

12 April 2024

Ms. Stephanie Fitzgerald Division of Environmental Remediation New York State Department of Environmental Conservation 615 Erie Boulevard West Syracuse, New York 13204

RE: DRAFT Summary of Soil, Soil Gas, Soil Vapor Intrusion, and Surface Water Results Contract/Work Assignment No: D009806-31 Owego Heat Treat, Apalachin, New York Site No. 754011

Dear Ms. Fitzgerald:

This letter provides a summary of analytical results for soil, soil gas, surface water, and soil vapor intrusion (SVI) investigation samples collected at the Owego Heat Treat Site (No. 754011) in the Town of Apalachin, Tioga County, New York (**Figure 1**). EA Engineering, P.C. and its affiliate EA Science and Technology (EA) completed field sampling activities as described in the Remedial System Optimization Investigation Letter Work Plan.¹

SUMMARY OF FIELD INVESTIGATION

EA performed soil and surface water sampling activities in April 2023. EA collected a surface water sample from a pond on-site and soil samples from two intervals at 10 locations and from three intervals at 20 locations, to evaluate the extent of the contamination at the request of New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH) (**Figure 2**). Soil samples were submitted to Pace Analytical and analyzed for Target Compound List (TCL) volatile organic compounds (VOCs) via U.S. Environmental Protection Agency (EPA) Method 8260D, TCL semi-volatile organic compounds (SVOCs) via EPA Method 8270E, Target Analyte List (TAL) Metals via EPA Methods 6010D and 7471B (mercury), pesticides and polychlorinated biphenyls (PCBs) via EPA Methods 8081B and 8082A, respectively. The surface water sample was submitted to Pace Analytical and analyzed for TCL VOCs via EPA Method 8260D.

EA performed soil gas sampling activities in June and July 2023 and SVI sampling activities in July 2023. At the request of NYSDEC and NYSDOH, EA collected soil gas samples from six soil gas points as well as SVI samples from within an on-site residential property (**Figure 3**). Six soil gas samples and 3 SVI samples (one sub-slab soil vapor, one indoor air, and one outdoor air) were collected and submitted to Pace Analytical for VOC analysis via EPA Method TO-15. Daily inspection reports are provided in **Attachment A**. Field forms are included in **Attachment B**.

¹EA. 2023. Remedial System Optimization Investigation Letter Work Plan. 7 March.



SUMMARY OF RESULTS

Summaries of validated analytical results from the April, June and July 2023 sampling compared to appropriate screening criteria are provided in **Tables 1 through 3**. The laboratory reports are provided as **Attachment C**. Data was validated by Environmental Data Services, Ltd. Data Usability Summary Reports are be provided as **Attachment D**.

Soil

Five VOCs were detected in the soil: acetone, ethylbenzene, methyl acetate, 2-butanone, and toluene. Acetone was the only VOC to exceed NYSDEC Soil Cleanup Objectives (SCOs) for Unrestricted Use in 58 of 80 soil samples. There were no VOC exceedances of NYSDEC SCOs for Residential Use. Pesticides and SVOCs showed no exceedances of SCOs, while PCBs were not detected in any sample.

Several TAL metals exceeded the SCOs for Unrestricted Use in the soil samples. The concentrations of mercury, nickel, and zinc exceeded the Unrestricted Use SCOs in at least one sample. Mercury exceeded the Unrestricted Use SCO of 0.18 milligram per kilogram (mg/kg) in six samples ranging in concentration from 0.20 mg/kg to 0.65 mg/kg. These exceedances appeared in samples collected from SS2-08 from the 0 to 2 inches (in.) below ground surface (bgs) and 2 to 12 in. bgs intervals; SS2-09 from the 0 to 2 inches (in.) below ground surface (bgs) and 2 to 12 in. bgs intervals; and SS2-10 from the 0 to 2 in. bgs and 2 to 12 in. bgs intervals; and SS2-10 from the 0 to 2 in. bgs intervals. Nickel exceeded the Unrestricted Use SCO of 30 mg/kg in SS3-08 in the 0 to 2 in. bgs interval with a concentration of 53 mg/kg. The concentration of zinc exceeded the Unrestricted Use SCO of 109 mg/kg in the samples collected from SS3-19 from 0 to 2 in. bgs and 2 to 12 in. bgs with concentrations of 120 mg/kg and 110 mg/kg, respectively. Iron exceeded the CP-51 soil cleanup guidance value for Residential Use of 2,000 mg/kg in every sample. Concentrations ranged from 2,600 mg/kg at SS3-19 in the 2 to 12 in. bgs interval. All soil results for analytes that were detected are summarized in **Table 1** and displayed in **Figures 4 and 5**.

Surface Water

The one surface water sample (SW-01) only showed a detection of acetone at a concentration of 4.4 micrograms per liter, which is below NYSDEC ambient water quality standards (**Table 1**).

Soil Gas

No soil gas samples contained detections of trichloroethylene (TCE), *cis*-1,2-dichloroethene (DCE), or vinyl chloride. Tetrachloroethylene (PCE) was detected in five soil gas samples. PCE concentrations ranged from 0.72 micrograms per cubic meter ($\mu g/m^3$) at SGP-01 to 4.6 $\mu g/m^3$ at SGP-06; PCE was not detected in SGP-03. There is no screening criteria for soil gas; however as a reference, the NYSDOH ambient air quality guideline for PCE is 30 $\mu g/m^3$. All soil gas results are summarized in **Table 2** and displayed on **Figure 6**.



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Soil Vapor Intrusion

Of the SVI samples, the sub-slab vapor and indoor air samples were non-detect for TCE, *cis*-1,2-DCE, or vinyl chloride. PCE was detected at a concentration of 25 μ g/m³ in the sub-slab vapor sample and at a concentration of 0.50 μ g/m³ in the indoor air sample. In the outdoor air sample, TCE was detected at a concentration of 0.19 μ g/m³, while PCE, *cis*-1,2-DCE, and vinyl chloride were not detected. VOCs detected in the SVI samples were below NYSDOH Standards, Criteria, and Guidance values. SVI sampling results are summarized in **Table 3** and displayed on **Figure 6**.

Sincerely yours,

EA SCIENCE AND TECHNOLOGY

Megan Miller

Megan Miller Project Manager

EA ENGINEERING, P.C.

onall

Donald F. Conan, P.E., P.G. Program Manager

Figures

- 1 Site Location
- 2 Soil and Surface Water Sampling Point Locations
- 3 Soil Gas and Soil Vapor Intrusion Sampling Point Locations
- 4 Two-Interval Soil Results
- 5 Three-Interval Soil Results
- 6 Surface Water, Soil Gas, and Soil Vapor Intrusion Results

Tables

- 1 Soil and Surface Water Results Summary (April 2023)
- 2 Soil Gas Sampling Results Summary (June/July 2023)
- 3 Soil Vapor Intrusion Results Summary (July 2023)



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Attachments

- A Daily Field Reports
- B Field Forms
- C Laboratory Results
- D Data Usability Summary Reports

Figures

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Owego Heat Treat (Site No. 754011) Apalachin, New York

Map Date: 10/11/2023 Projection: NAD 1983 State Plane New York Central

Approximate Property Boundary

Surface Water Sample

0

X

100 200



Soil Gas Points Approximate Property Boundary Owego Heat Treat (Site No. 754011) Apalachin, New York

200

100

Feet

0

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Map Date: 10/11/2023 Projection: NAD 1983 State Plane New York Central









Legend

Soil Sample Locations - 2 Intervals



' Surface Water Sample



Approximate Property Boundary

Notes: (1) NYSDEC Commissioner's I

 (1) NYSDEC Commissioner's Policy (CP) - 51 Soil Cleanup Guidance applied for iron; no Part 375 SCO
 bgs = below ground surface

in. = inches

mg/kg = milligram(s) per kilogram NYSDEC = New York State Department of Environmental Conservation SCO = Soil Cleanup Objective

Map Date: 4/12/2024 Projection: NAD 1983 State Plane New York Central

Figure 4

Two-Interval Soil Results

Apalachin, NewYork

Ovego Heat Treat (Site No. 754011)





Legend

Soil Sample Locations - 2 Intervals



- Soil Sample Locations 3 Intervals
- Surface Water Sample

Approximate Property Boundary

Notes:

(1) NYSDEC Commissioner's Policy (CP) - 51 Soil Cleanup Guidance applied for iron; no Part 375 SCO bgs = below ground surface

in. = inches

mg/kg = milligram(s) per kilogram

Map Date: 4/12/2024 Projection: NAD 1983 State Plane New York Central NYSDEC = New York State Department of Environmental Conservation SCO = Soil Cleanup Objective

Three-Interval Soil Results

Apalachin, NewYork

Oveqo Heat Treat (Site No. 754011)

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Map Date: 9/29/2023 Projection: NAD 1983 State Plane New York Central

