
Hexachlorobutadiene	ND	0.20	--	ND	2.1	--		1

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					
unknown alkane	2.57	J	ppbV		1
Pentane, 3-methyl-	1.18	NJ	ppbV		1
Decane (C10)	1.02	NJ	ppbV		1
Butane	11.2	NJ	ppbV		1
Methyl Alcohol	9.36	NJ	ppbV		1
Pentane	3.64	NJ	ppbV		1
Unknown	1.27	J	ppbV		1
unknown alkane	1.03	J	ppbV		1
Nonane (C9)	1.06	NJ	ppbV		1
Isobutane	3.97	NJ	ppbV		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-01

Date Collected: 04/02/23 12:11

Client ID: IA-1

Date Received: 04/03/23

Sample Location:

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								

Tentatively Identified Compounds	Results	Qualifier	Units	RDL	Dilution Factor

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	86		60-140
Bromochloromethane	88		60-140
chlorobenzene-d5	82		60-140

Project Name: WEST ORANGE DPW**Project Number:** IN000380.09**Lab Number:** L2317290**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-02

Client ID: IA-2

Sample Location:

Date Collected: 04/02/23 08:36

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Matrix: Air

Analytical Method: 48,TO-15

Analytical Date: 04/15/23 18:13

Analyst: RAY

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	1.2	0.20	--	5.9	0.99	--		1
Chloromethane	0.54	0.20	--	1.1	0.41	--		1
Freon-114	ND	0.20	--	ND	1.4	--		1
Vinyl chloride	ND	0.20	--	ND	0.51	--		1
1,3-Butadiene	ND	0.20	--	ND	0.44	--		1
Bromomethane	ND	0.20	--	ND	0.78	--		1
Chloroethane	ND	0.20	--	ND	0.53	--		1
Ethanol	100	5.0	--	190	9.4	--		1
Vinyl bromide	ND	0.20	--	ND	0.87	--		1
Acetone	40	1.0	--	95	2.4	--		1
Trichlorofluoromethane	16	0.20	--	90	1.1	--		1
Isopropanol	15	0.50	--	37	1.2	--		1
1,1-Dichloroethene	ND	0.20	--	ND	0.79	--		1
Tertiary butyl Alcohol	ND	0.50	--	ND	1.5	--		1
Methylene chloride	ND	0.50	--	ND	1.7	--		1
3-Chloropropene	ND	0.20	--	ND	0.63	--		1
Carbon disulfide	ND	0.20	--	ND	0.62	--		1
Freon-113	ND	0.20	--	ND	1.5	--		1
trans-1,2-Dichloroethene	ND	0.20	--	ND	0.79	--		1
1,1-Dichloroethane	ND	0.20	--	ND	0.81	--		1
Methyl tert butyl ether	ND	0.20	--	ND	0.72	--		1
2-Butanone	0.93	0.50	--	2.7	1.5	--		1
cis-1,2-Dichloroethene	ND	0.20	--	ND	0.79	--		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-02

Client ID: IA-2

Sample Location:

Date Collected: 04/02/23 08:36

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Chloroform	ND	0.20	--	ND	0.98	--		1
Tetrahydrofuran	ND	0.50	--	ND	1.5	--		1
1,2-Dichloroethane	ND	0.20	--	ND	0.81	--		1
n-Hexane	1.9	0.20	--	6.7	0.70	--		1
1,1,1-Trichloroethane	0.22	0.20	--	1.2	1.1	--		1
Benzene	0.65	0.20	--	2.1	0.64	--		1
Carbon tetrachloride	ND	0.20	--	ND	1.3	--		1
Cyclohexane	0.42	0.20	--	1.4	0.69	--		1
1,2-Dichloropropane	ND	0.20	--	ND	0.92	--		1
Bromodichloromethane	ND	0.20	--	ND	1.3	--		1
1,4-Dioxane	ND	0.20	--	ND	0.72	--		1
Trichloroethene	0.27	0.20	--	1.5	1.1	--		1
2,2,4-Trimethylpentane	0.91	0.20	--	4.3	0.93	--		1
Methyl Methacrylate	ND	0.50	--	ND	2.0	--		1
Heptane	0.89	0.20	--	3.6	0.82	--		1
cis-1,3-Dichloropropene	ND	0.20	--	ND	0.91	--		1
4-Methyl-2-pentanone	0.59	0.50	--	2.4	2.0	--		1
trans-1,3-Dichloropropene	ND	0.20	--	ND	0.91	--		1
1,1,2-Trichloroethane	ND	0.20	--	ND	1.1	--		1
Toluene	3.1	0.20	--	12	0.75	--		1
Dibromochloromethane	ND	0.20	--	ND	1.7	--		1
1,2-Dibromoethane	ND	0.20	--	ND	1.5	--		1
Tetrachloroethene	0.35	0.20	--	2.4	1.4	--		1
Chlorobenzene	ND	0.20	--	ND	0.92	--		1
Ethylbenzene	0.42	0.20	--	1.8	0.87	--		1
p/m-Xylene	1.5	0.40	--	6.5	1.7	--		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-02

Client ID: IA-2

Sample Location:

Date Collected: 04/02/23 08:36

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Bromoform	ND	0.20	--	ND	2.1	--		1
Styrene	ND	0.20	--	ND	0.85	--		1
1,1,2,2-Tetrachloroethane	ND	0.20	--	ND	1.4	--		1
o-Xylene	0.53	0.20	--	2.3	0.87	--		1
2-Chlorotoluene	ND	0.20	--	ND	1.0	--		1
4-Ethyltoluene	ND	0.20	--	ND	0.98	--		1
1,3,5-Trimethylbenzene	ND	0.20	--	ND	0.98	--		1
1,2,4-Trimethylbenzene	0.44	0.20	--	2.2	0.98	--		1
1,3-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,4-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,2-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,2,4-Trichlorobenzene	ND	0.20	--	ND	1.5	--		1
Hexachlorobutadiene	ND	0.20	--	ND	2.1	--		1

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					
Butane, 2,3-Dimethyl-	1.03	NJ	ppbV		1
Decane (C10)	1.03	NJ	ppbV		1
Unknown	2.29	J	ppbV		1
Methyl Alcohol	11.9	NJ	ppbV		1
Cyclopentane, Methyl-	1.07	NJ	ppbV		1
Isobutane	4.61	NJ	ppbV		1
Butane	14.6	NJ	ppbV		1
Nonane (C9)	1.11	NJ	ppbV		1
unknown alkane	1.05	J	ppbV		1
Pentane, 3-methyl-	1.28	NJ	ppbV		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-02

Date Collected: 04/02/23 08:36

Client ID: IA-2

Date Received: 04/03/23

Sample Location:

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					
Pentane	4.42	NJ	ppbV		1
Pentane, 2-methyl-	2.62	NJ	ppbV		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	91		60-140
Bromochloromethane	93		60-140
chlorobenzene-d5	89		60-140

Project Name: WEST ORANGE DPW**Project Number:** IN000380.09**Lab Number:** L2317290**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-03

Client ID: IA-3

Sample Location:

Date Collected: 04/02/23 11:58

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Matrix: Air

Analytical Method: 48,TO-15

Analytical Date: 04/15/23 18:53

Analyst: RAY

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	1.0	0.20	--	4.9	0.99	--		1
Chloromethane	0.54	0.20	--	1.1	0.41	--		1
Freon-114	ND	0.20	--	ND	1.4	--		1
Vinyl chloride	ND	0.20	--	ND	0.51	--		1
1,3-Butadiene	ND	0.20	--	ND	0.44	--		1
Bromomethane	ND	0.20	--	ND	0.78	--		1
Chloroethane	ND	0.20	--	ND	0.53	--		1
Ethanol	70	5.0	--	130	9.4	--		1
Vinyl bromide	ND	0.20	--	ND	0.87	--		1
Acetone	25	1.0	--	59	2.4	--		1
Trichlorofluoromethane	18	0.20	--	100	1.1	--		1
Isopropanol	16	0.50	--	39	1.2	--		1
1,1-Dichloroethene	ND	0.20	--	ND	0.79	--		1
Tertiary butyl Alcohol	ND	0.50	--	ND	1.5	--		1
Methylene chloride	1.3	0.50	--	4.5	1.7	--		1
3-Chloropropene	ND	0.20	--	ND	0.63	--		1
Carbon disulfide	ND	0.20	--	ND	0.62	--		1
Freon-113	ND	0.20	--	ND	1.5	--		1
trans-1,2-Dichloroethene	ND	0.20	--	ND	0.79	--		1
1,1-Dichloroethane	ND	0.20	--	ND	0.81	--		1
Methyl tert butyl ether	ND	0.20	--	ND	0.72	--		1
2-Butanone	0.73	0.50	--	2.2	1.5	--		1
cis-1,2-Dichloroethene	ND	0.20	--	ND	0.79	--		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-03

Client ID: IA-3

Sample Location:

Date Collected: 04/02/23 11:58

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Chloroform	ND	0.20	--	ND	0.98	--		1
Tetrahydrofuran	ND	0.50	--	ND	1.5	--		1
1,2-Dichloroethane	ND	0.20	--	ND	0.81	--		1
n-Hexane	1.6	0.20	--	5.6	0.70	--		1
1,1,1-Trichloroethane	0.37	0.20	--	2.0	1.1	--		1
Benzene	0.61	0.20	--	1.9	0.64	--		1
Carbon tetrachloride	ND	0.20	--	ND	1.3	--		1
Cyclohexane	0.39	0.20	--	1.3	0.69	--		1
1,2-Dichloropropane	ND	0.20	--	ND	0.92	--		1
Bromodichloromethane	ND	0.20	--	ND	1.3	--		1
1,4-Dioxane	ND	0.20	--	ND	0.72	--		1
Trichloroethene	0.34	0.20	--	1.8	1.1	--		1
2,2,4-Trimethylpentane	0.86	0.20	--	4.0	0.93	--		1
Methyl Methacrylate	ND	0.50	--	ND	2.0	--		1
Heptane	0.77	0.20	--	3.2	0.82	--		1
cis-1,3-Dichloropropene	ND	0.20	--	ND	0.91	--		1
4-Methyl-2-pentanone	0.55	0.50	--	2.3	2.0	--		1
trans-1,3-Dichloropropene	ND	0.20	--	ND	0.91	--		1
1,1,2-Trichloroethane	ND	0.20	--	ND	1.1	--		1
Toluene	2.3	0.20	--	8.7	0.75	--		1
Dibromochloromethane	ND	0.20	--	ND	1.7	--		1
1,2-Dibromoethane	ND	0.20	--	ND	1.5	--		1
Tetrachloroethene	0.36	0.20	--	2.4	1.4	--		1
Chlorobenzene	ND	0.20	--	ND	0.92	--		1
Ethylbenzene	0.36	0.20	--	1.6	0.87	--		1
p/m-Xylene	1.3	0.40	--	5.6	1.7	--		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-03