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Tables

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	Residential Use	Unrestricted	Sample Date	4/18/2023	4/18/2023	4/18/2023	4/18/2023	4/18/2023	4/18/2023	4/18/2023	4/18/2023	4/18/2023	4/18/2023	4/18/2023	4/18/2023	4/18/2023
Analyte	Soil	Use Soil	Unit							Soil						
SVOCs (SW8270E)		1														
Benzaldehyde	NSL	NSL	mg/kg	0.48 J	0.057 J	0.52 J	0.048 J	0.37 J	0.079 J	< 0.041 UJ	0.53 J	< 0.037 UJ	0.29 J	< 0.042 UJ	0.093 J	< 0.036 UJ
Benzo(A)Anthracene	1	1	mg/kg	< 0.1 U	< 0.083 U	< 0.08 U	< 0.07 U	< 0.088 U	< 0.079 U	< 0.078 U	< 0.082 U	< 0.069 U	< 0.089 UJ	< 0.08 U	< 0.073 U	< 0.068 U
Benzo(A)Pyrene	1	1	mg/kg	< 0.093 U	< 0.076 U	< 0.074 U	< 0.065 U	< 0.081 U	< 0.072 U	< 0.071 U	< 0.075 U	< 0.063 U	< 0.082 UJ	< 0.073 U	< 0.067 U	< 0.062 U
Benzo(B)Fluoranthene	1	1	mg/kg	<0.094 U	< 0.078 U	< 0.075 U	< 0.066 U	< 0.082 U	< 0.073 U	< 0.073 U	< 0.076 U	< 0.064 U	< 0.083 UJ	< 0.075 U	< 0.068 U	< 0.063 U
Benzo(G,H,I)Perylene	100	100	mg/kg	< 0.12 U	< 0.096 U	< 0.093 U	< 0.082 U	< 0.1 U	< 0.091 U	< 0.09 U	< 0.094 U	< 0.08 U	< 0.1 UJ	< 0.093 U	< 0.084 U	< 0.078 U
Benzo(K)Fluoranthene	1	0.8	mg/kg	< 0.1 U	< 0.083 U	< 0.08 U	< 0.07 U	< 0.088 U	< 0.079 U	< 0.078 U	< 0.081 U	< 0.069 U	< 0.089 UJ	< 0.08 U	< 0.073 U	< 0.068 U
Caprolactam	NSL	NSL	mg/kg	< 0.08 U	< 0.066 U	< 0.063 U	< 0.056 U	< 0.07 U	< 0.062 U	< 0.061 U	< 0.064 U	< 0.054 U	< 0.07 UJ	< 0.063 U	< 0.057 U	< 0.053 U
Chrysene	1	1	mg/kg	< 0.1 U	< 0.083 U	< 0.08 U	< 0.07 U	< 0.088 U	< 0.079 U	< 0.078 U	< 0.082 U	< 0.069 U	< 0.089 UJ	< 0.08 U	< 0.073 U	< 0.068 U
Fluoranthene	100	100	mg/kg	< 0.1 U	< 0.082 U	< 0.079 U	< 0.07 U	< 0.087 U	< 0.078 U	< 0.077 U	< 0.081 U	< 0.068 U	< 0.088 UJ	< 0.079 U	< 0.072 U	< 0.067 U
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	mg/kg	< 0.12 U	< 0.1 U	< 0.097 U	< 0.085 U	< 0.11 U	< 0.095 U	< 0.094 U	< 0.099 U	< 0.084 U	< 0.11 UJ	< 0.097 U	< 0.088 U	< 0.082 U
Phenanthrene	100	100	mg/kg	< 0.11 U	< 0.09 U	< 0.087 U	< 0.076 U	< 0.095 U	< 0.085 U	< 0.084 U	< 0.088 U	< 0.075 U	< 0.096 UJ	< 0.087 U	< 0.079 U	< 0.073 U
Pyrene	100	100	mg/kg	< 0.11 U	< 0.092 U	< 0.089 U	< 0.078 U	< 0.098 U	< 0.087 U	< 0.086 U	< 0.09 U	< 0.077 U	< 0.099 UJ	< 0.089 U	< 0.081 U	< 0.075 U
VOCs (SW8260D)																
Acetone	100	0.05	mg/kg	0.47	0.5	0.31	0.25	1.1	0.21	0.21 J	1	0.41	< 0.16 U	0.62	0.12	0.12
Ethylbenzene	30	1	mg/kg	< 0.00082 U	< 0.00056 U	0.0022	< 0.00049 U	< 0.00068 U	< 0.00052 U	< 0.00051 U	< 0.00065 U	< 0.00054 U	< 0.00066 U	< 0.00052 U	< 0.00056 U	< 0.00045 U
Methyl Acetate	NSL	NSL	mg/kg	< 0.002 U	< 0.0014 U	< 0.0015 U	< 0.0012 U	< 0.0016 U	< 0.0012 U	< 0.0012 UJ	< 0.0016 U	< 0.0013 U	< 0.0016 U	< 0.0013 U	< 0.0013 U	< 0.0011 U
Methyl Ethyl Ketone (2-Butanone)	100	100	mg/kg	0.023 J	0.0072 J	0.019 J	0.0099 J	< 0.0072 U	< 0.0054 U	0.0066 J	0.017 J	0.0061 J	0.023 J	0.0071 J	0.0086 J	0.0062 J
Toluene	100	0.7	mg/kg	0.0012 J	< 0.00064 U	0.0027	< 0.00055 U	< 0.00078 U	< 0.00059 U	< 0.00058 U	< 0.00073 U	< 0.00061 U	< 0.00075 U	< 0.00059 U	< 0.00064 U	< 0.00051 U
Metals (SW6010C/SW7471B)																
Aluminum	NSL	NSL	mg/kg	18000	19000	12000	12000	17000	18000	18000	11000	11000	16000	17000	10000	10000
Antimony	NSL	NSL	mg/kg	< 0.56 U	< 0.46 U	< 0.44 U	< 0.39 U	< 0.47 U	< 0.44 U	< 0.43 U	< 0.45 U	< 0.37 U	< 0.5 U	< 0.44 U	< 0.39 U	< 0.36 U
Arsenic	16	13	mg/kg	5.6	6.6	8.3	7.2	6.9	8.3	4.1 J	7	5.9	5.3	5.4	6.2	7
Barium	350	350	mg/kg	93	93	61	52	120 J	100	110	57	42	130	120	43	36
Beryllium	14	7.2	mg/kg	0.64	0.64	0.49	0.44	0.63	0.66	0.69	0.46	0.4	0.61	0.59	0.4	0.38
Cadmium	2.5	2.5	mg/kg	< 0.18 U	< 0.15 U	< 0.14 U	< 0.12 U	< 0.15 U	< 0.14 U	< 0.14 U	< 0.14 U	< 0.12 U	< 0.16 U	< 0.14 U	< 0.13 U	< 0.12 U
Calcium	NSL	NSL.	mg/kg	1600	910	3200	12000	1400	970	1000	3600	13000	1400	740	1700	6000
Chromium, Total	NSL	NSL.	mg/kg	19	20	14	13	18	19	19	13	12	16	17	12	11
Cobalt	NSL	30	mg/kg	8.2	7.8	8.9	8.6	10	11	11 J+	8.6	7.9	8.3	9.5	7.8	7.8
Copper	270	50	mg/kg	16	13	25	25	13	15	13	24	28	11	11	21	23
Iron	2 000 (1)	NSI	mg/kg	23000	28000	21000	28000	28000	32000	24000	20000	25000	20000	27000	18000	24000
Lead	400	63	mg/kg	19	20	16	14	18	17	17	14	9.8	15	13	12	11
Magnesium	NSL.	NSI	mø/kø	3800	3500	3500	4000	3500	3700	3500	3500	4800	3000	3000	3000	3400
Manganese	2000	1600	mg/kg	290	240	540	540	890	900	890	460	430	890	840	390	420
Nickel	140	30	mg/kg	23	22	21	20	21	22	24	20	19	19	20	18	18
Potassium	NSL.	NSI	me/ke	1400	960	1300	900	1200	1000	930	1200	850	1000	830	990	820
Silver	36	2	mg/kg	0.87	0.88	0.55	0.51	0.85	0.93 J	< 0.14 UI	0.52	0.48	0.76	0.81	0.47	0.46
Sodium	NSL.	NSI	mg/kg	< 48 U	< 40 U	< 38 U	37.1	< 41 U	< 38 U	< 37 U	< 39 U	32.1	< 43 U	< 38 U	< 34 U	< 31 U
Thallium	NSL.	NSI	mg/kg	< 0.94 U	< 0.78 U	< 0.75 U	< 0.65 U	<08U	3.4	< 0.73 U	< 0.76 U	< 0.63 U	< 0.83 U	< 0.73 U	< 0.66 U	< 0.61 U
Vanadium	100	NSI	mg/kg	24	25	18	17	22	24	22	16	15	20	21	15	15
Zinc	2200	109	me/ke	72	66	58	53	69	68	72	55	47	63	59	46	43
Mercury	0.81	0.18	mg/kg	< 0.017 U	0.031 I	< 0.014 U	< 0.013 U	0.032 I	0.033	0.023 1	0.020.1	0.017 I	0.029 I	0.023.1	0.018 I	0.020 I
Posticidos (SW8081B)	0.01	0.10	115/115	0.017 0	0.0515	0.014 0	0.015 0	0.0525	0.055	0.0255	0.020 5	0.0175	0.0275	0.0200	0.0105	0.0205
Chlordana	0.91	0.004	maka	< 0.13 U	< 0.011 H	< 0.21 U	< 0.19 U	< 0.057 U	< 0.000 II	< 0.01 U	< 0.11 U	< 0.045 U	< 0.012 U	< 0.011 U	< 0.0095 U	< 0.0088 U
Dieldrin	0.039	0.094	ma/kg	< 0.0067 U	< 0.00055 U	< 0.011 U	< 0.0095 U	< 0.0029 U	< 0.0005 U	< 0.00053 U	< 0.0055 U	< 0.0023 U	< 0.0059 U	< 0.00054 U	< 0.00048 U	< 0.00044 U
Hantachlor Enovida	0.037	0.005	mg/Kg	< 0.0065 U	< 0.00053/U	<0.01 U	< 0.0093 U	< 0.0029 U	< 0.0005 U	< 0.00053 U	< 0.0055 U	< 0.0023 U	< 0.00057 U	< 0.00054 U	< 0.00047 U	< 0.00044 U
P P DDD	2.6	0.077	mg/Kg	< 0.0000 U	< 0.00054 U	< 0.010	< 0.0055 U	< 0.0020 U	< 0.00057 U	< 0.00052 U	< 0.0059 11	< 0.0022 U	< 0.00057 U	< 0.00055 U	< 0.00047 U	< 0.00045 U
P P DDE	1.0	NSL	mg/kg	< 0.0072 U	< 0.0000 U	< 0.011 U	< 0.01 U	< 0.0051 U	< 0.00057 U	< 0.00037 U	< 0.0059 U	< 0.0025 U	< 0.00004 U	< 0.00038 U	< 0.00032 U	< 0.00048 U
P P DDT	1.0	NSL	mg/kg	< 0.0001 U	< 0.00051 U	< 0.0097 U	< 0.0087 U	< 0.0020 U	< 0.00055 U	< 0.00048 U	< 0.005 U	< 0.0021 U	< 0.00054 U	< 0.00049 U	< 0.00044 U	< 0.0004 U
F,F-DD1	1./	INSL	mg/Kg	< 0.0008 U	< 0.00050 U	< 0.011 U	< 0.0097 U	< 0.0029 U	< 0.00055 U	< 0.00054 U	< 0.0050 U	< 0.0023 U	< 0.0006 U	< 0.00055 U	< 0.00049 U	< 0.00045 U
Percent Solids (SM2540G)	NCI	NCI	e/	(0.(ao a	76.4	07	(0.5	77.0	70	26.1	00.7	(0.7	26.6		00.5
Sonds, Percent	NSL	INSL	70	00.6	13.1	/6.4	8/	09.5	//.8	/8	/5.1	ðð./	08./	/0.0	84	90.5
INORES:																

Notes: Analytical results were validated by Environmental Data Services, Ltd. Unrestricted Use Soil = NYSDEC Part 375 Soil Cleanup Objectives, Unrestricted Use Soil Residential Soil = NYSDEC Part 375 Soil Cleanup Objectives, Residential Use Soil (1) NYSDEC Commissioner's Powly (CP)-51 Soil Cleanup Objective applied for inor. no Part 375 Soil Cleanup Objective (2) Oaly one surface water sample was taken and results were compared to NYSDEC ambient water quality standards. There were no exceedances of these standards.

µg/L = microgram(s) per liter

J = Concentration is estimated

J+ = Concentration is estimated; biased high

J- = Concentration is estimated; biased low

mg/kg = milligram(s) per kilogram

NA = Not analyzed

ND = Not detected

NSL = No Screening Level

NYSDEC = New York State Department of Environmental Conservation

U = Analyte not detected Shaded values exceed NYSDEC soil cleanup objectives for unrestricted use.

Bold values exceed NYSDEC soil cleanup objectives for residential use.

							ace mater re		(pin 202				1	1	1	
			Location ID	SS2-07	SS2-07	SS2-08	SS2-08	SS2-08	SS2-09	SS2-09	SS2-10	SS2-10	SS3-01	SS3-01	SS3-01	SS3-02
			Sample Name	754011-SS2-7-	754011-SS2-7-	754011-SS2-8-	754011-SS2-8-	754011-FD-03	754011-SS2-9-	754011-SS2-9-	754011-SS2-10	754011-SS2-10-(2	754011-883-1-	754011-SS3-1-	754011-SS3-1-	754011-SS3-2-
			Parent Sample	(0-2)	(2-12)	(0-2)	(2-12)	754011-882-8-	(0-2)	(2-12)	(0-2)	12)	(0-2)	(2-12)	(12-24)	(0-2)
			I ut the Shimple					(2-12)								
			Sample Date	4/18/2023	4/18/2023	4/19/2023	4/19/2023	4/19/2023	4/18/2023	4/17/2023	4/18/2023	4/18/2023	4/19/2023	4/19/2023	4/19/2023	4/19/2023
	Residential Use	Unrestricted	Sample Date	4 10 2025	410/2025	419/2025	4,19,2025	4.19.2025	4102025	4/1//2023	4/10/2025	4/10/2025	4/17/2025	419/2025	419/2025	4/17/2025
Analyte	Soil	Use Soil	Unit							Soil						
SVOCs (SW8270E)		l.														
Benzaldehyde	NSL	NSL	mg/kg	0.85 J	0.10 J	< 0.044 U	< 0.04 U	< 0.04 UJ	0.048 J	< 0.039 UJ	0.046 J	< 0.041 UJ	< 0.042 UJ	< 0.041 UJ	< 0.04 UJ	< 0.044 U
Benzo(A)Anthracene	1	1	mg/kg	< 0.08 U	< 0.073 U	< 0.082 U	0.12 J	0.089 J	0.096 J	0.16 J	0.11 J	0.096 J	< 0.08 U	< 0.076 U	< 0.076 U	< 0.082 U
Benzo(A)Pyrene	1	1	mg/kg	< 0.074 U	< 0.067 U	0.079 J	0.12 J	0.090 J	0.10 J	0.15 J	0.11 J	0.10 J	< 0.073 U	< 0.07 U	< 0.07 U	< 0.075 U
Benzo(B)Fluoranthene	1	1	mg/kg	< 0.075 U	< 0.068 U	0.093 J	0.13 J	0.10 J	0.12 J	0.19 J	0.14 J	0.13 J	< 0.074 U	< 0.071 U	< 0.071 U	< 0.077 U
Benzo(G,H,I)Perylene	100	100	mg/kg	< 0.093 U	< 0.084 U	< 0.096 U	< 0.086 U	< 0.088 U	< 0.098 U	0.12 J	< 0.098 U	< 0.089 U	< 0.092 U	< 0.089 U	< 0.088 U	< 0.095 U
Benzo(K)Fluoranthene	1	0.8	mg/kg	< 0.08 U	< 0.073 U	< 0.082 U	< 0.075 U	< 0.076 U	< 0.085 U	0.075 J	< 0.085 U	< 0.077 U	< 0.08 U	< 0.076 U	< 0.076 U	< 0.082 U
Caprolactam	NSL	NSL	mg/kg	< 0.063 U	< 0.057 U	< 0.065 U	< 0.059 U	< 0.06 U	< 0.067 U	< 0.058 U	< 0.067 U	< 0.06 U	< 0.063 U	< 0.06 U	< 0.06 U	< 0.065 U
Chrysene	1	1	mg/kg	< 0.081 U	< 0.073 U	0.086 J	0.12 J	0.095 J	0.10 J	0.17 J	0.12 J	0.11 J	< 0.08 U	< 0.076 U	< 0.076 U	< 0.082 U
Fluoranthene	100	100	mg/kg	< 0.08 U	< 0.072 U	0.11 J	0.16 J	0.13 J	0.17 J	0.27	0.21 J	0.16 J	< 0.079 U	< 0.075 U	< 0.075 U	< 0.081 U
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	mg/kg	< 0.098 U	< 0.088 U	< 0.1 U	< 0.09 U	< 0.092 U	< 0.1 U	0.11 J	< 0.1 U	< 0.093 U	< 0.097 U	< 0.093 U	< 0.092 U	< 0.099 U
Phenanthrene	100	100	mg/kg	< 0.087 U	< 0.079 U	< 0.089 U	< 0.081 U	< 0.082 U	< 0.092 U	0.13 J	0.097 J	< 0.083 U	< 0.086 U	< 0.083 U	< 0.082 U	< 0.089 U
Pyrene	100	100	mg/kg	< 0.089 U	< 0.081 U	0.17 J	0.25	0.15 J	0.15 J	0.25	0.17 J	0.15 J	< 0.088 U	< 0.085 U	< 0.084 U	< 0.091 U
VOCs (SW8260D)																
Acetone	100	0.05	mg/kg	0.37	< 0.11 U	< 0.0086 UJ	0.40 J	0.55 J	1.0 J	0.24 J	0.14 J	0.57 J	0.096 J	0.096 J	0.33 J	0.29 J
Ethylbenzene	30	1	mg/kg	< 0.00067 U	< 0.00053 U	< 0.00057 U	< 0.00049 U	< 0.0005 U	< 0.00062 U	< 0.0005 U	< 0.00061 U	< 0.00051 U	< 0.00055 U	< 0.0005 U	< 0.00049 U	< 0.00062 U
Methyl Acetate	NSL	NSL	mg/kg	< 0.0016 U	< 0.0013 U	< 0.0014 U	< 0.0012 U	< 0.0012 U	< 0.0015 UJ	< 0.0012 UJ	< 0.0015 UJ	< 0.0012 UJ	< 0.0013 U	< 0.0012 U	< 0.0012 U	< 0.0015 U
Methyl Ethyl Ketone (2-Butanone)	100	100	mg/kg	0.027 J	< 0.0055 U	< 0.0059 U	< 0.0051 U	< 0.0052 U	0.015 J	< 0.0053 U	0.015 J	0.0069 J	< 0.0058 U	< 0.0052 U	< 0.0051 U	< 0.0065 U
Toluene	100	0.7	mg/kg	< 0.00076 U	< 0.0006 U	< 0.00064 U	< 0.00055 U	< 0.00057 U	< 0.00071 U	< 0.00057 U	0.00069 J	< 0.00058 U	< 0.00062 U	< 0.00057 U	< 0.00055 U	< 0.0007 U
Metals (SW6010C/SW7471B)																
Aluminum	NSL	NSL	mg/kg	9200	9100	13000	13000	13000	13000	12000	12000	11000	13000	13000	12000	15000
Antimony	NSL	NSL	mg/kg	< 0.44 U	< 0.4 U			< 0.42 U	< 0.47 U	< 0.4 U	< 0.48 U	< 0.42 U	< 0.45 U	< 0.42 U	< 0.41 U	
Arsenic	16	13	mg/kg	4.5	4.5	4.5	4.2	5.2	3.8 J	3.4 J	3.2 J	3.2 J	3.0 J	2.7 J	3.0 J	4.8
Barium	350	350	mg/kg	42	39	95	100	100	92	87	88	83	100	120	76	86
Beryllium	14	7.2	mg/kg	0.35	0.35	0.57	0.56	0.53	0.55	0.51	0.51	0.51	0.54	0.57	0.41	0.6
Cadmium	2.5	2.5	mg/kg	< 0.14 U	< 0.13 U	0.47	0.55	0.6	0.45	0.6	0.45 J	0.52	< 0.14 U	< 0.13 U	< 0.13 U	< 0.14 U
Calcium	NSL	NSL	mg/kg	4900	18000	1700	1400	1400	1800	1300	2100	1300	1500	960	520	1800
Chromium, Total	NSL	NSL	mg/kg	10	10	42	76	76	47	65	37	54	16	15	14	20
Cobalt	NSL	30	mg/kg	6.3	6.3	10	9.6	9.6	10 J+	9.3 J+	10 J+	9.2 J+	8.9	8.8	8.7	11
Copper	270	50	mg/kg	21	21	21	21	20	21	21	19	20	13	10	12	18
Iron	2.000 (1)	NSL	mg/kg	16000	16000	26000	24000	21000	21000	19000	21000	19000	19000	18000	18000	27000
Lead	400	63	mg/kg	10	8.2	21	24	24	22	23	20	22	30	12	9.1	19
Magnesium	NSL	NSL	mg/kg	3200	5900	3500	3200	3200	3300	3000	3200	3000	3000	2800	2900	3700
Manganese	2000	1600	mg/kg	450	450	720	650	660	700	620	690	600	710	800	510	740
Nickel	140	30	mg/kg	15	15	24	23	23	25	23	25	23	21	22	23	24
Potassium	NSL	NSL.	mg/kg	980	930	1000	810	790	930	790	1100	870	1100	1000	730	1200
Silver	36	2	mg/kg	0.38 J	0.4	< 0.15 U	0.6	1.1	< 0.15 U	0.28 J	< 0.16 U	< 0.13 U	< 0.15 U	< 0.14 U	< 0.13 U	< 0.15 U
Sodium	NSL	NSL.	mg/kg	< 38 U	38 J	< 39 U	< 37 U	< 36 U	< 40 U	< 35 U	< 41 U	< 36 U	< 39 U	< 36 U	< 35 U	< 39 U
Thallium	NSL	NSI	mg/kg	< 0.74 U	< 0.68 U	< 0.76 U	< 0.71 U	< 0.71 U	< 0.79 U	< 0.68 U	< 0.81 U	< 0.7 U	< 0.76 U	< 0.71 U	< 0.69 U	< 0.76 U
Vanadium	100	NSI	mg/kg	13	13	16	16	17	15	14	14	14	15	15	14	18
Zinc	2200	109	mg/kg	45	40	86	86	87	88	84	81	80	75	73	59	81
Mercury	0.81	0.18	mg/kg	0.016 I	0.020 I	0.2	0.65	0.61	0.26	0.43	0.23	0.37	0.023 I	0.024 I	0.016 I	0.046
Posticidae (SW8081B)	0.01	0.18	116/115	0.0103	0.020 5	0.2	0.05	0.01	0.20	0.45	0.25	0.07	0.025 5	0.02475	0.0101	0.040
Chlordana	0.91	0.004	maka	< 0.21 U	< 0.0094 H	< 0.0089 II	< 0.0085 U	< 0.01 U	<0.011 U	< 0.01 U	< 0.11 U	< 0.01 U	< 0.011 U	< 0.01 U	< 0.0098 U	< 0.0093 U
Dieldrin	0.039	0.005	mg/kg	< 0.011 U	< 0.00047 U	< 0.00049 U	< 0.00047 U	< 0.001 U	< 0.00057 U	< 0.0005 U	< 0.0056 U	< 0.00052 U	< 0.0011 0	< 0.00052 II	< 0.0005 U	< 0.00052 U
Hantachlor Enovida	0.039	0.005	mg/Kg	< 0.011	< 0.00047 U	< 0.00049 U	< 0.00047 U	< 0.00031 U	< 0.00056 U	< 0.0003 U	< 0.0055 U	< 0.00051 U	< 0.00053 U	< 0.00052 U	< 0.0003 U	< 0.00052 0
	2.42	0.077	mg/kg	< 0.01 U	< 0.00040 U	< 0.00057 U	< 0.00054 U	< 0.00049 U	< 0.00050 U	< 0.00049 U	< 0.0055 U	< 0.00051 U	< 0.00055 U	< 0.0005 U	< 0.00048 U	< 0.0000 U
P.P. DDE	2.0	INSL	mg/kg	< 0.0011 U	< 0.00051 U	< 0.00056 U	< 0.00054 U	< 0.00055 U	< 0.00062 U	< 0.00054 0	< 0.0061 U	< 0.00056 U	< 0.00058 U	< 0.00056 U	< 0.00054 U	< 0.00059 U
P.F.DDE	1.8	NSL	mg/kg	< 0.0096 U	< 0.00043 U	0.0019 J	< 0.00046 U	< 0.00046 U	0.0035 J	0.0024 J	< 0.0051 U	< 0.00047 U	0.0045 J	0.0072	< 0.00045 U	< 0.0005 U
P.F. DD1	1./	NSL	mg/kg	< 0.011 U	< 0.00048 U	< 0.00054 U	0.00113	< 0.00052 U	0.00113	0.0019.J	< 0.0057 U	0.0020 J	0.00293	0.0045 J	< 0.00051 U	< 0.00000 U
Percent Solids (SM2540G)	NG	NCI	0/	7(1	84.0	72.2	01.1	00.7	72.1	81.0	71.0	70.4	76.2	70.0	80	72.0
Solids, Percent	NSL	NSL	%	/6.1	84.2	13.3	81.1	80.7	72.1	81.9	/1.8	/9.6	/6.3	/9.9	80	/3.8