Client ID: IA-3

Sample Location:

Date Collected: 04/02/23 11:58

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Bromoform	ND	0.20	--	ND	2.1	--		1
Styrene	ND	0.20	--	ND	0.85	--		1
1,1,2,2-Tetrachloroethane	ND	0.20	--	ND	1.4	--		1
o-Xylene	0.47	0.20	--	2.0	0.87	--		1
2-Chlorotoluene	ND	0.20	--	ND	1.0	--		1
4-Ethyltoluene	ND	0.20	--	ND	0.98	--		1
1,3,5-Trimethylbenzene	ND	0.20	--	ND	0.98	--		1
1,2,4-Trimethylbenzene	0.46	0.20	--	2.3	0.98	--		1
1,3-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,4-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,2-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,2,4-Trichlorobenzene	ND	0.20	--	ND	1.5	--		1
Hexachlorobutadiene	ND	0.20	--	ND	2.1	--		1

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					
Isobutane	3.83	NJ	ppbV		1
Decane (C10)	1.17	NJ	ppbV		1
Nonane (C9)	1.16	NJ	ppbV		1
Methyl Alcohol	10.4	NJ	ppbV		1
Pentane, 3-methyl-	1.25	NJ	ppbV		1
Butane	11.6	NJ	ppbV		1
unknown alkane	1.14	J	ppbV		1
Pentane	3.95	NJ	ppbV		1
Unknown	1.24	J	ppbV		1
Pentane, 2-methyl-	2.36	NJ	ppbV		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-03

Date Collected: 04/02/23 11:58

Client ID: IA-3

Date Received: 04/03/23

Sample Location:

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								

Tentatively Identified Compounds	Results	Qualifier	Units	RDL	Dilution Factor

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	92		60-140
Bromochloromethane	91		60-140
chlorobenzene-d5	87		60-140

Project Name: WEST ORANGE DPW**Project Number:** IN000380.09**Lab Number:** L2317290**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-04

Client ID: AA-040123

Sample Location:

Date Collected: 04/02/23 11:36

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Matrix: Air

Analytical Method: 48,TO-15

Analytical Date: 04/15/23 16:47

Analyst: RAY

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.49	0.20	--	2.4	0.99	--		1
Chloromethane	0.54	0.20	--	1.1	0.41	--		1
Freon-114	ND	0.20	--	ND	1.4	--		1
Vinyl chloride	ND	0.20	--	ND	0.51	--		1
1,3-Butadiene	ND	0.20	--	ND	0.44	--		1
Bromomethane	ND	0.20	--	ND	0.78	--		1
Chloroethane	ND	0.20	--	ND	0.53	--		1
Ethanol	ND	5.0	--	ND	9.4	--		1
Vinyl bromide	ND	0.20	--	ND	0.87	--		1
Acetone	3.8	1.0	--	9.0	2.4	--		1
Trichlorofluoromethane	0.24	0.20	--	1.3	1.1	--		1
Isopropanol	ND	0.50	--	ND	1.2	--		1
1,1-Dichloroethene	ND	0.20	--	ND	0.79	--		1
Tertiary butyl Alcohol	ND	0.50	--	ND	1.5	--		1
Methylene chloride	ND	0.50	--	ND	1.7	--		1
3-Chloropropene	ND	0.20	--	ND	0.63	--		1
Carbon disulfide	ND	0.20	--	ND	0.62	--		1
Freon-113	ND	0.20	--	ND	1.5	--		1
trans-1,2-Dichloroethene	ND	0.20	--	ND	0.79	--		1
1,1-Dichloroethane	ND	0.20	--	ND	0.81	--		1
Methyl tert butyl ether	ND	0.20	--	ND	0.72	--		1
2-Butanone	ND	0.50	--	ND	1.5	--		1
cis-1,2-Dichloroethene	ND	0.20	--	ND	0.79	--		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-04

Client ID: AA-040123

Sample Location:

Date Collected: 04/02/23 11:36

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Chloroform	ND	0.20	--	ND	0.98	--		1
Tetrahydrofuran	ND	0.50	--	ND	1.5	--		1
1,2-Dichloroethane	ND	0.20	--	ND	0.81	--		1
n-Hexane	ND	0.20	--	ND	0.70	--		1
1,1,1-Trichloroethane	ND	0.20	--	ND	1.1	--		1
Benzene	ND	0.20	--	ND	0.64	--		1
Carbon tetrachloride	ND	0.20	--	ND	1.3	--		1
Cyclohexane	ND	0.20	--	ND	0.69	--		1
1,2-Dichloropropane	ND	0.20	--	ND	0.92	--		1
Bromodichloromethane	ND	0.20	--	ND	1.3	--		1
1,4-Dioxane	ND	0.20	--	ND	0.72	--		1
Trichloroethene	ND	0.20	--	ND	1.1	--		1
2,2,4-Trimethylpentane	ND	0.20	--	ND	0.93	--		1
Methyl Methacrylate	ND	0.50	--	ND	2.0	--		1
Heptane	ND	0.20	--	ND	0.82	--		1
cis-1,3-Dichloropropene	ND	0.20	--	ND	0.91	--		1
4-Methyl-2-pentanone	ND	0.50	--	ND	2.0	--		1
trans-1,3-Dichloropropene	ND	0.20	--	ND	0.91	--		1
1,1,2-Trichloroethane	ND	0.20	--	ND	1.1	--		1
Toluene	ND	0.20	--	ND	0.75	--		1
Dibromochloromethane	ND	0.20	--	ND	1.7	--		1
1,2-Dibromoethane	ND	0.20	--	ND	1.5	--		1
Tetrachloroethene	ND	0.20	--	ND	1.4	--		1
Chlorobenzene	ND	0.20	--	ND	0.92	--		1
Ethylbenzene	ND	0.20	--	ND	0.87	--		1
p/m-Xylene	ND	0.40	--	ND	1.7	--		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-04

Client ID: AA-040123

Sample Location:

Date Collected: 04/02/23 11:36

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Bromoform	ND	0.20	--	ND	2.1	--		1
Styrene	ND	0.20	--	ND	0.85	--		1
1,1,2,2-Tetrachloroethane	ND	0.20	--	ND	1.4	--		1
o-Xylene	ND	0.20	--	ND	0.87	--		1
2-Chlorotoluene	ND	0.20	--	ND	1.0	--		1
4-Ethyltoluene	ND	0.20	--	ND	0.98	--		1
1,3,5-Trimethylbenzene	ND	0.20	--	ND	0.98	--		1
1,2,4-Trimethylbenzene	ND	0.20	--	ND	0.98	--		1
1,3-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,4-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,2-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,2,4-Trichlorobenzene	ND	0.20	--	ND	1.5	--		1
Hexachlorobutadiene	ND	0.20	--	ND	2.1	--		1

Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds				

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	88		60-140
Bromochloromethane	91		60-140
chlorobenzene-d5	85		60-140



Project Name: WEST ORANGE DPW**Project Number:** IN000380.09**Lab Number:** L2317290**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-05

Client ID: SSSG-4

Sample Location:

Date Collected: 04/01/23 16:56

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Matrix: Soil_Vapor

Analytical Method: 48,TO-15

Analytical Date: 04/15/23 23:36

Analyst: RAY

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.53	0.20	--	2.6	0.99	--		1
Chloromethane	0.25	0.20	--	0.52	0.41	--		1
Freon-114	ND	0.20	--	ND	1.4	--		1
Vinyl chloride	ND	0.20	--	ND	0.51	--		1
1,3-Butadiene	ND	0.20	--	ND	0.44	--		1
Bromomethane	ND	0.20	--	ND	0.78	--		1
Chloroethane	ND	0.20	--	ND	0.53	--		1
Ethanol	15	5.0	--	28	9.4	--		1
Vinyl bromide	ND	0.20	--	ND	0.87	--		1
Acetone	17	1.0	--	40	2.4	--		1
Trichlorofluoromethane	5.9	0.20	--	33	1.1	--		1
Isopropanol	1.1	0.50	--	2.7	1.2	--		1
1,1-Dichloroethene	ND	0.20	--	ND	0.79	--		1
Tertiary butyl Alcohol	ND	0.50	--	ND	1.5	--		1
Methylene chloride	ND	0.50	--	ND	1.7	--		1
3-Chloropropene	ND	0.20	--	ND	0.63	--		1
Carbon disulfide	1.4	0.20	--	4.4	0.62	--		1
Freon-113	ND	0.20	--	ND	1.5	--		1
trans-1,2-Dichloroethene	ND	0.20	--	ND	0.79	--		1
1,1-Dichloroethane	ND	0.20	--	ND	0.81	--		1
Methyl tert butyl ether	ND	0.20	--	ND	0.72	--		1
2-Butanone	1.4	0.50	--	4.1	1.5	--		1
cis-1,2-Dichloroethene	1.0	0.20	--	4.0	0.79	--		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-05

Client ID: SSSG-4

Sample Location:

Date Collected: 04/01/23 16:56

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Chloroform	1.2	0.20	--	5.9	0.98	--		1
Tetrahydrofuran	ND	0.50	--	ND	1.5	--		1
1,2-Dichloroethane	ND	0.20	--	ND	0.81	--		1
n-Hexane	1.6	0.20	--	5.6	0.70	--		1
1,1,1-Trichloroethane	0.29	0.20	--	1.6	1.1	--		1
Benzene	0.77	0.20	--	2.5	0.64	--		1
Carbon tetrachloride	ND	0.20	--	ND	1.3	--		1
Cyclohexane	0.62	0.20	--	2.1	0.69	--		1
1,2-Dichloropropane	ND	0.20	--	ND	0.92	--		1
Bromodichloromethane	ND	0.20	--	ND	1.3	--		1
1,4-Dioxane	ND	0.20	--	ND	0.72	--		1
Trichloroethene	23	0.20	--	120	1.1	--		1
2,2,4-Trimethylpentane	1.4	0.20	--	6.5	0.93	--		1
Methyl Methacrylate	ND	0.50	--	ND	2.0	--		1
Heptane	0.81	0.20	--	3.3	0.82	--		1
cis-1,3-Dichloropropene	ND	0.20	--	ND	0.91	--		1
4-Methyl-2-pentanone	1.8	0.50	--	7.4	2.0	--		1
trans-1,3-Dichloropropene	ND	0.20	--	ND	0.91	--		1
1,1,2-Trichloroethane	ND	0.20	--	ND	1.1	--		1
Toluene	2.9	0.20	--	11	0.75	--		1
Dibromochloromethane	ND	0.20	--	ND	1.7	--		1
1,2-Dibromoethane	ND	0.20	--	ND	1.5	--		1
Tetrachloroethene	14	0.20	--	95	1.4	--		1
Chlorobenzene	ND	0.20	--	ND	0.92	--		1
Ethylbenzene	0.56	0.20	--	2.4	0.87	--		1
p/m-Xylene	2.2	0.40	--	9.6	1.7	--		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-05

Client ID: SSSG-4

Sample Location:

Date Collected: 04/01/23 16:56

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Bromoform	ND	0.20	--	ND	2.1	--		1
Styrene	ND	0.20	--	ND	0.85	--		1
1,1,2,2-Tetrachloroethane	ND	0.20	--	ND	1.4	--		1
o-Xylene	1.0	0.20	--	4.3	0.87	--		1
2-Chlorotoluene	ND	0.20	--	ND	1.0	--		1
4-Ethyltoluene	0.21	0.20	--	1.0	0.98	--		1
1,3,5-Trimethylbenzene	0.37	0.20	--	1.8	0.98	--		1
1,2,4-Trimethylbenzene	1.0	0.20	--	4.9	0.98	--		1
1,3-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,4-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,2-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,2,4-Trichlorobenzene	ND	0.20	--	ND	1.5	--		1
Hexachlorobutadiene	ND	0.20	--	ND	2.1	--		1

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					
unknown benzene	1.29	J	ppbV		1
Pentane, 3-methyl-	1.83	NJ	ppbV		1
Butane	10.4	NJ	ppbV		1
Decane (C10)	1.98	NJ	ppbV		1
unknown alkane	2.38	J	ppbV		1
unknown alkane	4.82	J	ppbV		1
unknown alkane	1.55	J	ppbV		1
Nonane (C9)	1.56	NJ	ppbV		1
Unknown	2.34	J	ppbV		1
Cyclopentane, Methyl-	1.35	NJ	ppbV		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-05

Client ID: SSSG-4

Sample Location:

Date Collected: 04/01/23 16:56

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					
Pentane	3.87	NJ	ppbV		1
Methyl Alcohol	4.52	NJ	ppbV		1
Isobutane	3.66	NJ	ppbV		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	93		60-140
Bromochloromethane	92		60-140
chlorobenzene-d5	89		60-140

Project Name: WEST ORANGE DPW**Project Number:** IN000380.09**Lab Number:** L2317290**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-06

Client ID: SSSG-1

Sample Location:

Date Collected: 04/01/23 14:25

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Matrix: Soil_Vapor

Analytical Method: 48,TO-15

Analytical Date: 04/16/23 00:16

Analyst: RAY

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	3.0	0.20	--	15	0.99	--		1
Chloromethane	ND	0.20	--	ND	0.41	--		1
Freon-114	ND	0.20	--	ND	1.4	--		1
Vinyl chloride	ND	0.20	--	ND	0.51	--		1
1,3-Butadiene	ND	0.20	--	ND	0.44	--		1
Bromomethane	ND	0.20	--	ND	0.78	--		1
Chloroethane	ND	0.20	--	ND	0.53	--		1
Ethanol	ND	5.0	--	ND	9.4	--		1
Vinyl bromide	ND	0.20	--	ND	0.87	--		1
Acetone	1.7	1.0	--	4.0	2.4	--		1
Trichlorofluoromethane	4.6	0.20	--	26	1.1	--		1
Isopropanol	ND	0.50	--	ND	1.2	--		1
1,1-Dichloroethene	ND	0.20	--	ND	0.79	--		1
Tertiary butyl Alcohol	ND	0.50	--	ND	1.5	--		1
Methylene chloride	1.4	0.50	--	4.9	1.7	--		1
3-Chloropropene	ND	0.20	--	ND	0.63	--		1
Carbon disulfide	ND	0.20	--	ND	0.62	--		1
Freon-113	ND	0.20	--	ND	1.5	--		1
trans-1,2-Dichloroethene	ND	0.20	--	ND	0.79	--		1
1,1-Dichloroethane	ND	0.20	--	ND	0.81	--		1
Methyl tert butyl ether	ND	0.20	--	ND	0.72	--		1
2-Butanone	0.65	0.50	--	1.9	1.5	--		1
cis-1,2-Dichloroethene	ND	0.20	--	ND	0.79	--		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-06

Client ID: SSSG-1

Sample Location:

Date Collected: 04/01/23 14:25

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Chloroform	0.43	0.20	--	2.1	0.98	--		1
Tetrahydrofuran	ND	0.50	--	ND	1.5	--		1
1,2-Dichloroethane	ND	0.20	--	ND	0.81	--		1
n-Hexane	ND	0.20	--	ND	0.70	--		1
1,1,1-Trichloroethane	0.52	0.20	--	2.8	1.1	--		1
Benzene	ND	0.20	--	ND	0.64	--		1
Carbon tetrachloride	ND	0.20	--	ND	1.3	--		1
Cyclohexane	0.20	0.20	--	0.69	0.69	--		1
1,2-Dichloropropane	ND	0.20	--	ND	0.92	--		1
Bromodichloromethane	ND	0.20	--	ND	1.3	--		1
1,4-Dioxane	ND	0.20	--	ND	0.72	--		1
Trichloroethene	18	0.20	--	97	1.1	--		1
2,2,4-Trimethylpentane	ND	0.20	--	ND	0.93	--		1
Methyl Methacrylate	ND	0.50	--	ND	2.0	--		1
Heptane	ND	0.20	--	ND	0.82	--		1
cis-1,3-Dichloropropene	ND	0.20	--	ND	0.91	--		1
4-Methyl-2-pentanone	ND	0.50	--	ND	2.0	--		1
trans-1,3-Dichloropropene	ND	0.20	--	ND	0.91	--		1
1,1,2-Trichloroethane	ND	0.20	--	ND	1.1	--		1
Toluene	ND	0.20	--	ND	0.75	--		1
Dibromochloromethane	ND	0.20	--	ND	1.7	--		1
1,2-Dibromoethane	ND	0.20	--	ND	1.5	--		1
Tetrachloroethene	9.9	0.20	--	67	1.4	--		1
Chlorobenzene	ND	0.20	--	ND	0.92	--		1
Ethylbenzene	ND	0.20	--	ND	0.87	--		1
p/m-Xylene	ND	0.40	--	ND	1.7	--		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-06

Client ID: SSSG-1

Sample Location:

Date Collected: 04/01/23 14:25

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Bromoform	ND	0.20	--	ND	2.1	--		1
Styrene	ND	0.20	--	ND	0.85	--		1
1,1,2,2-Tetrachloroethane	ND	0.20	--	ND	1.4	--		1
o-Xylene	ND	0.20	--	ND	0.87	--		1
2-Chlorotoluene	ND	0.20	--	ND	1.0	--		1
4-Ethyltoluene	ND	0.20	--	ND	0.98	--		1
1,3,5-Trimethybenzene	ND	0.20	--	ND	0.98	--		1
1,2,4-Trimethylbenzene	ND	0.20	--	ND	0.98	--		1
1,3-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,4-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,2-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,2,4-Trichlorobenzene	ND	0.20	--	ND	1.5	--		1
Hexachlorobutadiene	ND	0.20	--	ND	2.1	--		1

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					
Methyl Alcohol	2.51	NJ	ppbV		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	99		60-140
Bromochloromethane	97		60-140
chlorobenzene-d5	92		60-140



Project Name: WEST ORANGE DPW**Project Number:** IN000380.09**Lab Number:** L2317290**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-07

Client ID: SSSG-2

Sample Location:

Date Collected: 04/01/23 15:09

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Matrix: Soil_Vapor

Analytical Method: 48,TO-15

Analytical Date: 04/16/23 00:56

Analyst: RAY

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.55	0.20	--	2.7	0.99	--		1
Chloromethane	ND	0.20	--	ND	0.41	--		1
Freon-114	ND	0.20	--	ND	1.4	--		1
Vinyl chloride	ND	0.20	--	ND	0.51	--		1
1,3-Butadiene	ND	0.20	--	ND	0.44	--		1
Bromomethane	ND	0.20	--	ND	0.78	--		1
Chloroethane	ND	0.20	--	ND	0.53	--		1
Ethanol	ND	5.0	--	ND	9.4	--		1
Vinyl bromide	ND	0.20	--	ND	0.87	--		1
Acetone	2.2	1.0	--	5.2	2.4	--		1
Trichlorofluoromethane	0.91	0.20	--	5.1	1.1	--		1
Isopropanol	ND	0.50	--	ND	1.2	--		1
1,1-Dichloroethene	ND	0.20	--	ND	0.79	--		1
Tertiary butyl Alcohol	ND	0.50	--	ND	1.5	--		1
Methylene chloride	ND	0.50	--	ND	1.7	--		1
3-Chloropropene	ND	0.20	--	ND	0.63	--		1
Carbon disulfide	ND	0.20	--	ND	0.62	--		1
Freon-113	ND	0.20	--	ND	1.5	--		1
trans-1,2-Dichloroethene	ND	0.20	--	ND	0.79	--		1
1,1-Dichloroethane	ND	0.20	--	ND	0.81	--		1
Methyl tert butyl ether	ND	0.20	--	ND	0.72	--		1
2-Butanone	ND	0.50	--	ND	1.5	--		1
cis-1,2-Dichloroethene	ND	0.20	--	ND	0.79	--		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-07