					Table 1.	Soli and Sur	lace water K	esuits Summa	ry (April 2023	2)						
			Location ID	SS3-02	SS3-02	SS3-03	SS3-03	SS3-03	SS3-04	SS3-04	SS3-04	SS3-05	SS3-05	SS3-05	SS3-06	SS3-06
			Sample Name	754011-SS3-2-	754011-SS3-2-	754011-SS3-3-	754011-SS3-3-	754011-SS3-3-	754011-SS3-4-	754011-SS3-4-	754011-SS3-4-	754011-SS3-5-(0-	754011-SS3-5-	754011-SS3-5-	754011-SS3-6-	754011-SS3-6-
			Ponent Comple	(2-12)	(12-24)	(0-2)	(2-12)	(12-24)	(0-2)	(2-12)	(12-24)	2)	(2-12)	(12-24)	(0-2)	(2-12)
			r arent Sample													
	Residential Use	Unrestricted	Sample Date	4/19/2023	4/19/2023	4/19/2023	4/19/2023	4/19/2023	4/19/2023	4/19/2023	4/19/2023	4/19/2023	4/19/2023	4/19/2023	4/20/2023	4/20/2023
Analyte	Soil	Use Soil	Unit							Soil						
SVOCs (SW8270F)																
Benzaldebyde	NSI	NSI	ma/ka	< 0.04 U	< 0.04 U	< 0.044 U	< 0.041 U	< 0.039 U	< 0.045 U	< 0.041 U	< 0.04 U	0.050 I	< 0.04 UI	< 0.041 UI	0.21 I	< 0.041 U
Benzo(A)Anthracene	1	1	mg/kg	< 0.076 U	< 0.076 U	< 0.083 U	< 0.077 U	< 0.073 U	< 0.084 U	< 0.078 U	< 0.075 U	< 0.082 U	< 0.074 U	< 0.077 U	< 0.089 U	< 0.077 U
Banzo(A)Durana	1	1	mg/kg	< 0.07 U	< 0.07 U	< 0.005 C	< 0.071 U	< 0.067 U	< 0.007 U	< 0.070 U	< 0.075 U	< 0.002 C	< 0.068 U	< 0.071 U	< 0.081 U	< 0.07 U
Banzo(R)Ebusanthana	1	1	mg/kg	< 0.071 U	< 0.071 U	< 0.070 U	< 0.071 U	< 0.067 U	< 0.077 U	< 0.071 U	< 0.003 U	< 0.070 U	< 0.060 U	< 0.072 U	< 0.082 U	< 0.07 U
Benzo(B)Fluorannene	1	1	mg/kg	< 0.071 U	< 0.071 U	< 0.078 U	< 0.072 U	< 0.008 U	< 0.078 U	< 0.073 U	< 0.07 U	< 0.077 U	< 0.009 U	< 0.072 U	< 0.083 U	< 0.072 U
Belizo(G,H,I)Felylelle	100	100	mg/kg	< 0.086 U	< 0.088 U	< 0.090 U	< 0.089 U	< 0.083 U	< 0.097 U	< 0.09 U	< 0.080 U	< 0.090 U	< 0.080 U	< 0.039 U	< 0.1 U	< 0.089 U
Benzo(K)Fluorantnene	1	0.8	mg/kg	< 0.076 U	< 0.076 U	< 0.083 U	< 0.077 U	< 0.073 U	< 0.084 U	< 0.078 U	< 0.074 U	< 0.082 U	< 0.074 U	< 0.077 U	< 0.089 U	< 0.077 U
Caprolactam	NSL	NSL	mg/kg	< 0.06 U	< 0.06 U	< 0.066 U	< 0.061 U	< 0.058 U	< 0.066 U	< 0.061 U	< 0.059 U	< 0.065 U	< 0.059 U	< 0.061 U	< 0.07 U	< 0.061 U
Chrysene	1	1	mg/kg	< 0.076 U	< 0.076 U	< 0.083 U	< 0.077 U	< 0.073 U	< 0.084 U	< 0.078 U	< 0.075 U	< 0.083 U	< 0.074 U	< 0.077 U	< 0.089 U	< 0.077 U
Fluoranthene	100	100	mg/kg	< 0.075 U	< 0.075 U	< 0.082 U	< 0.076 U	< 0.072 U	< 0.083 U	< 0.077 U	< 0.074 U	< 0.081 U	< 0.074 U	< 0.076 U	< 0.087 U	< 0.076 U
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	mg/kg	< 0.092 U	< 0.092 U	< 0.1 U	< 0.093 U	< 0.089 U	< 0.1 U	< 0.094 U	< 0.09 U	< 0.1 U	< 0.09 U	< 0.093 U	< 0.11 U	< 0.093 U
Phenanthrene	100	100	mg/kg	< 0.082 U	< 0.082 U	< 0.09 U	< 0.083 U	< 0.079 U	< 0.091 U	< 0.084 U	< 0.081 U	< 0.089 U	< 0.081 U	< 0.084 U	< 0.096 U	< 0.083 U
Pyrene	100	100	mg/kg	< 0.084 U	< 0.084 U	< 0.092 U	< 0.085 U	< 0.081 U	< 0.093 U	< 0.086 U	< 0.083 U	< 0.091 U	< 0.082 U	< 0.085 U	< 0.098 U	< 0.085 U
VOCs (SW8260D)																
Acetone	100	0.05	mg/kg	< 0.0077 UJ	0.35 J	< 0.0093 UJ	0.64 J	0.41 J	< 0.011 UJ	< 0.01 UJ	< 0.0094 UJ	0.23 J	0.12 J	0.14 J	0.16 J	0.45 J
Ethylbenzene	30	1	mg/kg	< 0.00051 U	< 0.00052 U	< 0.00061 U	< 0.00049 U	< 0.0005 U	< 0.00071 U	< 0.00068 U	< 0.00062 U	< 0.00059 U	< 0.00046 U	< 0.00054 U	< 0.00066 U	< 0.0005 U
Methyl Acetate	NSL	NSL.	mg/kg	< 0.0012 U	< 0.0012 U	< 0.0015 U	< 0.0012 U	< 0.0012 U	< 0.0017 U	< 0.0016 U	< 0.0015 U	< 0.0014 U	< 0.0011 U	< 0.0013 U	< 0.0016 U	< 0.0012 U
Methyl Ethyl Ketone (2-Butanone)	100	100	mg/kg	< 0.0053 U	< 0.0054 U	< 0.0064 U	0.0087 J	< 0.0052 U	< 0.0075 U	< 0.0071 U	< 0.0065 U	0.0067 J	< 0.0048 U	< 0.0056 U	0.016 J	< 0.0053 U
Toluene	100	0.7	mg/kg	< 0.00057 U	< 0.00059 U	< 0.00069 U	< 0.00055 U	< 0.00056 U	< 0.00081 U	< 0.00077 U	< 0.00071 U	< 0.00066 U	< 0.00052 U	< 0.00061 U	< 0.00075 U	< 0.00057 U
Motole (SW6010C/SW7471B)		0.7														
Aluminum	NEL	NEL	maka	14000	14000	16000	17000	18000	16000	16000	17000	15000	17000	15000	16000	19000
Antimony	NSL	NSL	mg/kg	< 0.41 UI	14000	10000	17000	10000	10000	10000	17000	< 0.45 U	< 0.42 U	< 0.42 U	< 0.5 U	< 0.42 U
Amania	16	12	mg/kg	4.2	201	261	2.2.1	4.2	451	47	5.1	2.2.1	< 0.42 C	2.0.1	10	< 0.42 0
Aisenic	10	13	mg/kg	4.3	3.93	3.0 J	3.3 J	4.3	4.53	4.7	3.1	3.3 J	4.7	3.0 3	4.7	0.0
Banum	350	350	mg/kg	11	//	130	140	84	110	120	91	130	55	130	110	6/
Beryllium	14	7.2	mg/kg	0.57	0.58	0.69	0.71	0.57	0.66	0.67	0.65	0.64	0.59	0.66	0.62	0.65
Cadmium	2.5	2.5	mg/kg	< 0.13 U	< 0.14 U	< 0.15 U	< 0.14 U	< 0.13 U	< 0.15 U	< 0.14 U	< 0.13 U	< 0.14 U	< 0.13 U	< 0.13 U	< 0.16 U	< 0.14 U
Calcium	NSL	NSL	mg/kg	1000	1100	1400	920	770	1100	1000	800	1600	550	930	2200	630
Chromium, Total	NSL	NSL	mg/kg	21	19	18	18	20	19	18	19	17	19	17	19	21
Cobalt	NSL	30	mg/kg	10	11	11	10	12	11	11	12	9.5	11	9.5	11	12
Copper	270	50	mg/kg	17	15	15	14	16	16	15	16	13	15	12	16	19
Iron	2,000 (1)	NSL	mg/kg	26000	25000	25000	25000	30000	27000	26000	29000	20000	24000	19000	24000	26000
Lead	400	63	mg/kg	20	14	16	15	13	21	19	14	16	12	15	17	15
Magnesium	NSL	NSL	mg/kg	3400	3500	3500	3500	4000	3500	3500	3900	3200	3800	3000	3800	4000
Manganese	2000	1600	mg/kg	640	600	1100	1100	560	820	950	760	1100	590	1000	820	600
Nickel	140	30	mg/kg	23	24	23	24	26	23	23	25	21	26	21	24	26
Potassium	NSL	NSL.	mg/kg	810	870	1400	1200	1100	1200	940	1000	1500	1000	1100	1600	1200
Silver	36	2	me/ke	< 0.13 U	< 0.14 U	< 0.15 U	< 0.14 U	< 0.13 U	< 0.15 U	< 0.14 U	< 0.13 U	< 0.15 U	< 0.14 U	< 0.14 U	< 0.16 U	< 0.14 U
Sodium	NSI	NSI	mg/kg	< 36 U	< 37 II	< 40 U	< 37 U	< 36 U	< 40 U	< 38 U	< 35 U	< 39 II	< 36 U	< 36 U	< 43 U	< 36 U
Thallium	NSI	NSL	mg/kg	<071	< 0.72 U	< 0.78 []	< 0.73 U	< 0.7 U	< 0.79 U	< 0.73 U	< 0.69 U	< 0.76 U	< 0.7 U	< 0.71 U	< 0.84 U	< 0.71 U
Vanadium	100	NSL	mg/kg	17	18	18	10	20.70	10	10	21	17	20	17	20	23
Zino	2200	INSL	mg/kg	17	71	10	17	22	17	19	74	17	20	17	20	23
Zinc	2200	109	mg/kg	/8	/1	81	82	80	80	/9	/4	82	/6	/8	91	//
Mercury	0.81	0.18	mg/kg	0.076	0.052	0.039	0.04	0.017 J	0.05	0.073	0.035	0.044	0.025 J	0.056	0.04	0.045
Pesticides (SW8081B)		1														
Chlordane	0.91	0.094	mg/kg	< 0.0088 U	< 0.0087 U	< 0.0092 U	< 0.0082 U	< 0.0082 U	< 0.0092 U	< 0.009 U	< 0.0084 U	< 0.011 U	< 0.01 U	< 0.01 U	< 0.011 U	< 0.01 U
Dieldrin	0.039	0.005	mg/kg	< 0.00048 U	< 0.00048 U	< 0.00051 U	< 0.00045 U	< 0.00045 U	< 0.00051 U	< 0.0005 U	< 0.00046 U	< 0.00056 U	< 0.00051 U	< 0.00052 U	< 0.00057 U	< 0.00051 U
Heptachlor Epoxide	0.42	0.077	mg/kg	< 0.00056 U	< 0.00055 U	< 0.00059 U	< 0.00052 U	< 0.00052 U	< 0.00059 U	< 0.00057 U	< 0.00054 U	< 0.00054 U	< 0.00049 U	< 0.00051 U	< 0.00056 U	< 0.0005 U
P,P'-DDD	2.6	NSL	mg/kg	< 0.00055 U	< 0.00055 U	< 0.00058 U	< 0.00052 U	< 0.00052 U	< 0.00058 U	< 0.00057 U	< 0.00053 U	< 0.0006 U	< 0.00055 U	< 0.00056 U	< 0.00062 U	< 0.00056 U
P,P'-DDE	1.8	NSL	mg/kg	< 0.00047 U	< 0.00046 U	< 0.00049 U	< 0.00044 U	< 0.00044 U	< 0.00049 U	< 0.00048 U	< 0.00045 U	< 0.00051 U	< 0.00046 U	< 0.00048 U	< 0.00052 U	< 0.00047 U
P,P'-DDT	1.7	NSL	mg/kg	0.0011 J	0.00078 J	< 0.00056 U	< 0.00049 U	< 0.00049 U	< 0.00055 U	< 0.00054 U	< 0.00051 U	< 0.00057 U	< 0.00052 U	< 0.00053 U	< 0.00058 U	< 0.00052 U
Percent Solids (SM2540G)																
Solids, Percent	NSL	NSL	%	80.4	79.6	73.5	78.8	81.9	72.5	78.5	80.6	74.2	81.4	79.1	68.4	79.2