Client ID: SSSG-2

Sample Location:

Date Collected: 04/01/23 15:09

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Chloroform	0.37	0.20	--	1.8	0.98	--		1
Tetrahydrofuran	ND	0.50	--	ND	1.5	--		1
1,2-Dichloroethane	ND	0.20	--	ND	0.81	--		1
n-Hexane	ND	0.20	--	ND	0.70	--		1
1,1,1-Trichloroethane	0.78	0.20	--	4.3	1.1	--		1
Benzene	ND	0.20	--	ND	0.64	--		1
Carbon tetrachloride	0.20	0.20	--	1.3	1.3	--		1
Cyclohexane	ND	0.20	--	ND	0.69	--		1
1,2-Dichloropropane	ND	0.20	--	ND	0.92	--		1
Bromodichloromethane	0.34	0.20	--	2.3	1.3	--		1
1,4-Dioxane	ND	0.20	--	ND	0.72	--		1
Trichloroethene	42	0.20	--	230	1.1	--		1
2,2,4-Trimethylpentane	ND	0.20	--	ND	0.93	--		1
Methyl Methacrylate	ND	0.50	--	ND	2.0	--		1
Heptane	ND	0.20	--	ND	0.82	--		1
cis-1,3-Dichloropropene	ND	0.20	--	ND	0.91	--		1
4-Methyl-2-pentanone	ND	0.50	--	ND	2.0	--		1
trans-1,3-Dichloropropene	ND	0.20	--	ND	0.91	--		1
1,1,2-Trichloroethane	ND	0.20	--	ND	1.1	--		1
Toluene	ND	0.20	--	ND	0.75	--		1
Dibromochloromethane	ND	0.20	--	ND	1.7	--		1
1,2-Dibromoethane	ND	0.20	--	ND	1.5	--		1
Tetrachloroethene	11	0.20	--	75	1.4	--		1
Chlorobenzene	ND	0.20	--	ND	0.92	--		1
Ethylbenzene	ND	0.20	--	ND	0.87	--		1
p/m-Xylene	ND	0.40	--	ND	1.7	--		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-07

Client ID: SSSG-2

Sample Location:

Date Collected: 04/01/23 15:09

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Bromoform	ND	0.20	--	ND	2.1	--		1
Styrene	ND	0.20	--	ND	0.85	--		1
1,1,2,2-Tetrachloroethane	ND	0.20	--	ND	1.4	--		1
o-Xylene	ND	0.20	--	ND	0.87	--		1
2-Chlorotoluene	ND	0.20	--	ND	1.0	--		1
4-Ethyltoluene	ND	0.20	--	ND	0.98	--		1
1,3,5-Trimethybenzene	ND	0.20	--	ND	0.98	--		1
1,2,4-Trimethylbenzene	ND	0.20	--	ND	0.98	--		1
1,3-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,4-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,2-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,2,4-Trichlorobenzene	ND	0.20	--	ND	1.5	--		1
Hexachlorobutadiene	ND	0.20	--	ND	2.1	--		1

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					
Acetaldehyde	1.55	NJ	ppbV		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	95		60-140
Bromochloromethane	94		60-140
chlorobenzene-d5	90		60-140



Project Name: WEST ORANGE DPW**Project Number:** IN000380.09**Lab Number:** L2317290**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-08

Client ID: SSSG-3

Sample Location:

Date Collected: 04/01/23 13:50

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Matrix: Soil_Vapor

Analytical Method: 48,TO-15

Analytical Date: 04/16/23 01:37

Analyst: RAY

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.59	0.20	--	2.9	0.99	--		1
Chloromethane	ND	0.20	--	ND	0.41	--		1
Freon-114	ND	0.20	--	ND	1.4	--		1
Vinyl chloride	ND	0.20	--	ND	0.51	--		1
1,3-Butadiene	ND	0.20	--	ND	0.44	--		1
Bromomethane	ND	0.20	--	ND	0.78	--		1
Chloroethane	ND	0.20	--	ND	0.53	--		1
Ethanol	12	5.0	--	23	9.4	--		1
Vinyl bromide	ND	0.20	--	ND	0.87	--		1
Acetone	2.3	1.0	--	5.5	2.4	--		1
Trichlorofluoromethane	11	0.20	--	62	1.1	--		1
Isopropanol	0.67	0.50	--	1.6	1.2	--		1
1,1-Dichloroethene	ND	0.20	--	ND	0.79	--		1
Tertiary butyl Alcohol	ND	0.50	--	ND	1.5	--		1
Methylene chloride	ND	0.50	--	ND	1.7	--		1
3-Chloropropene	ND	0.20	--	ND	0.63	--		1
Carbon disulfide	ND	0.20	--	ND	0.62	--		1
Freon-113	ND	0.20	--	ND	1.5	--		1
trans-1,2-Dichloroethene	ND	0.20	--	ND	0.79	--		1
1,1-Dichloroethane	ND	0.20	--	ND	0.81	--		1
Methyl tert butyl ether	ND	0.20	--	ND	0.72	--		1
2-Butanone	ND	0.50	--	ND	1.5	--		1
cis-1,2-Dichloroethene	0.41	0.20	--	1.6	0.79	--		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-08

Client ID: SSSG-3

Sample Location:

Date Collected: 04/01/23 13:50

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Chloroform	1.9	0.20	--	9.3	0.98	--		1
Tetrahydrofuran	ND	0.50	--	ND	1.5	--		1
1,2-Dichloroethane	ND	0.20	--	ND	0.81	--		1
n-Hexane	ND	0.20	--	ND	0.70	--		1
1,1,1-Trichloroethane	0.91	0.20	--	5.0	1.1	--		1
Benzene	ND	0.20	--	ND	0.64	--		1
Carbon tetrachloride	0.23	0.20	--	1.4	1.3	--		1
Cyclohexane	ND	0.20	--	ND	0.69	--		1
1,2-Dichloropropane	ND	0.20	--	ND	0.92	--		1
Bromodichloromethane	ND	0.20	--	ND	1.3	--		1
1,4-Dioxane	ND	0.20	--	ND	0.72	--		1
Trichloroethene	53	0.20	--	280	1.1	--		1
2,2,4-Trimethylpentane	ND	0.20	--	ND	0.93	--		1
Methyl Methacrylate	ND	0.50	--	ND	2.0	--		1
Heptane	ND	0.20	--	ND	0.82	--		1
cis-1,3-Dichloropropene	ND	0.20	--	ND	0.91	--		1
4-Methyl-2-pentanone	ND	0.50	--	ND	2.0	--		1
trans-1,3-Dichloropropene	ND	0.20	--	ND	0.91	--		1
1,1,2-Trichloroethane	ND	0.20	--	ND	1.1	--		1
Toluene	ND	0.20	--	ND	0.75	--		1
Dibromochloromethane	ND	0.20	--	ND	1.7	--		1
1,2-Dibromoethane	ND	0.20	--	ND	1.5	--		1
Tetrachloroethene	40	0.20	--	270	1.4	--		1
Chlorobenzene	ND	0.20	--	ND	0.92	--		1
Ethylbenzene	ND	0.20	--	ND	0.87	--		1
p/m-Xylene	ND	0.40	--	ND	1.7	--		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-08

Client ID: SSSG-3

Sample Location:

Date Collected: 04/01/23 13:50

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Bromoform	ND	0.20	--	ND	2.1	--		1
Styrene	ND	0.20	--	ND	0.85	--		1
1,1,2,2-Tetrachloroethane	ND	0.20	--	ND	1.4	--		1
o-Xylene	ND	0.20	--	ND	0.87	--		1
2-Chlorotoluene	ND	0.20	--	ND	1.0	--		1
4-Ethyltoluene	ND	0.20	--	ND	0.98	--		1
1,3,5-Trimethybenzene	ND	0.20	--	ND	0.98	--		1
1,2,4-Trimethylbenzene	ND	0.20	--	ND	0.98	--		1
1,3-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,4-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,2-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,2,4-Trichlorobenzene	ND	0.20	--	ND	1.5	--		1
Hexachlorobutadiene	ND	0.20	--	ND	2.1	--		1

Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds				

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	92		60-140
Bromochloromethane	92		60-140
chlorobenzene-d5	89		60-140



Project Name: WEST ORANGE DPW**Project Number:** IN000380.09**Lab Number:** L2317290**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-09

Client ID: SSSG-5

Sample Location:

Date Collected: 04/01/23 10:09

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Matrix: Soil_Vapor

Analytical Method: 48,TO-15

Analytical Date: 04/16/23 02:59

Analyst: RAY

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.49	0.20	--	2.4	0.99	--		1
Chloromethane	ND	0.20	--	ND	0.41	--		1
Freon-114	ND	0.20	--	ND	1.4	--		1
Vinyl chloride	ND	0.20	--	ND	0.51	--		1
1,3-Butadiene	ND	0.20	--	ND	0.44	--		1
Bromomethane	ND	0.20	--	ND	0.78	--		1
Chloroethane	ND	0.20	--	ND	0.53	--		1
Ethanol	15	5.0	--	28	9.4	--		1
Vinyl bromide	ND	0.20	--	ND	0.87	--		1
Acetone	3.7	1.0	--	8.8	2.4	--		1
Trichlorofluoromethane	0.99	0.20	--	5.6	1.1	--		1
Isopropanol	ND	0.50	--	ND	1.2	--		1
1,1-Dichloroethene	ND	0.20	--	ND	0.79	--		1
Tertiary butyl Alcohol	ND	0.50	--	ND	1.5	--		1
Methylene chloride	0.78	0.50	--	2.7	1.7	--		1
3-Chloropropene	ND	0.20	--	ND	0.63	--		1
Carbon disulfide	ND	0.20	--	ND	0.62	--		1
Freon-113	ND	0.20	--	ND	1.5	--		1
trans-1,2-Dichloroethene	ND	0.20	--	ND	0.79	--		1
1,1-Dichloroethane	ND	0.20	--	ND	0.81	--		1
Methyl tert butyl ether	ND	0.20	--	ND	0.72	--		1
2-Butanone	ND	0.50	--	ND	1.5	--		1
cis-1,2-Dichloroethene	2.6	0.20	--	10	0.79	--		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-09