					Table 1.	Son and Sur	lace water R	esuits Summa	гу (Арги 202.	5)						
			Location ID	SS3-06	SS3-07	SS3-07	SS3-07	SS3-08	SS3-08	SS3-08	SS3-09	SS3-09	SS3-09	SS3-10	SS3-10	SS3-10
			Sample Name	754011-SS3-6-	754011-SS3-7-	754011-SS3-7-	754011-SS3-7-	754011-SS3-8-	754011-SS3-8-	754011-SS3-8-	754011-SS3-9-	754011-SS3-9-(2-	754011-SS3-9-	754011-SS3-10-	754011-SS3-10-	754011-SS3-10-
			- Sumple Funite	(12-24)	(0-2)	(2-12)	(12-24)	(0-2)	(2-12)	(12-24)	(0-2)	12)	(12-24)	(0-2)	(2-12)	(12-24)
			Parent Sample													
			ID													
	Destdentishtis	There and a set of	Sample Date	4/20/2023	4/19/2023	4/19/2023	4/19/2023	4/19/2023	4/19/2023	4/19/2023	4/19/2023	4/19/2023	4/19/2023	4/19/2023	4/19/2023	4/19/2023
Analuta	Kesidentiai Use	Unrestricted	Unit		I			I	I	Sol.		I	I		L	
Analyte	301	Use Soli	Um							301						
SVOCS (SW8270E)	NO	NOT		-0.020 U	0.050 1	.0.04210	.0.041 17	.0.042111	- 0.020 LU	-0.041 UI	0.0(2.1	- 0.020 III	- 0.020 UI	-0.044 UI	.0.040 111	- 0.027 UI
Benzaldenyde	INSL	INSL	iiig/kg	< 0.039 U	0.039 J	< 0.042 UJ	< 0.041 UJ	< 0.042 UJ	< 0.039 03	< 0.041 UJ	0.003 J	< 0.039 UJ	< 0.039 UJ	< 0.044 UJ	< 0.049 UJ	< 0.037 UJ
Benzo(A)Anthracene	1	1	mg/kg	< 0.073 U	< 0.084 U	< 0.08 U	< 0.077 U	< 0.078 U	< 0.074 U	< 0.077 U	< 0.079 U	< 0.074 U	< 0.073 U	< 0.082 U	< 0.092 U	< 0.07 U
Benzo(A)Pyrene	1	1	mg/kg	< 0.067 U	< 0.077 U	< 0.073 U	< 0.07 U	< 0.072 U	< 0.068 U	< 0.07 U	< 0.073 U	< 0.068 U	< 0.067 U	< 0.076 U	< 0.084 U	< 0.064 U
Benzo(B)Fluoranthene	1	1	mg/kg	<0.068 U	< 0.079 U	< 0.074 U	< 0.0/1 U	< 0.073 U	< 0.069 U	< 0.072 U	< 0.074 U	< 0.069 U	< 0.068 U	< 0.077 U	< 0.085 U	< 0.065 U
Benzo(G,H,I)Perylene	100	100	mg/kg	< 0.084 U	< 0.098 U	< 0.092 U	< 0.089 U	< 0.091 U	< 0.086 U	< 0.089 U	< 0.092 U	< 0.085 U	< 0.085 U	< 0.095 U	< 0.11 U	< 0.081 U
Benzo(K)Fluoranthene	1	0.8	mg/kg	< 0.073 U	< 0.084 U	< 0.08 U	< 0.076 U	< 0.078 U	< 0.074 U	< 0.077 U	< 0.079 U	< 0.074 U	< 0.073 U	< 0.082 U	< 0.091 U	< 0.07 U
Caprolactam	NSL	NSL	mg/kg	< 0.057 U	< 0.067 U	< 0.063 U	< 0.06 U	< 0.062 U	< 0.059 U	< 0.06 U	< 0.063 U	< 0.058 U	< 0.058 U	< 0.065 U	< 0.072 U	< 0.055 U
Chrysene	1	1	mg/kg	< 0.073 U	< 0.085 U	< 0.08 U	< 0.077 U	< 0.078 U	< 0.074 U	< 0.077 U	< 0.079 U	< 0.074 U	< 0.073 U	< 0.083 U	< 0.092 U	< 0.07 U
Fluoranthene	100	100	mg/kg	< 0.072 U	< 0.083 U	< 0.079 U	< 0.076 U	< 0.077 U	< 0.073 U	< 0.076 U	< 0.078 U	< 0.073 U	< 0.072 U	< 0.081 U	< 0.09 U	< 0.069 U
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	mg/kg	< 0.088 U	< 0.1 U	< 0.097 U	< 0.093 U	< 0.095 U	< 0.09 U	< 0.093 U	< 0.096 U	< 0.089 U	< 0.089 U	< 0.1 U	< 0.11 U	< 0.085 U
Phenanthrene	100	100	mg/kg	< 0.079 U	< 0.091 U	< 0.086 U	< 0.083 U	< 0.085 U	< 0.08 U	< 0.083 U	< 0.086 U	< 0.08 U	< 0.079 U	< 0.089 U	< 0.099 U	< 0.076 U
Pyrene	100	100	mg/kg	< 0.08 U	< 0.094 U	< 0.088 U	< 0.085 U	< 0.087 U	< 0.082 U	< 0.085 U	< 0.088 U	< 0.082 U	< 0.081 U	< 0.091 U	< 0.1 U	< 0.078 U
VOCs (SW8260D)																
Acetone	100	0.05	mg/kg	0.54 J	0.21 J	< 0.0089 U	< 0.0089 U	< 0.0083 UJ	0.089 J	0.11 J	< 0.011 UJ	< 0.0075 UJ	< 0.0075 UJ	< 0.0095 UJ	0.51 J	< 0.0086 UJ
Ethylbenzene	30	1	mg/kg	< 0.00043 U	< 0.0006 U	< 0.00059 U	< 0.00059 U	< 0.00055 U	< 0.00051 U	< 0.00054 U	< 0.00072 U	< 0.0005 U	< 0.00049 U	< 0.00062 U	< 0.00065 U	< 0.00056 U
Methyl Acetate	NSI.	NSI	mø/kø	< 0.001 U	< 0.0014 U	< 0.0014 U	< 0.0014 U	< 0.0013 U	< 0.0012 U	< 0.0013 U	< 0.0017 U	< 0.0012 U	< 0.0012 U	< 0.0015 U	< 0.0016 U	< 0.0014 U
Methyl Ethyl Ketone (2-Butanone)	100	100	mg/kg	< 0.0045 U	< 0.0062 U	< 0.0062 U	< 0.0062 U	< 0.0057 U	< 0.0053 U	< 0.0056 U	< 0.0076 U	< 0.0052 U	< 0.0052 U	< 0.0065 U	< 0.0068 U	< 0.0059 U
Toluene	100	0.7	mg/kg	< 0.00048 U	< 0.00068 U	< 0.00067 U	< 0.00067 U	< 0.00062 U	< 0.00058 U	< 0.00061 U	< 0.00082 U	< 0.00056 U	< 0.00056 U	< 0.00071 U	< 0.00074 U	< 0.00064 U
Motole (SW6010C/SW7471B)	100	0.7	1115/115	0.00010 0	0.0000000	< 0.00007 0	0.00007 0	0.00002.0	0.00050.0	0.00001 0	0.00002.0	0.0000000	0.0000000	0.00071.0	< 0.00014 0	0.000010
Abunimum	NEL	NEL	maka	15000	15000	15000	16000	14000	14000	15000	14000	14000	13000	15000	15000	13000
Antimony	NSL	NGL	mg/kg	<0.41 U	< 0.46 U	< 0.42 U	10000 < 0.42 U	14000	14000 <0.4 U	15000 < 0.42 U	14000	14000	15000	15000	15000	15000
Anumony	INSL	INSL	mg/kg	< 0.41 0	< 0.40 U	< 0.43 U	< 0.42 0		< 0.4 0	< 0.42 0	201	1.5	61	11	421	60
Ausenic	10	15	mg/kg	0.9	3.4 J	3.3 J	3.3 J	4.4	3.3	5.0	3.6 J	4.3	3.1	11	4.3 J	3.9
Banum	350	350	mg/kg	35	150	160	140	91	97	120	80	69	34	110	110	30
Beryllium	14	7.2	mg/kg	0.54	0.66	0.68	0.64	0.52	0.54	0.6	0.49	0.51	0.45	0.6	0.56	0.51
Cadmium	2.5	2.5	mg/kg	< 0.13 U	<0.15 U	< 0.14 U	< 0.13 U	< 0.14 U	< 0.13 U	< 0.14 U	< 0.14 U	< 0.13 U	< 0.13 U	< 0.15 U	< 0.16 U	< 0.13 U
Calcium	NSL	NSL	mg/kg	260	2000	970	810	1900	1500	920	2000	660	410	970	600	340
Chromium, Total	NSL	NSL	mg/kg	17	16	17	17	17	17	17	16	17	14	18	16	15
Cobalt	NSL	30	mg/kg	11	9.5	9.7	10	9.2	9.3	9.7	9.2	9.9	9.9	9.5	9.2	10
Copper	270	50	mg/kg	21	13	12	12	18	17	15	13	12	13	16	12	13
Iron	2,000 (1)	NSL	mg/kg	23000	20000	20000	21000	24000	20000	20000	24000	25000	24000	22000	21000	25000
Lead	400	63	mg/kg	12	17	17	14	36	47 J-	40	15	14	12	19	15	12
Magnesium	NSL	NSL	mg/kg	3300	3300	3000	3300	3200	3100	3000	3000	3000	3000	3000	2800	3100
Manganese	2000	1600	mg/kg	490	1300	1300	1100	650	730	780	590	500	420	890	820	540
Nickel	140	30	mg/kg	24	21	21	22	53	21	22	20	21	21	20	19	22
Potassium	NSL	NSL	mg/kg	870	1400	1200	990	1200	1100	960	1400	950	770	1000	850	830
Silver	36	2	mg/kg	< 0.13 U	< 0.15 U	< 0.14 U	< 0.13 U	< 0.14 U	< 0.13 U	< 0.14 U	< 0.14 U	< 0.13 U	< 0.13 U	< 0.15 U	< 0.16 U	< 0.13 U
Sodium	NSL	NSL.	mg/kg	< 35 U	< 39 U	< 37 U	< 36 U	< 38 U	< 36 U	< 37 U	< 38 U	< 35 U	< 35 U	< 40 U	< 44 U	< 34 U
Thallium	NSL	NSL.	mg/kg	< 0.69 U	< 0.77 U	< 0.73 U	< 0.7 U	< 0.75 U	< 0.7 U	< 0.71 U	< 0.74 U	< 0.67 U	< 0.67 U	< 0.78 U	< 0.85 U	< 0.67 U
Vanadium	100	NSL	mg/kg	19	17	17	18	17	17	17	18	19	16	19	18	17
Zinc	2200	109	me/ke	59	83	82	79	88	91	87	66	64	53	79	72	65
Mercury	0.81	0.18	mg/kg	0.031	0.028.1	0.035	0.033	0.053	0.059	0.12	0.034	0.026 I	0.023.1	0.037	0.051	0.018 I
Pesticides (SW8081R)	0.01	0.10		0.001	0.020 2	0.000	0.000	0.000	0.000	0.12	0.0.54	0.0203	0.025.5	0.007	0.001	0.0103
Chlordana	0.91	0.004	maka	< 0.009 U	< 0.011 U	<0.011 U	< 0.01 U	<0.011 U	< 0.01 U	< 0.01 U	< 0.0089 U	< 0.0000 II	< 0.0000 IT	< 0.0089 U	< 0.01 U	< 0.0081 U
Dialdrin	0.91	0.094	mg/kg	< 0.009 0	< 0.011 0	< 0.011 U	< 0.01 U	< 0.011 U	< 0.01 U	< 0.01 U	< 0.0069 U	< 0.0099 U	< 0.0099 U	< 0.0009 U	< 0.010	< 0.0001 U
Dickinii Hantaahlar Enovida	0.039	0.005	mg/kg	< 0.00045 U	< 0.00057 U	< 0.00054 U	< 0.00052 U	< 0.00053 U	< 0.0005 U	< 0.00052 U	< 0.00049 U	< 0.0005 U	< 0.0005 U	< 0.00049 U	< 0.00057 U	< 0.00045 U
n pr p.p.p.	0.42	0.077	mg/kg	< 0.00044 U	< 0.00056 U	< 0.00053 U	< 0.00051 U	< 0.00052 U	< 0.00049 U	< 0.00051 U	< 0.00057 U	< 0.00049 U	< 0.00049 U	< 0.00057 U	< 0.00066 U	< 0.00052 U
P,P-DDD	2.6	NSL	mg/kg	< 0.00049 U	< 0.00062 U	< 0.00058 U	< 0.00056 U	< 0.00058 U	< 0.00054 U	< 0.00056 U	< 0.00056 U	< 0.00054 U	< 0.00054 U	< 0.00056 U	< 0.00065 U	< 0.00051 U
P,P-DDE	1.8	NSL	mg/kg	< 0.00041 U	< 0.00052 U	0.0017 J	< 0.00047 U	< 0.00049 U	< 0.00046 U	0.0040 J	< 0.00048 U	< 0.00045 U	< 0.00045 U	< 0.00047 U	< 0.00055 U	< 0.00043 U
P,P-DDT	1.7	NSL	mg/kg	< 0.00046 U	< 0.00058 U	0.0011 J	< 0.00053 U	< 0.00054 U	< 0.00052 U	0.0039 J	< 0.00054 U	< 0.00051 U	< 0.00051 U	< 0.00053 U	< 0.00062 U	< 0.00049 U
Percent Solids (SM2540G)															,	
Solids, Percent	NSL	NSL	%	83.5	72.5	76.7	79.5	77.5	82.2	79.6	76.6	83	83	74.3	66.7	86.7

	1		r		1 able 1.	Son and Sur	ace water R	suns summa	ry (April 202.	,,	1					
			Location ID	SS3-11	SS3-11	SS3-11	SS3-12	SS3-12	SS3-12	SS3-13	SS3-13	SS3-13	SS3-14	SS3-14	SS3-14	SS3-14
			Sample Name	754011-SS3-11-	754011-SS3-11	754011-SS3-11-	754011-SS3-12	754011-SS3-12-	754011-SS3-12	754011-SS3-13-	754011-SS3-13-	754011-SS3-13-	754011-SS3-14-	754011-SS3-14	-754011-FD-04-	754011-SS3-14-
			D in i	(0-2)	(2-12)	(12-24)	(0-2)	(2-12)	(12-24)	(0-2)	(2-12)	(12-24)	(0-2)	(2-12)	20230420	(12-24)
			Parent Sample												754011-883-14-	
			ID												(2-12)	
	Desidential Dec	There and shad	Sample Date	4/18/2023	4/18/2023	4/18/2023	4/17/2023	4/17/2023	4/17/2023	4/17/2023	4/17/2023	4/17/2023	4/20/2023	4/20/2023	4/20/2023	4/20/2023
Analuta	Kesidentiai Use	Unrestricted	Unit							C.a			1	I		
Analyte	301	Use Son	Unit							301						
SVOCS (SW8270E)	MOL	2107		0.60 1	0.0(0.1	- 0.020 LU	0141	-0.041 U	-0.04 U	0.20 1	- 0.026 UI	-0.026 UI	0.052.1	-0.044 U	0.051 I	- 0.020 U
Benzaldenyde	INSL	INSL	iiig/kg	0.00 J	0.009 J	< 0.039 UJ	0.14 J	< 0.041 U	< 0.04 U	0.29 J	< 0.033 UJ	< 0.033 UJ	0.032 J	< 0.044 U	0.031 J	< 0.038 U
Benzo(A)Anthracene	1	1	mg/kg	< 0.085 U	< 0.077 U	< 0.074 U	< 0.085 U	< 0.077 U	< 0.075 U	< 0.0/1 U	< 0.066 U	< 0.066 U	< 0.08 U	< 0.082 U	< 0.074 U	< 0.072 U
Benzo(A)Pyrene	1	1	mg/kg	< 0.078 U	< 0.071 U	< 0.068 U	< 0.078 U	< 0.071 U	< 0.068 U	< 0.065 U	< 0.06 U	< 0.061 U	< 0.074 U	< 0.075 U	< 0.068 U	< 0.066 U
Benzo(B)Fluoranthene	1	1	mg/kg	< 0.08 U	< 0.072 U	< 0.069 U	< 0.079 U	< 0.072 U	0.074 J	< 0.066 U	< 0.062 U	< 0.062 U	< 0.075 U	< 0.077 U	< 0.069 U	< 0.067 U
Benzo(G,H,I)Perylene	100	100	mg/kg	< 0.099 U	< 0.09 U	< 0.086 U	< 0.098 U	< 0.089 U	< 0.086 U	< 0.082 U	< 0.076 U	< 0.077 U	< 0.093 U	< 0.095 U	< 0.086 U	< 0.083 U
Benzo(K)Fluoranthene	1	0.8	mg/kg	< 0.085 U	< 0.077 U	< 0.074 U	< 0.085 U	< 0.077 U	< 0.075 U	< 0.071 U	< 0.066 U	< 0.066 U	< 0.08 U	< 0.082 U	< 0.074 U	< 0.072 U
Caprolactam	NSL	NSL	mg/kg	< 0.067 U	< 0.061 U	< 0.058 U	< 0.067 U	< 0.061 U	< 0.059 U	< 0.056 U	< 0.052 U	< 0.052 U	< 0.063 U	0.066 J	< 0.058 U	< 0.056 U
Chrysene	1	1	mg/kg	< 0.085 U	< 0.078 U	< 0.074 U	< 0.085 U	< 0.077 U	0.079 J	< 0.071 U	< 0.066 U	< 0.066 U	< 0.08 U	< 0.082 U	< 0.074 U	< 0.072 U
Fluoranthene	100	100	mg/kg	< 0.084 U	0.098 J	< 0.073 U	< 0.084 U	< 0.076 U	0.16 J	< 0.07 U	< 0.065 U	< 0.065 U	< 0.079 U	< 0.081 U	< 0.073 U	< 0.071 U
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	mg/kg	< 0.1 U	< 0.094 U	< 0.09 U	< 0.1 U	< 0.093 U	< 0.09 U	< 0.086 U	< 0.08 U	< 0.08 U	< 0.097 U	< 0.099 U	< 0.09 U	< 0.087 U
Phenanthrene	100	100	mg/kg	< 0.092 U	0.10 J	< 0.08 U	< 0.092 U	< 0.083 U	0.11 J	< 0.077 U	< 0.071 U	< 0.072 U	< 0.087 U	< 0.089 U	< 0.08 U	< 0.077 U
Pyrene	100	100	mg/kg	< 0.095 U	0.12 J	< 0.082 U	< 0.094 U	< 0.085 U	0.14 J	< 0.079 U	< 0.073 U	< 0.073 U	< 0.089 U	< 0.091 U	< 0.082 U	< 0.079 U
VOCs (SW8260D)																
Acetone	100	0.05	mg/kg	< 0.01 UJ	1.1 J	0.090 J	0.37	0.38	< 0.12 U	0.21	0.52	0.46	0.11	0.11	0.097	0.26 J
Ethylbenzene	30	1	mg/kg	< 0.00067 U	< 0.00051 U	< 0.00043 U	< 0.00066 U	< 0.00052 U	< 0.00051 U	< 0.00054 U	< 0.00047 U	< 0.00051 U	< 0.00058 U	< 0.00055 U	< 0.00049 U	< 0.00046 U
Methyl Acetate	NSI.	NSI	me/ke	< 0.0016 UI	< 0.0012 UI	< 0.001 UI	0.0026	< 0.0013 U	< 0.0012 U	< 0.0013 U	< 0.0011 U	< 0.0012 U	< 0.0014 U	< 0.0013 U	< 0.0012 U	< 0.0011 U
Methyl Ethyl Ketone (2-Butanone)	100	100	mg/kg	0.0088 I	0.0077 I	< 0.0045 U	0.019 I	0.0094 I	0.015 I	0.014 I	< 0.005 U	< 0.0053 U	< 0.006 U	< 0.0058 U	< 0.0052 U	< 0.0048 U
Toluana	100	0.7	ma/kg	< 0.00076 U	< 0.00058 U	< 0.00048 U	< 0.0075 U	< 0.00059 II	< 0.00057 II	< 0.00061 U	< 0.00054 U	< 0.00057 U	< 0.0005 U	< 0.00063 U	< 0.00056 U	< 0.00052 U
Metels (SW6010C/SW7471B)	100	0.7	mg/kg	< 0.00070 0	< 0.00058 0	< 0.00048 0	< 0.00075 0	< 0.00057 0	< 0.00057 0	< 0.00001 0	< 0.00054 0	< 0.00057 0	< 0.00005 0	< 0.00005 C	< 0.00050 0	< 0.00052 0
Metals (3w0010C/3w7471B)	NO	NCI	malia	12000	12000	15000	12000	14000	12000	0000	8400	0.400	12000	12000	14000	12000
Auminum	NSL	INSL	ilig/kg	12000	13000	13000	13000	14000	13000	9000	-0.27.11	9400	13000	13000	14000	12000
Anumony	NSL	NSL	mg/kg	< 0.48 UJ	< 0.42 U	< 0.41 U	< 0.45 U	< 0.43 U	< 0.42 U	< 0.39 U	< 0.37 U	< 0.36 U	< 0.45 U	< 0.44 U	< 0.42 U	
Arsenic	16	13	mg/kg	2.6 J	3.01	4.0 J	5.1	6.2	5.5	6.1	5.7	7.8	3.2 J	2.9 J	3.3 J	4
Barium	350	350	mg/kg	100	110	57	65	80	100	38	33	31	120	110	120	58 J-
Beryllium	14	7.2	mg/kg	0.5	0.53	0.53	0.49	0.54	0.5	0.38	0.35	0.36	0.57	0.54	0.59	0.49
Cadmium	2.5	2.5	mg/kg	< 0.15 U	< 0.13 U	< 0.13 U	0.21 J	0.19 J	0.23 J	0.13 J	< 0.12 U	< 0.12 U	< 0.14 U	< 0.15 U	< 0.13 U	< 0.13 U
Calcium	NSL	NSL	mg/kg	4000	3000	870	1300	1100	1100	2600	3200	5100	1200	950	1000	590
Chromium, Total	NSL	NSL	mg/kg	14	16	16	15	15	14	11	9.6	9.8	14	14	15	14
Cobalt	NSL	30	mg/kg	8.5 J+	8.7 J+	11 J+	8.4	8.4	7	6.7	6.4	7.1	8.7	8.3	9	8.1
Copper	270	50	mg/kg	17	15	14	17	16	15	22	21	24	11	11	12	12
Iron	2,000 (1)	NSL	mg/kg	18000	18000	22000	20000	25000	19000	17000	16000	17000	22000	20000	23000	22000
Lead	400	63	mg/kg	22 J	29	13	22	23	36	15	12	10	25	19	20	10
Magnesium	NSL	NSL	mg/kg	2600	2500	3100	3200	3100	2600	2600	2500	2700	2900	2500	3100	2800
Manganese	2000	1600	mg/kg	770	770	480	440	500	580	420	410	420	960	810	800	330
Nickel	140	30	mg/kg	22	21	24	21	21	17	17	15	16	17	17	19	16
Potassium	NSL	NSL.	mg/kg	980	770	810	1200	1000	960	1000	710	670	680	730	740	710
Silver	36	2	me/ke	< 0.15 U	< 0.14 U	< 0.13 U	0.92	0.97	11	0.42	0.39	0.43	< 0.14 U	< 0.14 U	< 0.13 U	< 0.13 U
Sodium	NSL.	NSI	me/kg	50.1	62.1	71.1	< 39 U	< 37 U	< 36 U	< 34 U	< 32 U	< 31 U	< 39 U	< 38 U	< 36 U	< 35 U
Thallium	NSL	NSL	mg/kg	< 0.81 U	< 0.71 U	< 0.7 U	< 0.76 U	< 0.72 U	<0711	< 0.66 U	< 0.62 U	< 0.61 U	< 0.75 U	< 0.75 U	<071	< 0.68 U
Vanadium	100	NSL	mg/kg	15	16	18	17	18	16	14	13	14	15	15	16	16
Zin.	2200	100	mg/Kg mg/kg	821	78	61	62	62	65	47	40	39	67	62	68	53
Manager	0.81	109	mg/kg	04 J	/ 0 0.020 I	0.020 I	0.025 I	0.051	0.062	4/	40	0.021 I	0.024 I	<0.014 U	0.018 I	233 2 0 012 U
NICICILI Y	0.81	0.18	mg/kg	0.017 J	0.029 J	0.020 J	0.035 J	0.051	0.062	0.019 J	0.024 J	0.021 J	0.024 J	< 0.014 U	0.018 J	< 0.015 U
resucines (SW8081B)	0.01			0.00.11	0.4.11	0.0007.55	0.011.17	0.04.15	0.0000.77	0.000 17	0.007.1-	0.0000.55	0.0000.77	0.0005	0.0000.55	0.0004.44
Chlordane	0.91	0.094	mg/kg	< 0.22 U	< 0.1 U	< 0.0097 U	< 0.011 U	< 0.01 U	< 0.0098 U	< 0.082 U	< 0.037 U	< 0.0088 U	< 0.0089 U	< 0.0095 U	< 0.0083 U	< 0.0091 U
Dieldrin	0.039	0.005	mg/kg	< 0.011 U	< 0.005 U	< 0.00049 U	< 0.00057 U	< 0.00052 U	< 0.00049 U	< 0.0045 U	< 0.002 U	< 0.00045 U	< 0.00049 U	< 0.00052 U	< 0.00046 U	< 0.00046 U
Heptachlor Epoxide	0.42	0.077	mg/kg	< 0.011 U	< 0.0049 U	< 0.00048 U	< 0.00056 U	< 0.00051 U	< 0.00048 U	< 0.0052 U	< 0.0024 U	< 0.00044 U	< 0.00057 U	< 0.00061 U	< 0.00053 U	< 0.00045 U
P,P'-DDD	2.6	NSL	mg/kg	< 0.012 U	< 0.0054 U	< 0.00053 U	< 0.00062 U	< 0.00056 U	< 0.00053 U	< 0.0052 U	< 0.0023 U	< 0.00048 U	< 0.00056 U	< 0.0006 U	< 0.00053 U	< 0.0005 U
P,P'-DDE	1.8	NSL	mg/kg	< 0.01 U	< 0.0046 U	< 0.00045 U	< 0.00065 U	0.0014 J	< 0.00056 U	< 0.0054 U	< 0.0024 U	< 0.00041 U	0.0037 J	0.0023 J	0.0036 J	< 0.00042 U
P,P'-DDT	1.7	NSL	mg/kg	< 0.011 U	< 0.0051 U	< 0.0005 U	< 0.00058 U	< 0.00053 U	0.0016 J	< 0.0049 U	< 0.0022 U	< 0.00045 U	0.0035 J	0.0019 J	0.0030 J	< 0.00047 U
Percent Solids (SM2540G)																
Solids, Percent	NSL	NSL	%	71.7	79	82.6	72.4	79.6	82.1	86	92.8	92.5	76.4	74.2	81.9	85.5