Client ID: SSSG-5

Sample Location:

Date Collected: 04/01/23 10:09

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Chloroform	1.3	0.20	--	6.3	0.98	--		1
Tetrahydrofuran	ND	0.50	--	ND	1.5	--		1
1,2-Dichloroethane	ND	0.20	--	ND	0.81	--		1
n-Hexane	ND	0.20	--	ND	0.70	--		1
1,1,1-Trichloroethane	0.94	0.20	--	5.1	1.1	--		1
Benzene	ND	0.20	--	ND	0.64	--		1
Carbon tetrachloride	0.35	0.20	--	2.2	1.3	--		1
Cyclohexane	ND	0.20	--	ND	0.69	--		1
1,2-Dichloropropane	ND	0.20	--	ND	0.92	--		1
Bromodichloromethane	ND	0.20	--	ND	1.3	--		1
1,4-Dioxane	ND	0.20	--	ND	0.72	--		1
Trichloroethene	64	0.20	--	340	1.1	--		1
2,2,4-Trimethylpentane	ND	0.20	--	ND	0.93	--		1
Methyl Methacrylate	ND	0.50	--	ND	2.0	--		1
Heptane	ND	0.20	--	ND	0.82	--		1
cis-1,3-Dichloropropene	ND	0.20	--	ND	0.91	--		1
4-Methyl-2-pentanone	0.75	0.50	--	3.1	2.0	--		1
trans-1,3-Dichloropropene	ND	0.20	--	ND	0.91	--		1
1,1,2-Trichloroethane	ND	0.20	--	ND	1.1	--		1
Toluene	0.39	0.20	--	1.5	0.75	--		1
Dibromochloromethane	ND	0.20	--	ND	1.7	--		1
1,2-Dibromoethane	ND	0.20	--	ND	1.5	--		1
Tetrachloroethene	17	0.20	--	120	1.4	--		1
Chlorobenzene	ND	0.20	--	ND	0.92	--		1
Ethylbenzene	ND	0.20	--	ND	0.87	--		1
p/m-Xylene	ND	0.40	--	ND	1.7	--		1



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-09

Client ID: SSSG-5

Sample Location:

Date Collected: 04/01/23 10:09

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Bromoform	ND	0.20	--	ND	2.1	--		1
Styrene	ND	0.20	--	ND	0.85	--		1
1,1,2,2-Tetrachloroethane	ND	0.20	--	ND	1.4	--		1
o-Xylene	ND	0.20	--	ND	0.87	--		1
2-Chlorotoluene	ND	0.20	--	ND	1.0	--		1
4-Ethyltoluene	ND	0.20	--	ND	0.98	--		1
1,3,5-Trimethybenzene	ND	0.20	--	ND	0.98	--		1
1,2,4-Trimethylbenzene	0.40	0.20	--	2.0	0.98	--		1
1,3-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,4-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,2-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,2,4-Trichlorobenzene	ND	0.20	--	ND	1.5	--		1
Hexachlorobutadiene	ND	0.20	--	ND	2.1	--		1

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					
Methyl Alcohol	4.48	NJ	ppbV		1
unknown alkane	1.96	J	ppbV		1
unknown alkane	1.33	J	ppbV		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	95		60-140
Bromochloromethane	95		60-140
chlorobenzene-d5	91		60-140



Project Name: WEST ORANGE DPW**Project Number:** IN000380.09**Lab Number:** L2317290**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-10 D

Client ID: SSSG-6

Sample Location:

Date Collected: 04/01/23 11:46

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Matrix: Soil_Vapor

Analytical Method: 48,TO-15

Analytical Date: 04/16/23 03:40

Analyst: RAY

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.51	0.33	--	2.5	1.6	--		1.667
Chloromethane	ND	0.33	--	ND	0.68	--		1.667
Freon-114	ND	0.33	--	ND	2.3	--		1.667
Vinyl chloride	ND	0.33	--	ND	0.84	--		1.667
1,3-Butadiene	ND	0.33	--	ND	0.73	--		1.667
Bromomethane	ND	0.33	--	ND	1.3	--		1.667
Chloroethane	ND	0.33	--	ND	0.87	--		1.667
Ethanol	10	8.3	--	19	16	--		1.667
Vinyl bromide	ND	0.33	--	ND	1.4	--		1.667
Acetone	5.6	1.7	--	13	4.0	--		1.667
Trichlorofluoromethane	1.8	0.33	--	10	1.9	--		1.667
Isopropanol	ND	0.83	--	ND	2.0	--		1.667
1,1-Dichloroethene	ND	0.33	--	ND	1.3	--		1.667
Tertiary butyl Alcohol	ND	0.83	--	ND	2.5	--		1.667
Methylene chloride	ND	0.83	--	ND	2.9	--		1.667
3-Chloropropene	ND	0.33	--	ND	1.0	--		1.667
Carbon disulfide	ND	0.33	--	ND	1.0	--		1.667
Freon-113	ND	0.33	--	ND	2.5	--		1.667
trans-1,2-Dichloroethene	ND	0.33	--	ND	1.3	--		1.667
1,1-Dichloroethane	ND	0.33	--	ND	1.3	--		1.667
Methyl tert butyl ether	ND	0.33	--	ND	1.2	--		1.667
2-Butanone	ND	0.83	--	ND	2.4	--		1.667
cis-1,2-Dichloroethene	0.88	0.33	--	3.5	1.3	--		1.667



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-10 D

Client ID: SSSG-6

Sample Location:

Date Collected: 04/01/23 11:46

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Chloroform	1.5	0.33	--	7.3	1.6	--		1.667
Tetrahydrofuran	ND	0.83	--	ND	2.4	--		1.667
1,2-Dichloroethane	ND	0.33	--	ND	1.3	--		1.667
n-Hexane	ND	0.33	--	ND	1.2	--		1.667
1,1,1-Trichloroethane	2.3	0.33	--	13	1.8	--		1.667
Benzene	ND	0.33	--	ND	1.1	--		1.667
Carbon tetrachloride	ND	0.33	--	ND	2.1	--		1.667
Cyclohexane	ND	0.33	--	ND	1.1	--		1.667
1,2-Dichloropropane	ND	0.33	--	ND	1.5	--		1.667
Bromodichloromethane	ND	0.33	--	ND	2.2	--		1.667
1,4-Dioxane	ND	0.33	--	ND	1.2	--		1.667
Trichloroethene	94	0.33	--	510	1.8	--		1.667
2,2,4-Trimethylpentane	ND	0.33	--	ND	1.5	--		1.667
Methyl Methacrylate	ND	0.83	--	ND	3.4	--		1.667
Heptane	ND	0.33	--	ND	1.4	--		1.667
cis-1,3-Dichloropropene	ND	0.33	--	ND	1.5	--		1.667
4-Methyl-2-pentanone	ND	0.83	--	ND	3.4	--		1.667
trans-1,3-Dichloropropene	ND	0.33	--	ND	1.5	--		1.667
1,1,2-Trichloroethane	ND	0.33	--	ND	1.8	--		1.667
Toluene	ND	0.33	--	ND	1.2	--		1.667
Dibromochloromethane	ND	0.33	--	ND	2.8	--		1.667
1,2-Dibromoethane	ND	0.33	--	ND	2.5	--		1.667
Tetrachloroethene	26	0.33	--	180	2.2	--		1.667
Chlorobenzene	ND	0.33	--	ND	1.5	--		1.667
Ethylbenzene	ND	0.33	--	ND	1.4	--		1.667
p/m-Xylene	ND	0.67	--	ND	2.9	--		1.667



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**SAMPLE RESULTS**

Lab ID: L2317290-10 D

Client ID: SSSG-6

Sample Location:

Date Collected: 04/01/23 11:46

Date Received: 04/03/23

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab								
Bromoform	ND	0.33	--	ND	3.4	--		1.667
Styrene	ND	0.33	--	ND	1.4	--		1.667
1,1,2,2-Tetrachloroethane	ND	0.33	--	ND	2.3	--		1.667
o-Xylene	ND	0.33	--	ND	1.4	--		1.667
2-Chlorotoluene	ND	0.33	--	ND	1.7	--		1.667
4-Ethyltoluene	ND	0.33	--	ND	1.6	--		1.667
1,3,5-Trimethybenzene	ND	0.33	--	ND	1.6	--		1.667
1,2,4-Trimethylbenzene	ND	0.33	--	ND	1.6	--		1.667
1,3-Dichlorobenzene	ND	0.33	--	ND	2.0	--		1.667
1,4-Dichlorobenzene	ND	0.33	--	ND	2.0	--		1.667
1,2-Dichlorobenzene	ND	0.33	--	ND	2.0	--		1.667
1,2,4-Trichlorobenzene	ND	0.33	--	ND	2.4	--		1.667
Hexachlorobutadiene	ND	0.33	--	ND	3.5	--		1.667

Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds				

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	94		60-140
Bromochloromethane	93		60-140
chlorobenzene-d5	89		60-140



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 04/15/23 14:50

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab for sample(s): 01-10 Batch: WG1767198-4								
Dichlorodifluoromethane	ND	0.20	--	ND	0.99	--		1
Chloromethane	ND	0.20	--	ND	0.41	--		1
Freon-114	ND	0.20	--	ND	1.4	--		1
Vinyl chloride	ND	0.20	--	ND	0.51	--		1
1,3-Butadiene	ND	0.20	--	ND	0.44	--		1
Bromomethane	ND	0.20	--	ND	0.78	--		1
Chloroethane	ND	0.20	--	ND	0.53	--		1
Ethanol	ND	5.0	--	ND	9.4	--		1
Vinyl bromide	ND	0.20	--	ND	0.87	--		1
Acetone	ND	1.0	--	ND	2.4	--		1
Trichlorofluoromethane	ND	0.20	--	ND	1.1	--		1
Isopropanol	ND	0.50	--	ND	1.2	--		1
1,1-Dichloroethene	ND	0.20	--	ND	0.79	--		1
Tertiary butyl Alcohol	ND	0.50	--	ND	1.5	--		1
Methylene chloride	ND	0.50	--	ND	1.7	--		1
3-Chloropropene	ND	0.20	--	ND	0.63	--		1
Carbon disulfide	ND	0.20	--	ND	0.62	--		1
Freon-113	ND	0.20	--	ND	1.5	--		1
trans-1,2-Dichloroethene	ND	0.20	--	ND	0.79	--		1
1,1-Dichloroethane	ND	0.20	--	ND	0.81	--		1
Methyl tert butyl ether	ND	0.20	--	ND	0.72	--		1
2-Butanone	ND	0.50	--	ND	1.5	--		1
cis-1,2-Dichloroethene	ND	0.20	--	ND	0.79	--		1
Chloroform	ND	0.20	--	ND	0.98	--		1
Tetrahydrofuran	ND	0.50	--	ND	1.5	--		1