					Table 1	Son and Sur	lace water K	esuns Summa	ry (April 202.	3)						
			Location ID	\$\$3-15	SS3-15	SS3-15	SS3-16	SS3-16	SS3-16	SS3-17	SS3-17	SS3-17	SS3-18	SS3-18	SS3-18	SS3-19
			Sample Name	754011-583-15	754011-583-15	- 754011-883-15	/54011-583-16	- 754011-583-16-	/54011-583-16	- /54011-583-1/	- 754011-883-17-	- 754011-883-17-	754011-883-18	754011-883-18	- 754011-583-18	- 754011-883-19-
			Parent Sample	(0-2)	(2-12)	(12-24)	(0-2)	(2-12)	(12-24)	(0-2)	(2-12)	(12-24)	(0-2)	(2-12)	(12-24)	(0-2)
			T at ent Sample													
	Residential Lise	Unrestricted	Sample Date	4/20/2023	4/20/2023	4/20/2023	4/17/2023	4/17/2023	4/17/2023	4/17/2023	4/17/2023	4/17/2023	4/17/2023	4/17/2023	4/17/2023	4/17/2023
Analyte	Soil	Use Soil	Unit							Soil			1			
SVOCs (SW8270E)		000000														
Benzaldehyde	NSL.	NSI	mø/kø	0.16 J	< 0.042 U	< 0.041 U	0.097 I	< 0.041 U	< 0.039 U	0.17 J	< 0.041 U	< 0.039 U	0.33 J	< 0.041 UJ	< 0.043 U	0.56
Benzo(A)Anthracene	1	1	mg/kg	< 0.083 U	< 0.08 U	< 0.078 U	< 0.081 U	< 0.078 U	< 0.074 U	< 0.082 U	< 0.078 U	< 0.073 U	< 0.089 U	< 0.078 U	< 0.081 U	< 0.087 U
Benzo(A)Pyrene	1	1	mg/kg	< 0.005 U	< 0.073 U	< 0.070 U	< 0.001 U	< 0.070 U	< 0.067 U	< 0.002 C	< 0.070 U	< 0.067 U	< 0.082 U	< 0.070 U	< 0.001 U	< 0.079 U
Benzo(B)Fluoranthene	1	1	mg/kg	< 0.077 U	< 0.075 U	< 0.073 U	< 0.076 U	< 0.072 U	< 0.069 U	< 0.075 U	< 0.072 U	< 0.067 U	< 0.082 U	< 0.071 U	< 0.074 U	< 0.081 U
Benzo(G H DPervlene	100	100	mg/kg	< 0.096 U	< 0.092 U	< 0.09 U	< 0.094 U	< 0.09 U	< 0.085 U	< 0.095 U	< 0.09 U	< 0.085 U	< 0.1 U	< 0.09 U	< 0.070 U	< 0.1 U
Benzo(K)Eluoranthana	100	0.8	mg/kg	< 0.093 U	< 0.092 0	< 0.078 U	< 0.094 U	< 0.078 U	< 0.005 U	< 0.093 U	< 0.077 U	< 0.003 U	< 0.089.11	< 0.078 U	< 0.094 U	< 0.087 U
Correlator	NEL	0.8	mg/kg	< 0.065 U	< 0.062 U	< 0.078 U	< 0.061 U	< 0.078 U	< 0.075 U	< 0.062 U	< 0.061 U	< 0.058 U	< 0.037 U	< 0.078 U	< 0.061 U	< 0.067 U
Caprolaciani	INSL	INSL	ilig/kg	< 0.003 U	< 0.003 U	< 0.001 U	< 0.004 U	< 0.001 U	< 0.038 U	< 0.004 U	< 0.001 U	< 0.038 U	< 0.07 U	< 0.001 U	< 0.004 U	< 0.008 U
Chivsene	1	1	ilig/kg	< 0.083 U	< 0.08 U	< 0.078 U	< 0.081 U	< 0.078 U	< 0.074 U	< 0.082 U	< 0.078 U	< 0.073 U	< 0.089 U	< 0.078 U	< 0.081 U	< 0.087 U
Filorantinene	100	100	mg/kg	< 0.082 U	< 0.079 U	< 0.077 U	< 0.08 U	< 0.077 U	< 0.073 U	< 0.081 U	< 0.077 U	< 0.072 U	< 0.088 U	< 0.077 U	< 0.08 U	< 0.086 U
Indeno(1,2,3-C,D)Pyrene	0.5	0.5	mg/kg	< 0.1 U	< 0.097 U	< 0.094 U	< 0.099 U	< 0.094 U	< 0.089 U	< 0.099 U	< 0.094 U	< 0.089 U	< 0.11 U	< 0.094 U	< 0.098 U	< 0.11 U
Phenanthrene	100	100	mg/kg	< 0.09 U	< 0.086 U	< 0.084 U	< 0.088 U	< 0.084 U	< 0.08 U	< 0.088 U	< 0.084 U	< 0.079 U	< 0.096 U	< 0.084 U	< 0.088 U	< 0.094 U
Pyrene	100	100	mg/kg	< 0.092 U	< 0.088 U	< 0.086 U	< 0.09 U	< 0.086 U	< 0.081 U	< 0.091 U	< 0.086 U	< 0.081 U	< 0.099 U	< 0.086 U	< 0.09 U	< 0.096 U
VOCs (SW8260D)																
Acetone	100	0.05	mg/kg	< 0.0095 U	0.29	0.55	0.14	0.33	0.45	0.18	0.25	0.26	< 0.17 U	< 0.0081 U	0.72	0.22
Ethylbenzene	30	1	mg/kg	< 0.00062 U	< 0.00053 U	< 0.00057 U	< 0.00059 U	< 0.00042 U	< 0.00048 U	< 0.00057 U	< 0.0005 U	< 0.00052 U	< 0.00071 U	< 0.00054 U	< 0.00057 U	< 0.00066 U
Methyl Acetate	NSL	NSL	mg/kg	< 0.0015 U	< 0.0013 U	< 0.0014 U	0.0016 J	< 0.001 U	< 0.0012 U	< 0.0014 U	< 0.0012 U	< 0.0013 U	< 0.0017 U	< 0.0013 U	< 0.0014 U	< 0.0016 U
Methyl Ethyl Ketone (2-Butanone)	100	100	mg/kg	< 0.0065 U	< 0.0055 U	< 0.0059 U	0.0077 J	0.0062 J	< 0.005 U	0.0075 J	< 0.0053 U	< 0.0055 U	< 0.0074 U	< 0.0056 U	< 0.006 U	0.0097 J
Toluene	100	0.7	mg/kg	< 0.00071 U	< 0.0006 U	< 0.00064 U	< 0.00067 U	< 0.00047 U	< 0.00055 U	0.00084 J	< 0.00057 U	< 0.00059 U	< 0.0008 U	< 0.00061 U	< 0.00065 U	< 0.00075 U
Metals (SW6010C/SW7471B)																
Aluminum	NSL	NSL	mg/kg	12000	15000	16000	15000	16000	15000	16000	18000	14000	15000	16000	22000	13000
Antimony	NSL	NSL	mg/kg	< 0.45 U	< 0.44 U	< 0.43 U	< 0.45 U	< 0.43 U	< 0.4 U	< 0.43 U	< 0.44 U	< 0.41 U	< 0.49 U	< 0.43 U	< 0.45 U	< 0.48 U
Arsenic	16	13	mg/kg	3.9 J	4.6	3.5 J	6.4	5.6	7.2	7.5	7.4	7.6	4.2 J	5.1	3.8 J	5.9
Barium	350	350	mg/kg	120	120	140	100	120	45	59	59	29	68	72	98	57
Beryllium	14	7.2	mg/kg	0.49	0.59	0.67	0.55	0.59	0.52	0.56	0.57	0.51	0.54	0.53	0.67	0.52
Cadmium	2.5	2.5	mg/kg	0.24 J	0.23 J	< 0.14 U	0.19 J	0.16 J	< 0.13 U	< 0.14 U	< 0.14 U	< 0.13 U	0.24 J	0.17 J	< 0.14 U	0.35 J
Calcium	NSL	NSL	mg/kg	2000	470	360	1700	1300	750	1600	1000	360	1900	1100	1200	1400
Chromium, Total	NSL	NSL	mg/kg	15	16	18	16	17	16	18	19	16	17	16	20	16
Cobalt	NSL	30	mg/kg	7.8	8.9	9.8	8.7	9.1	11	9.8	10	9.9	7.6	7.4	7.1	9.1
Copper	270	50	mg/kg	13	13	11	13	12	15	17	16	19	19	17	13	18
Iron	2.000 (1)	NSL	mg/kg	17000	19000	21000	20000	26000	29000	30000	36000	30000	20000	19000	18000	21000
Lead	400	63	mg/kg	15	17	11	17	14	12	14	14	11	18	15	41	16
Magnesium	NSL	NSL	mg/kg	2600	2700	3000	3000	3100	3600	3600	3800	3400	3400	2900	3100	3400
Manganese	2000	1600	mg/kg	750	960	1100	830	910	490	570	530	380	320	440	250	530
Nickel	140	30	mg/kg	19	19	21	19	19	22	21	21	21	22	20	22	24
Potassium	NSL	NSL.	mg/kg	1300	950	890	1100	980	940	1000	1000	830	1400	1100	1400	1100
Silver	36	2	mg/kg	< 0.14 U	< 0.14 U	< 0.14 U	1.2	1.3	1.3	1.2	1.4	1.1	1.1	1.1	1.2	1.1
Sodium	NSI.	NSI	me/ke	< 39 U	< 38 U	< 37 U	< 38 U	< 37 U	< 34 U	< 37 U	< 38 U	< 35 U	< 43 U	< 37 U	45 I	< 41 U
Thallium	NSL.	NSI	me/ke	< 0.75 U	< 0.75 U	< 0.72 U	< 0.75 U	< 0.73 U	< 0.67 U	< 0.73 U	< 0.73 U	< 0.69 U	< 0.83 U	< 0.73 U	< 0.75 U	< 0.8 U
Vanadium	100	NSI	mg/kg	15	18	19	20	20	20	21	23	19	20	21	25	18
Zinc	2200	109	mg/kg	71	75	69	62	62	56	53	54	43	66	58	67	120
Mercury	0.81	0.18	mg/kg	0.030 I	0.05	< 0.014 U	0.028 I	0.019 I	0.018 I	0.016 I	0.019.1	< 0.013 U	0.027 I	0.038	0.033 I	0.066
Pesticides (SW8081B)	0.01	0.18	116/115	0.0503	0.00	0.0140	0.020 5	0.0177	0.0103	0.0105	0.0177	0.015 0	0.0275	0.050	0.0557	0.000
Chlordana	0.91	0.004	maka	0.014 I	< 0.0002 II	< 0.009 H	< 0.0093 U	< 0.0089 II	< 0.0083 U	< 0.0094 U	< 0.0087 U	< 0.0083 U	< 0.057 U	< 0.01 U	< 0.011 H	< 0.057 U
Dialdrin	0.039	0.094	mg/kg	0.0023 I	< 0.00051 U	< 0.00049 U	< 0.00051 U	< 0.00049 U	< 0.0003 U	< 0.00052 U	< 0.0007 U	< 0.00035 U	< 0.0070 U	< 0.00052 II	< 0.00055 U	< 0.0029 U
Hantachlor Enovida	0.039	0.005	mg/kg	< 0.0023 J	< 0.00051 U	< 0.00049 U	< 0.00051 U	< 0.00049 U	< 0.00040 U	< 0.00052 U	< 0.00048 U	< 0.00040 U	< 0.0029 U	< 0.00052 U	< 0.00055 U	< 0.0029 U
P P DDD	0.42	0.077	mg/kg	< 0.00061 U	< 0.00059 U	< 0.00057 U	< 0.00059 U	< 0.00057 U	< 0.00053 U	< 0.0006 U	< 0.00055 U	< 0.00055 U	< 0.0028 U	< 0.00051 U	< 0.00055 U	< 0.0028 U
	2.0	NSL	mg/Kg	< 0.0006 U	< 0.00058 U	< 0.00057 U	< 0.00059 U	< 0.00050 U	< 0.00052 U	< 0.00059 U	< 0.00055 U	< 0.00055 U	< 0.0031 U	< 0.00057 U	< 0.00059 U	0.0099 J
P.P.DDE	1.8	NSL	mg/kg	0.014	0.019	0.0030 J	< 0.00057 U	< 0.00059 U	< 0.00055 U	< 0.00062 U	< 0.00057 U	< 0.00055 U	< 0.0026 U	< 0.00048 U	< 0.0005 U	< 0.0035 U
P,P-DDT	1./	NSL	mg/kg	0.0053 J	0.006	0.0012 J	< 0.00056 U	< 0.00054 U	< 0.0005 U	< 0.0005 / U	< 0.00052 U	< 0.0005 U	< 0.0029 U	< 0.00053 U	< 0.00056 U	0.0030 J
Percent Solids (SM2540G)	NOT	101		73 0				20.0				02.5	<0.0	7 0.7	24.4	70.4
Solids, Percent	NSL	NSL	%	73.8	76.6	77.9	75.2	78.9	83.3	74.9	79	83.5	68.9	78.6	75.5	70.6