Project Name: WEST ORANGE DPW

Lab Number: L2317290

Project Number: IN000380.09

Report Date: 04/17/23

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 04/15/23 14:50

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab for sample(s): 01-10 Batch: WG1767198-4								
1,2-Dichloroethane	ND	0.20	--	ND	0.81	--		1
n-Hexane	ND	0.20	--	ND	0.70	--		1
1,1,1-Trichloroethane	ND	0.20	--	ND	1.1	--		1
Benzene	ND	0.20	--	ND	0.64	--		1
Carbon tetrachloride	ND	0.20	--	ND	1.3	--		1
Cyclohexane	ND	0.20	--	ND	0.69	--		1
1,2-Dichloropropane	ND	0.20	--	ND	0.92	--		1
Bromodichloromethane	ND	0.20	--	ND	1.3	--		1
1,4-Dioxane	ND	0.20	--	ND	0.72	--		1
Trichloroethene	ND	0.20	--	ND	1.1	--		1
2,2,4-Trimethylpentane	ND	0.20	--	ND	0.93	--		1
Methyl Methacrylate	ND	0.50	--	ND	2.0	--		1
Heptane	ND	0.20	--	ND	0.82	--		1
cis-1,3-Dichloropropene	ND	0.20	--	ND	0.91	--		1
4-Methyl-2-pentanone	ND	0.50	--	ND	2.0	--		1
trans-1,3-Dichloropropene	ND	0.20	--	ND	0.91	--		1
1,1,2-Trichloroethane	ND	0.20	--	ND	1.1	--		1
Toluene	ND	0.20	--	ND	0.75	--		1
Dibromochloromethane	ND	0.20	--	ND	1.7	--		1
1,2-Dibromoethane	ND	0.20	--	ND	1.5	--		1
Tetrachloroethene	ND	0.20	--	ND	1.4	--		1
Chlorobenzene	ND	0.20	--	ND	0.92	--		1
Ethylbenzene	ND	0.20	--	ND	0.87	--		1
p/m-Xylene	ND	0.40	--	ND	1.7	--		1
Bromoform	ND	0.20	--	ND	2.1	--		1



Project Name: WEST ORANGE DPW

Lab Number: L2317290

Project Number: IN000380.09

Report Date: 04/17/23

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15

Analytical Date: 04/15/23 14:50

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
NJ Volatile Organics in Air - Mansfield Lab for sample(s): 01-10 Batch: WG1767198-4								
Styrene	ND	0.20	--	ND	0.85	--		1
1,1,2,2-Tetrachloroethane	ND	0.20	--	ND	1.4	--		1
o-Xylene	ND	0.20	--	ND	0.87	--		1
2-Chlorotoluene	ND	0.20	--	ND	1.0	--		1
4-Ethyltoluene	ND	0.20	--	ND	0.98	--		1
1,3,5-Trimethybenzene	ND	0.20	--	ND	0.98	--		1
1,2,4-Trimethylbenzene	ND	0.20	--	ND	0.98	--		1
1,3-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,4-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,2-Dichlorobenzene	ND	0.20	--	ND	1.2	--		1
1,2,4-Trichlorobenzene	ND	0.20	--	ND	1.5	--		1
Hexachlorobutadiene	ND	0.20	--	ND	2.1	--		1

Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds				

No Tentatively Identified Compounds



Lab Control Sample Analysis

Batch Quality Control

Project Name: WEST ORANGE DPW

Project Number: IN000380.09

Lab Number: L2317290

Report Date: 04/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
NJ Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-10 Batch: WG1767198-3								
Dichlorodifluoromethane	100		-		40-160	-		
Chloromethane	89		-		70-130	-		
Freon-114	92		-		70-130	-		
Vinyl chloride	83		-		70-130	-		
1,3-Butadiene	82		-		70-130	-		
Bromomethane	89		-		70-130	-		
Chloroethane	82		-		70-130	-		
Ethanol	74		-		40-160	-		
Vinyl bromide	78		-		70-130	-		
Acetone	100		-		40-160	-		
Trichlorofluoromethane	97		-		70-130	-		
Isopropanol	92		-		40-160	-		
1,1-Dichloroethene	94		-		70-130	-		
Tertiary butyl Alcohol	95		-		70-130	-		
Methylene chloride	94		-		70-130	-		
3-Chloropropene	93		-		70-130	-		
Carbon disulfide	84		-		70-130	-		
Freon-113	96		-		70-130	-		
trans-1,2-Dichloroethene	86		-		70-130	-		
1,1-Dichloroethane	91		-		70-130	-		
Methyl tert butyl ether	93		-		70-130	-		
2-Butanone	98		-		70-130	-		
cis-1,2-Dichloroethene	92		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: WEST ORANGE DPW

Project Number: IN000380.09

Lab Number: L2317290

Report Date: 04/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
NJ Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-10 Batch: WG1767198-3								
Chloroform	100		-		70-130	-		
Tetrahydrofuran	91		-		70-130	-		
1,2-Dichloroethane	100		-		70-130	-		
n-Hexane	91		-		70-130	-		
1,1,1-Trichloroethane	110		-		70-130	-		
Benzene	92		-		70-130	-		
Carbon tetrachloride	110		-		70-130	-		
Cyclohexane	90		-		70-130	-		
1,2-Dichloropropane	100		-		70-130	-		
Bromodichloromethane	110		-		70-130	-		
1,4-Dioxane	110		-		40-160	-		
Trichloroethene	97		-		70-130	-		
2,2,4-Trimethylpentane	94		-		70-130	-		
Methyl Methacrylate	120		-		40-160	-		
Heptane	100		-		70-130	-		
cis-1,3-Dichloropropene	110		-		70-130	-		
4-Methyl-2-pentanone	110		-		70-130	-		
trans-1,3-Dichloropropene	97		-		70-130	-		
1,1,2-Trichloroethane	100		-		70-130	-		
Toluene	79		-		70-130	-		
Dibromochloromethane	89		-		70-130	-		
1,2-Dibromoethane	86		-		70-130	-		
Tetrachloroethene	80		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: WEST ORANGE DPW

Project Number: IN000380.09

Lab Number: L2317290

Report Date: 04/17/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
NJ Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-10 Batch: WG1767198-3								
Chlorobenzene	82		-		70-130	-		
Ethylbenzene	83		-		70-130	-		
p/m-Xylene	85		-		70-130	-		
Bromoform	89		-		70-130	-		
Styrene	80		-		70-130	-		
1,1,2,2-Tetrachloroethane	91		-		70-130	-		
o-Xylene	89		-		70-130	-		
2-Chlorotoluene	75		-		70-130	-		
4-Ethyltoluene	81		-		70-130	-		
1,3,5-Trimethylbenzene	83		-		70-130	-		
1,2,4-Trimethylbenzene	86		-		70-130	-		
1,3-Dichlorobenzene	80		-		70-130	-		
1,4-Dichlorobenzene	79		-		70-130	-		
1,2-Dichlorobenzene	86		-		70-130	-		
1,2,4-Trichlorobenzene	70		-		40-160	-		
Hexachlorobutadiene	84		-		40-160	-		

Lab Duplicate Analysis

Batch Quality Control

Project Name: WEST ORANGE DPW

Project Number: IN000380.09

Lab Number: L2317290

Report Date: 04/17/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
NJ Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG1767198-5 QC Sample: L2317290-08 Client ID: SSSG-3						
Dichlorodifluoromethane	0.59	0.60	ppbV	2		25
Chloromethane	ND	ND	ppbV	NC		25
Freon-114	ND	ND	ppbV	NC		25
Vinyl chloride	ND	ND	ppbV	NC		25
1,3-Butadiene	ND	ND	ppbV	NC		25
Bromomethane	ND	ND	ppbV	NC		25
Chloroethane	ND	ND	ppbV	NC		25
Ethanol	12	12	ppbV	0		25
Vinyl bromide	ND	ND	ppbV	NC		25
Acetone	2.3	2.3	ppbV	0		25
Trichlorofluoromethane	11	11	ppbV	0		25
Isopropanol	0.67	0.66	ppbV	2		25
1,1-Dichloroethene	ND	ND	ppbV	NC		25
Tertiary butyl Alcohol	ND	ND	ppbV	NC		25
Methylene chloride	ND	ND	ppbV	NC		25
3-Chloropropene	ND	ND	ppbV	NC		25
Carbon disulfide	ND	ND	ppbV	NC		25
Freon-113	ND	ND	ppbV	NC		25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC		25
1,1-Dichloroethane	ND	ND	ppbV	NC		25
Methyl tert butyl ether	ND	ND	ppbV	NC		25

Lab Duplicate Analysis Batch Quality Control

Project Name: WEST ORANGE DPW

Project Number: IN000380.09

Lab Number: L2317290

Report Date: 04/17/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
NJ Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG1767198-5 QC Sample: L2317290-08 Client ID: SSSG-3						
2-Butanone	ND	ND	ppbV	NC		25
cis-1,2-Dichloroethene	0.41	0.40	ppbV	2		25
Chloroform	1.9	2.0	ppbV	5		25
Tetrahydrofuran	ND	ND	ppbV	NC		25
1,2-Dichloroethane	ND	ND	ppbV	NC		25
n-Hexane	ND	ND	ppbV	NC		25
1,1,1-Trichloroethane	0.91	0.91	ppbV	0		25
Benzene	ND	ND	ppbV	NC		25
Carbon tetrachloride	0.23	0.22	ppbV	4		25
Cyclohexane	ND	ND	ppbV	NC		25
1,2-Dichloropropane	ND	ND	ppbV	NC		25
Bromodichloromethane	ND	ND	ppbV	NC		25
1,4-Dioxane	ND	ND	ppbV	NC		25
Trichloroethene	53	52	ppbV	2		25
2,2,4-Trimethylpentane	ND	ND	ppbV	NC		25
Methyl Methacrylate	ND	ND	ppbV	NC		25
Heptane	ND	ND	ppbV	NC		25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC		25
4-Methyl-2-pentanone	ND	ND	ppbV	NC		25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC		25
1,1,2-Trichloroethane	ND	ND	ppbV	NC		25

Lab Duplicate Analysis Batch Quality Control

Project Name: WEST ORANGE DPW

Project Number: IN000380.09

Lab Number: L2317290

Report Date: 04/17/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
NJ Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-10 QC Batch ID: WG1767198-5 QC Sample: L2317290-08 Client ID: SSSG-3						
Toluene	ND	ND	ppbV	NC		25
Dibromochloromethane	ND	ND	ppbV	NC		25
1,2-Dibromoethane	ND	ND	ppbV	NC		25
Tetrachloroethene	40	40	ppbV	0		25
Chlorobenzene	ND	ND	ppbV	NC		25
Ethylbenzene	ND	ND	ppbV	NC		25
p/m-Xylene	ND	ND	ppbV	NC		25
Bromoform	ND	ND	ppbV	NC		25
Styrene	ND	ND	ppbV	NC		25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC		25
o-Xylene	ND	ND	ppbV	NC		25
2-Chlorotoluene	ND	ND	ppbV	NC		25
4-Ethyltoluene	ND	ND	ppbV	NC		25
1,3,5-Trimethylbenzene	ND	ND	ppbV	NC		25
1,2,4-Trimethylbenzene	ND	ND	ppbV	NC		25
1,3-Dichlorobenzene	ND	ND	ppbV	NC		25
1,4-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2-Dichlorobenzene	ND	ND	ppbV	NC		25
1,2,4-Trichlorobenzene	ND	ND	ppbV	NC		25
Hexachlorobutadiene	ND	ND	ppbV	NC		25

Project Name: WEST ORANGE DPW

Serial_No:04172317:05
Lab Number: L2317290

Project Number: IN000380.09

Report Date: 04/17/23

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controller Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L2317290-01	IA-1	02237	Flow 5	03/31/23	418327		-	-	-	Pass	3.0	3.0	0
L2317290-01	IA-1	2889	6.0L Can	03/31/23	418327	L2315985-09	Pass	-29.3	-13.6	-	-	-	-
L2317290-02	IA-2	02275	Flow 5	03/31/23	418327		-	-	-	Pass	3.0	3.5	15
L2317290-02	IA-2	3278	6.0L Can	03/31/23	418327	L2315985-09	Pass	-29.2	-4.9	-	-	-	-
L2317290-03	IA-3	01185	Flow 5	03/31/23	418327		-	-	-	Pass	3.0	2.7	11
L2317290-03	IA-3	2002	6.0L Can	03/31/23	418327	L2315985-09	Pass	-29.5	-9.0	-	-	-	-
L2317290-04	AA-040123	02206	Flow 5	03/31/23	418327		-	-	-	Pass	3.0	3.0	0
L2317290-04	AA-040123	1901	6.0L Can	03/31/23	418327	L2315985-09	Pass	-29.3	-8.5	-	-	-	-
L2317290-05	SSSG-4	0830	Flow 2	03/31/23	418327		-	-	-	Pass	160	166	4
L2317290-05	SSSG-4	3953	6.0L Can	03/31/23	418327	L2315828-07	Pass	-29.3	-5.8	-	-	-	-
L2317290-06	SSSG-1	01544	Flow 2	03/31/23	418327		-	-	-	Pass	160	161	1
L2317290-06	SSSG-1	2967	6.0L Can	03/31/23	418327	L2315985-09	Pass	-29.1	-6.1	-	-	-	-
L2317290-07	SSSG-2	01636	Flow 1	03/31/23	418327		-	-	-	Pass	160	164	2
L2317290-07	SSSG-2	3478	6.0L Can	03/31/23	418327	L2315828-07	Pass	-29.4	-6.9	-	-	-	-
L2317290-08	SSSG-3	0678	Flow 1	03/31/23	418327		-	-	-	Pass	160	141	13

Project Name: WEST ORANGE DPW

Serial_No:04172317:05
Lab Number: L2317290

Project Number: IN000380.09

Report Date: 04/17/23

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controller Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L2317290-08	SSSG-3	3341	6.0L Can	03/31/23	418327	L2315828-07	Pass	-29.3	-6.7	-	-	-	-
L2317290-09	SSSG-5	01740	Flow 1	03/31/23	418327		-	-	-	Pass	160	166	4
L2317290-09	SSSG-5	1789	6.0L Can	03/31/23	418327	L2315985-09	Pass	-29.2	-4.1	-	-	-	-
L2317290-10	SSSG-6	0646	Flow 1	03/31/23	418327		-	-	-	Pass	160	163	2
L2317290-10	SSSG-6	2660	6.0L Can	03/31/23	418327	L2315828-07	Pass	-29.4	-5.6	-	-	-	-

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L2315828
Report Date: 04/17/23

Air Canister Certification Results

Lab ID: L2315828-07
Client ID: CAN 2326 SHELF 34
Sample Location:

Date Collected: 03/27/23 09:00
Date Received: 03/27/23
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Analytical Method: 48,TO-15
Analytical Date: 03/27/23 22:04
Analyst: RAY

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L2315828
Report Date: 04/17/23

Air Canister Certification Results

Lab ID: L2315828-07
Client ID: CAN 2326 SHELF 34
Sample Location:

Date Collected: 03/27/23 09:00
Date Received: 03/27/23
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L2315828
Report Date: 04/17/23

Air Canister Certification Results

Lab ID: L2315828-07
Client ID: CAN 2326 SHELF 34
Sample Location:

Date Collected: 03/27/23 09:00
Date Received: 03/27/23
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L2315828
Report Date: 04/17/23

Air Canister Certification Results

Lab ID: L2315828-07
Client ID: CAN 2326 SHELF 34
Sample Location:

Date Collected: 03/27/23 09:00
Date Received: 03/27/23
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1



Project Name: BATCH CANISTER CERTIFICATION**Lab Number:** L2315828**Project Number:** CANISTER QC BAT**Report Date:** 04/17/23**Air Canister Certification Results**

Lab ID: L2315828-07

Date Collected: 03/27/23 09:00

Client ID: CAN 2326 SHELF 34

Date Received: 03/27/23

Sample Location:

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								

Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds				

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	92		60-140
Bromochloromethane	100		60-140
chlorobenzene-d5	96		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L2315828
Report Date: 04/17/23

Air Canister Certification Results

Lab ID: L2315828-07
Client ID: CAN 2326 SHELF 34
Sample Location:

Date Collected: 03/27/23 09:00
Date Received: 03/27/23
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Analytical Method: 48,TO-15-SIM
Analytical Date: 03/27/23 22:04
Analyst: RAY

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acrolein	ND	0.050	--	ND	0.115	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L2315828
Report Date: 04/17/23

Air Canister Certification Results

Lab ID: L2315828-07
Client ID: CAN 2326 SHELF 34
Sample Location:

Date Collected: 03/27/23 09:00
Date Received: 03/27/23
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.100	--	ND	0.377	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.100	--	ND	0.518	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1



Project Name: BATCH CANISTER CERTIFICATION**Lab Number:** L2315828**Project Number:** CANISTER QC BAT**Report Date:** 04/17/23**Air Canister Certification Results**

Lab ID: L2315828-07

Date Collected: 03/27/23 09:00

Client ID: CAN 2326 SHELF 34

Date Received: 03/27/23

Sample Location:

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	94		60-140
bromochloromethane	100		60-140
chlorobenzene-d5	98		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L2315985
Report Date: 04/17/23

Air Canister Certification Results

Lab ID: L2315985-09
Client ID: CAN 2927 SHELF 40
Sample Location:

Date Collected: 03/28/23 09:00
Date Received: 03/28/23
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Analytical Method: 48,TO-15
Analytical Date: 03/29/23 00:28
Analyst: TJS

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L2315985
Report Date: 04/17/23

Air Canister Certification Results

Lab ID: L2315985-09
Client ID: CAN 2927 SHELF 40
Sample Location:

Date Collected: 03/28/23 09:00
Date Received: 03/28/23
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L2315985
Report Date: 04/17/23

Air Canister Certification Results

Lab ID: L2315985-09
Client ID: CAN 2927 SHELF 40
Sample Location:

Date Collected: 03/28/23 09:00
Date Received: 03/28/23
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L2315985
Report Date: 04/17/23

Air Canister Certification Results

Lab ID: L2315985-09
Client ID: CAN 2927 SHELF 40
Sample Location:

Date Collected: 03/28/23 09:00
Date Received: 03/28/23
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1



Project Name: BATCH CANISTER CERTIFICATION**Lab Number:** L2315985**Project Number:** CANISTER QC BAT**Report Date:** 04/17/23**Air Canister Certification Results**

Lab ID: L2315985-09

Date Collected: 03/28/23 09:00

Client ID: CAN 2927 SHELF 40

Date Received: 03/28/23

Sample Location:

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air - Mansfield Lab								

Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds				

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	89		60-140
Bromochloromethane	95		60-140
chlorobenzene-d5	87		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L2315985
Report Date: 04/17/23

Air Canister Certification Results

Lab ID: L2315985-09
Client ID: CAN 2927 SHELF 40
Sample Location:

Date Collected: 03/28/23 09:00
Date Received: 03/28/23
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Analytical Method: 48,TO-15-SIM
Analytical Date: 03/29/23 00:28
Analyst: TJS

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acrolein	ND	0.050	--	ND	0.115	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1



Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L2315985
Report Date: 04/17/23

Air Canister Certification Results

Lab ID: L2315985-09
Client ID: CAN 2927 SHELF 40
Sample Location:

Date Collected: 03/28/23 09:00
Date Received: 03/28/23
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.100	--	ND	0.377	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.100	--	ND	0.518	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1



Project Name: BATCH CANISTER CERTIFICATION**Lab Number:** L2315985**Project Number:** CANISTER QC BAT**Report Date:** 04/17/23**Air Canister Certification Results**

Lab ID: L2315985-09

Date Collected: 03/28/23 09:00

Client ID: CAN 2927 SHELF 40

Date Received: 03/28/23

Sample Location:

Field Prep: Not Specified

Sample Depth:

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	92		60-140
bromochloromethane	98		60-140
chlorobenzene-d5	92		60-140



Project Name: WEST ORANGE DPW**Lab Number:** L2317290**Project Number:** IN000380.09**Report Date:** 04/17/23**Sample Receipt and Container Information**

Were project specific reporting limits specified?

NO

Cooler Information**Cooler** **Custody Seal**

N/A Present/Intact

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2317290-01A	Canister - 6 Liter	N/A	NA			Y	Absent		NJ-TO15(30)
L2317290-02A	Canister - 6 Liter	N/A	NA			Y	Absent		NJ-TO15(30)
L2317290-03A	Canister - 6 Liter	N/A	NA			Y	Absent		NJ-TO15(30)
L2317290-04A	Canister - 6 Liter	N/A	NA			Y	Absent		NJ-TO15(30)
L2317290-05A	Canister - 6 Liter	N/A	NA			Y	Absent		NJ-TO15(30)
L2317290-06A	Canister - 6 Liter	N/A	NA			Y	Absent		NJ-TO15(30)
L2317290-07A	Canister - 6 Liter	N/A	NA			Y	Absent		NJ-TO15(30)
L2317290-08A	Canister - 6 Liter	N/A	NA			Y	Absent		NJ-TO15(30)
L2317290-09A	Canister - 6 Liter	N/A	NA			Y	Absent		NJ-TO15(30)
L2317290-10A	Canister - 6 Liter	N/A	NA			Y	Absent		NJ-TO15(30)

Project Name: WEST ORANGE DPW
Project Number: IN000380.09

Lab Number: L2317290
Report Date: 04/17/23

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report



Project Name: WEST ORANGE DPW
Project Number: IN000380.09

Lab Number: L2317290
Report Date: 04/17/23

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F** - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

Report Format: Data Usability Report



Project Name: WEST ORANGE DPW
Project Number: IN000380.09

Lab Number: L2317290
Report Date: 04/17/23

Data Qualifiers

- ND** - Not detected at the reporting limit (RL) for the sample.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- V** - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z** - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: WEST ORANGE DPW
Project Number: IN000380.09

Lab Number: L2317290
Report Date: 04/17/23

REFERENCES

- 48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Alpha Analytical, Inc.Facility: **Company-wide**Department: **Quality Assurance**Title: **Certificate/Approval Program Summary**ID No.: **17873**

Revision 19

Published Date: 4/2/2021 1:14:23 PM

Page 1 of 1

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility**EPA 624/624.1:** m/p-xylene, o-xylene, Naphthalene**EPA 625/625.1:** alpha-Terpineol**EPA 8260C/8260D:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.**EPA 8270D/8270E:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.**Mansfield Facility****SM 2540D:** TSS**EPA 8082A:** NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:**Drinking Water****EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,****EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B****EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.****Non-Potable Water****SM4500H-B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:**Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E,****SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate.**EPA 624.1:** Volatile Halocarbons & Aromatics,**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II,

Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.****Mansfield Facility:****Drinking Water****EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg.****EPA 522, EPA 537.1.****Non-Potable Water****EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.**EPA 245.1 Hg.****SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



Alpha Analytical

320 Forbes Blvd
Mansfield, MA 02048-1806
Tel: 508-822-9300
Fax: 508-822-3288

AIR Chain-of-Custody - NJ

Date Rec'd in Lab 4/4/23

ALPHA Job# L2317290

Client Contact Information		Project Information		NJ DEP Information										1 of 2 COCs					
Company: CME Associates		Project Name: West Orange DPW		Bureau:		Division:		Contract No:		Analysis		Matrix							
Address: 3759 US Hwy 1 South, Ste 100		Project No: INO 00380.09		Report Information - Data Deliverables:															
City/State/Zip: Portsmouth, NH 02875		Site/Location:		☐ FAX: ☒ ADEx ☐ Criteria Checker: ☒ EMail (standard pdf report)															
Phone: 732-957-2101		Project Manager: MANA/BABA		Billing Information															
FAX:		Analysis Turn-Around Time		☒ Same as Client Info PO #:															
Email: mbaba@cmeusa1.com		Standard (Specify) X																	
Site Contact: M. BABA		Rush (Specify)																	
Site Contact Phone:																			
ALPHA LAB ID (Lab Use Only)	Sample Identification	Sample Date(s)	Time Start (24 hr clock)	Time Stop (24 hr clock)	Canister Pressure in Field (Hg) (Start)	Canister Pressure in Field (Hg) (Stop)	Interior Temp. (F) (Start)	Interior Temp. (F) (Stop)	Outgoing Canister Pressure (Hg) (Note 1)	Incoming Canister Pressure (Hg) (Note 2)	Flow Reg. ID	Can ID	Can Size (L)	Flow Controller Readout (ml/min) (Note 1)	Batch Cert ID (Note 1)	TO-15	EPA 3C	Indoor / Ambient Air	Soil Gas
17290-01	IA-1	4/1/23	1215	1211	-29.26	-13.49	60°	68°	-29.3		02237	2689	60L	3.0	4231598509	X		X	
02	IA-2	4/1/23	1224	0836	-29.34	-4.75	60°	68°	-29.2		02275	3278	60L	3.0	4231598509	X		X	
03	IA-3	4/1/23	1209	1158	-29.39	-8.83	60°	68°	-29.5		01185	2002	60L	3.0	4231598509	X		X	
04	AA-040123	4/1/23	1148	1130	-29.53	-9.23	60°	68°	-29.3		02206	1901	60L	3.0	4231598509	X		X	
05	SSSG-4	4/1/23	11026	11056	-28.89	-5.61	58°	58°	-29.3		0830	3783	60L	160	4231598507	X		X	

Custody Seals:	Temperature (Fahrenheit)				Individual Preparing Canister/Containers and Laboratory Canister Certification
	Ambient	Maximum	Minimum		
Outgoing Seal No: 3699 (refer to crate seal)	Start	62	75	50	Name: Monica Machado
Incoming Seal No: 4904 (if applicable)	Stop	52	57	39	Signature: Monica M.

	Pressure (inches of Hg)				Footnotes:
	Ambient	Maximum	Minimum		
Start	29.32	29.71	29.09		(1) Refer to equipment tags for these readings.
Stop	29.76	29.85	29.29		(2) Readings provided in data deliverable package.

Special Instructions/QC Requirements & Comments:

Canisters Shipped by:	Date/Time:	Canisters Received by:	Date/Time:	Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until all ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms. See reverse side.
Samples Relinquished by:	Date/Time:	Received by:	Date/Time:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	



Alpha Analytical

320 Forbes Blvd
Mansfield, MA 02048-1806
Tel: 508-822-9300
Fax: 508-822-3288

AIR Chain-of-Custody - NJ

Serial_No:04172317:05

Date Rec'd in Lab 4/14/23

ALPHA Job# L2317290

Client Contact Information

Company: CME Associates
Address: 375 US Hwy I South, Ste 100
City/State/Zip: Monmouth Junction, NJ 08852
Phone: 732-957-2101
FAX:
Email: m.baba@cmeusa1.com
Site Contact: M. Baba
Site Contact Phone:

Project Information

Project Name: West Orange DPW
Project No: INO 0056009
Site/Location:
Project Manager: MANAL BABA

Analysis Turn-Around Time

Standard (Specify) X
Rush (Specify)

NJ DEP Information

Bureau: Division: Contract No:

Report Information - Data Deliverables:

☐ FAX:
☒ ADEx ☐ Criteria Checker:
☒ EMail (standard pdf report)

Billing Information

☒ Same as Client Info PO #:

2 of 2 COCs

Analysis

Matrix

ALPHA LAB ID (Lab Use Only)	Sample Identification	Sample Date(s)	Time Start (24 hr clock)	Time Stop (24 hr clock)	Canister Pressure in Field (Hg) (Start)	Canister Pressure in Field (Hg) (Stop)	Interior Temp. (F) (Start)	Interior Temp. (F) (Stop)	Outgoing Canister Pressure (Hg) (Note 1)	Incoming Canister Pressure (Hg) (Note 2)	Flow Reg. ID	Can ID	Can Size (L)	Flow Controller Readout (ml/min) (Note 1)	Batch Cert ID (Note 1)	TO-15	EPA 3C	Indoor /Ambient Air	Soil Gas
06	SSSG-1	4/14/23	1359	1426	-28.84	-6.27	69	69	-29.1		01544	2867	6L	160	42315765-09	X			X
07	SSSG-2	4/14/23	1441	1509	-29.46	-6.57	69	69	-29.4		01636	3478	6L	160	42315766-09	X			X
08	SSSG-3	4/14/23	1316	1350	-29.65	-6.71	68	68	-29.3		01678	3341	6L	160	42315767-09	X			X
09	SSSG-5	4/14/23	0940	1009	-29.99	-4.85	44	45	-29.2		01740	1789	6L	160	42315765-09	X			X
10	SSSG-6	4/14/23	1116	1146	-29.54	-5.52	58	58	-29.4		01646	2160	6L	160	42315768-09	X			X

Custody Seals:

Outgoing Seal No: 3700
(refer to crate seal)
Incoming Seal No: 4903
(if applicable)

Temperature (Fahrenheit)

	Ambient	Maximum	Minimum
Start	44	56	43
Stop	54	56	43

Individual Preparing Canister/Containers and Laboratory Canister Certification

Name: Monica Machado
Signature: Monica M.

Pressure (inches of Hg)

	Ambient	Maximum	Minimum
Start	29.7	29.8	29.7
Stop	29.8	29.8	29.7

Footnotes:

- (1) Refer to equipment tags for these readings.
- (2) Readings provided in data deliverable package.

Special Instructions/QC Requirements & Comments:

Canisters Shipped by:

Date/Time:

Canisters Received by:

Date/Time:

Samples Relinquished by:

Date/Time:

Received by:

Date/Time:

Relinquished by:

Date/Time:

Received by:

Date/Time:

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until all ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms. See reverse side.