			Location ID	SS3-19	SS3-19	SS3-20	SS3-20	SS3-20	SS3-20		Location ID	SW-01
			Course Norma	754011-SS3-19-	754011-SS3-19	- 754011-SS3-20	754011-SS3-20	754011 ED 01	754011-SS3-20-		Coursel Norma	754011-SW-01-
			Sample Name	(2-12)	(12-24)	(0-2)	(2-12)	/54011-FD-01	(12-24)		Sample Name	04192023
			Parent Sample ID					754011-SS3-20- (2-12)			Parent Sample ID	
			Sample Date	4/17/2023	4/17/2023	4/17/2023	4/17/2023	4/17/2023	4/17/2023		Sample Date	4/19/2023
Analyte	Residential Use Soil	Unrestricted Use Soil	Unit			s	oil				Unit	Surface Water ⁽²⁾
SVOCe (SW8270E)	501	030 500								·	SVOC	o (8270E)
Pangaldahuda	NCL	NET	malka	0.044 I	0.064 I	0.10.1	< 0.027 U	0.047.1	< 0.024 U	·	3100	S (8270E)
Conzo(A) Anthrocomo	1	NOL	mg/kg	< 0.075 U	< 0.076 U	< 0.09 II	< 0.037 U	< 0.047 J	< 0.050 U	·	μg/L μg/L	NA
tenzo(A)Anunacene	1	1	mg/kg	< 0.073 U	< 0.070 U	< 0.08 U	< 0.07 U	< 0.009 U	< 0.062 U		μg/L 	NA
Renzo(R)Eluoranthana	1	1	mg/kg	< 0.009 U	< 0.07 U	< 0.075 U	< 0.065 U	< 0.065 U	< 0.062 U		µg/L µg/I	NA NA
Renzo(G H DParylana	100	100	mg/kg	< 0.087 U	< 0.071 U	< 0.003 U	< 0.065 U	< 0.08 U	< 0.003 U	·	µg/L µg/I	NA
Ranzo(K)Eluoranthana	100	100	mg/kg	< 0.037 U	< 0.035 U	< 0.093 U	< 0.031 U	< 0.069 U	< 0.067 U	·	µg/L µg/I	NA
Canrolactam	NSI	0.8	mg/kg	< 0.059 U	< 0.06 U	< 0.063 U	< 0.055 U	< 0.005 U	< 0.053 U	·	µg/L	NA
Thrysene	1	1	me/kg	< 0.075 U	< 0.076 U	< 0.08 U	< 0.07 U	< 0.069 U	< 0.068 U	· F	μg/L μg/Ι	NA
luoranthene	100	100	mg/kg mg/kg	< 0.074 U	< 0.075 U	< 0.079 U	< 0.069 U	< 0.069 U	< 0.067 U	•	μg/L μg/Ι	NA
ndeno(1 2 3.C D)Pyrene	0.5	0.5	mg/kg	< 0.091 U	< 0.092 U	< 0.097 U	< 0.084 U	< 0.084 U	< 0.082 U	.	µg/L	NA
Phenanthrene	100	100	me/ke	< 0.082 U	< 0.083 U	< 0.087 U	< 0.076 U	< 0.075 U	< 0.002 U	· F	μg/L μα/Ι	NA
Pyrene	100	100	me/kg	< 0.082 U	< 0.084 U	< 0.089 U	< 0.077 U	< 0.077 U	< 0.075 U	· F	μg/L μg/Ι	NA
/OCs (SW8260D)	100	100		10.005 0	10.0010	0.0050	10.017.0	10.0770	10.075 0	· F	VOC	(8260D)
Acetone	100	0.05	mø/kø	0.46	0.47	0.33	0.2	0.22	< 0.007 U	· F		441
itylbenzene	30	1	me/ke	< 0.0005 U	< 0.00054 U	< 0.00059 U	< 0.00049 11	< 0.00049 U	< 0.00046 U	· F	μg/L μα/Ι	< 0.22 II
Arthyl Acetate	NSI	NSI	mg/kg	< 0.0003 U	< 0.00034 C	< 0.0014 U	< 0.0012 U	< 0.0012 U	< 0.0011 UI	• -	μg/L μg/Ι	< 0.61 UI
[ethyl Fthyl Ketone (2-Butanone)	100	100	mg/kg	< 0.0012 U	< 0.0015 U	0.013 I	< 0.0012 U	0.0065 I	< 0.0011 CJ	• -	µg/L µg/I	<17U
oluene	100	0.7	mg/kg	< 0.00055 U	< 0.00061 U	< 0.00067 U	< 0.00055 U	< 0.00055 U	< 0.00052 U	-	µg/L µg/I	< 0.22 U
Ietals (SW6010C/SW7471B)	100	0.7	116/116	0.0000710	0.00001 0	0.00007 0	0.00000000	0.000500	0.00002.0	-	Metals (6	< 0.22 0 010C/7471B)
luminum	NSI	NSI	mø/kø	1400	14000	11000	11000	10000	11000	-	ug/I	NA
Antimony	NSL	NSI	mg/kg	< 0.41 U	< 0.42 U	< 0.43 U	< 0.38 U	< 0.38 U	< 0.37 UI	·	µg/L	NA
rsenic	16	13	mg/kg	71	65	85	7.2	68	65	-	µg/L µg/I	NA
arium	350	350	mg/kg	50	56	46	39	46	46	.	µg/L	NA
Bervllium	14	7.2	mg/kg	0.46	0.52	0.43	0.42	0.42	0.42	.	ug/L	NA
Cadmium	2.5	2.5	mg/kg	< 0.13 U	0.17 J	< 0.14 U	< 0.12 U	< 0.12 U	< 0.12 U	·	ug/L	NA
Calcium	NSL	NSL.	mg/kg	160	1200	2500	4700	3900	11000	·	ug/L	NA
Chromium, Total	NSL	NSL	mg/kg	15	15	12	11	12	12	·	µg/L	NA
Cobalt	NSL	30	mg/kg	8.5	8.8	7.4	7.7	7.6	7.6	·	ug/L	NA
Copper	270	50	mg/kg	18	15	23	24	24	23		ug/L	NA
on	2.000 ⁽¹⁾	NSL	mg/kg	2600	27000	19000	24000	23000	24000	·	μg/L	NA
ead	400	63	mg/kg	2.1	15	11	12	12	11	· •	µg/L	NA
Aagnesium	NSL	NSL	mg/kg	380	3400	3000	3200	3100	3500	·	µg/L	NA
langanese	2000	1600	mg/kg	1200	510	400	430	570	490	·	μg/L	NA
lickel	140	30	mg/kg	22	20	17	17	17	17	·	μg/L	NA
otassium	NSL	NSL	mg/kg	900	810	1100	800	710	840	· •	μg/L	NA
ilver	36	2	mg/kg	< 0.13 U	1	0.99	1	0.68	0.72	·	µg/L	NA
odium	NSL	NSL	mg/kg	< 36 U	< 36 U	< 37 U	< 33 U	< 32 U	33 J	·	μg/L	NA
Thallium	NSL	NSL	mg/kg	< 0.7 U	< 0.7 U	< 0.73 U	< 0.65 U	< 0.63 U	< 0.63 UJ	·	µg/L	NA
anadium	100	NSL	mg/kg	2	18	18	20	21	18	·	μg/L	NA
linc	2200	109	mg/kg	110	64	46	42	41	42	·	µg/L	NA
Aercury	0.81	0.18	mg/kg	0.063	0.04	0.022 J	0.012 J	0.024 J	< 0.012 U	·	μg/L	NA
esticides (SW8081B)				•	•		•		•	· •	Pesticid	es (8081B)
Chlordane	0.91	0.094	mg/kg	< 0.01 U	< 0.01 U	< 0.053 U	< 0.16 U	< 0.45 U	< 0.0078 U	·	µg/L	NA
Dieldrin	0.039	0.005	mg/kg	< 0.00051 U	< 0.00051 U	< 0.0027 U	< 0.0086 U	< 0.022 U	< 0.00043 U	·	μg/L	NA
Ieptachlor Epoxide	0.42	0.077	mg/kg	< 0.0005 U	< 0.0005 U	< 0.0026 U	< 0.01 U	< 0.022 U	< 0.0005 U	·	µg/L	NA
P-DDD	2.6	NSL	mg/kg	0.0012 J	< 0.00056 U	< 0.0029 U	< 0.0098 U	< 0.024 U	< 0.00049 U	· •	μg/L	NA
P.P-DDE	1.8	NSL	mg/kg	0.0067	0.0017 J	< 0.0024 U	< 0.01 U	< 0.021 U	0.0010 J	·	μg/L	NA
P,P-DDT	1.7	NSL	mg/kg	0.0037 J	< 0.00052 U	< 0.0027 U	< 0.0094 U	< 0.023 U	0.0012 J	·	μg/L	NA
ercent Solids (SM2540G)				•	•				•	·	Percent S	olids (2450G)
Solids, Percent	NSL.	NSL.	%	81.3	80.3	76.3	87.8	88.2	90.7	· F	це/Г.	NΔ

	1 a D	le 2. 5011 Gas 5a	impling Results	Summary (Jun	e/July 2025)	
	Sample ID	754011-SGP-01	754011-SGP-02	754011-SGP-03	754011-SGP-04	754011-SGP-05
	Sample Date	6/1/2023	6/1/2023	6/1/2023	6/1/2023	7/6/2023
Parameters List TO-15	Parent Sample					
Acetone	$\mu g/m^3$	53	96	22	70	24
Benzene	$\mu g/m^3$	4.5	22	0.65	5.5	2.5
2-Butanone (MEK)	$\mu g/m^3$	4.1 J	6.0 J	< 3.1 U	5.4 J	4.7 J
Carbon Disulfide	$\mu g/m^3$	1.7 J	6.2	< 0.29 U	2.2 J	< 0.29 UJ
Chlorobenzene	$\mu g/m^3$	< 0.31 U	< 0.31 U	< 0.31 U	0.34 J	< 0.31 U
Chloroform	$\mu g/m^3$	< 0.46 U	0.71	< 0.46 U	< 0.46 U	< 0.46 U
Chloromethane	$\mu g/m^3$	< 0.16 U	0.85	0.28 J	0.31 J	0.19 J
Cyclohexane	$\mu g/m^3$	3	14	< 0.21 U	5	2.7
1,3-Dichlorobenzene	$\mu g/m^3$	15	16	19	14	3.2
Dichlorodifluoromethane (Freon 12)	µg/m ³	2.0 J	1.8 J	2.0 J	2.3 J	1.2
1,1-Dichloroethylene	$\mu g/m^3$	< 0.3 U	1.3	< 0.3 U	< 0.3 U	< 0.3 U
cis-1,2-Dichloroethylene	$\mu g/m^3$	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U
trans-1,2-Dichloroethylene	$\mu g/m^3$	< 0.31 U	< 0.31 U	< 0.31 U	< 0.31 U	< 0.31 U
Ethanol	$\mu g/m^3$	52	42	29	93	220 J
Ethyl Acetate	$\mu g/m^3$	2.6 J	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
Ethylbenzene	$\mu g/m^3$	12	25	0.57	4.2	18
4-Ethyltoluene	$\mu g/m^3$	5.7	3.6	0.42 J	0.52	4.1
Heptane	$\mu g/m^3$	3.4	33	1.2	45	6.6
Hexane	$\mu g/m^3$	6.5 J	29	< 1.8 U	9.0 J	2.9 J
2-Hexanone (MBK)	$\mu g/m^3$	1.6	< 0.2 U	0.62	< 0.2 U	8.5
Isopropanol	$\mu g/m^3$	22	18	12	24	34
4-Methyl-2-pentanone (MIBK)	$\mu g/m^3$	< 0.22 U	< 0.22 U	0.53	< 0.22 U	2.2
Naphthalene	$\mu g/m^3$	3.1 J	7.5 J	5.2 J	1.1 J	1.9 J
Propene	$\mu g/m^3$	15	22	< 1.5 U	< 1.5 U	< 1.5 U
Styrene	$\mu g/m^3$	4.5	1.1	0.37 J	0.36 J	2.5
Tetrachloroethylene	$\mu g/m^3$	0.72	3.5	< 0.52 U	0.8	0.9
Tetrahydrofuran	$\mu g/m^3$	0.66 J	0.73 J	< 0.48 U	0.63 J	0.74 J
Toluene	$\mu g/m^3$	30	180	7.9	110	100
Trichloroethylene	$\mu g/m^3$	< 0.36 U	< 0.36 U	< 0.36 U	< 0.36 U	< 0.36 U
Trichlorofluoromethane (Freon 11)	$\mu g/m^3$	1.2 J	1.3 J	1.5 J	1.6 J	1.2 J
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	$\mu g/m^3$	< 0.85 U	< 0.85 U	< 0.85 U	0.98 J	< 0.85 U
1,2,4-Trimethylbenzene	$\mu g/m^3$	18	11	6.2	5.6	20
1,3,5-Trimethylbenzene	$\mu g/m^3$	5.3	3.4	0.39 J	0.65	3.2
Vinyl Acetate	$\mu g/m^3$	< 1.9 U	< 1.9 U	3.2 J	< 1.9 U	< 1.9 U
m&p-Xylene	$\mu g/m^3$	58	86	2.6	14	72
o-Xylene	µg/m ³	21	24	1.1	4.6	23

Table 2. Soil Gas Sampling Results Summary (June/July 2023)

Notes:

There are currently no screening levels for outdoor soil vapor points.

Data was validated by Environmental Data Services, Ltd.

(1) SGP-05 and the field duplicate were sampled twice due to faulty air canisters on 6/1/2023. Data from 7/6/2023 is the best representation of results at this soil gas point.

 $\mu g/m^3 = microgram(s)$ per cubic meter

U = Analyte not detected.

Table 3. Soil Vapor Intrusion Results Summary (July 2023)

	Sample ID	754011-SS-1	754011-IA-1	754011-OA-1		NVSDOH Ambient
	Sample Date	7/7/2023	7/7/2023	7/7/2023	NYSDOH	Air Quality
	Room	Basement	Basement	Outdoor	Ambient Air	Recommended
Parameter List EPA Method 8260D	Sample Type	Subslab Soil Gas	Indoor Air	Outdoor Air	Quality Guideline ¹	Immediate Action Level ¹
Acetone	$\mu g/m^3$	6.8 J	14	20		
Benzene	$\mu g/m^3$	0.5	2.5	0.31		
1,3-Butadiene	$\mu g/m^3$	< 0.22 U	0.13	< 0.078 U		
2-Butanone (MEK)	$\mu g/m^3$	< 12 U	2.1 J	3.7 J		
Carbon Tetrachloride	$\mu g/m^3$	< 0.63 UJ	0.48 J	0.38 J		
Chloroform	$\mu g/m^3$	0.62	< 0.17 U	< 0.17 U		
Chloromethane	$\mu g/m^3$	< 0.41 U	0.55	1		
Cyclohexane	$\mu g/m^3$	< 0.34 U	0.64	< 0.12 U		
1,4-Dichlorobenzene	$\mu g/m^3$	< 0.6 U	1.1	< 0.21 U		
Dichlorodifluoromethane (Freon 12)	$\mu g/m^3$	1.1	0.9	0.75		
Ethanol	$\mu g/m^3$	7.1 J	8.6	13		
Ethyl Acetate	$\mu g/m^3$	< 3.6 U	< 1.3 U	1.6		
Ethylbenzene	$\mu g/m^3$	0.34 J	0.3	< 0.15 U		
Heptane	$\mu g/m^3$	0.42	0.89	0.14 J		
Hexane	$\mu g/m^3$	< 14 U	1.9 J	< 4.9 U		
2-Hexanone (MBK)	$\mu g/m^3$	0.44	< 0.14 U	0.65		
Isopropanol	$\mu g/m^3$	< 9.8 UJ	1.4 J	1.3 J		
4-Methyl-2-pentanone (MIBK)	$\mu g/m^3$	< 0.41 U	0.095 J	0.26		
Naphthalene	$\mu g/m^3$	< 0.52 UJ	0.54 J	< 0.18 UJ		
Styrene	$\mu g/m^3$	< 0.43 U	1	< 0.15 U		
Tetrachloroethylene	$\mu g/m^3$	25	0.5	< 0.24 U	30	300
Tetrahydrofuran	$\mu g/m^3$	< 2.9 U	< 1 U	< 1 U		
Toluene	$\mu g/m^3$	3.1	2.4	0.59		
Trichloroethylene	$\mu g/m^3$	< 0.54 U	< 0.19 U	0.19	2	20
Trichlorofluoromethane (Freon 11)	$\mu g/m^3$	1.1 J	1	1		
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	$\mu g/m^3$	< 3.1 U	0.38 J	0.40 J		
1,2,4-Trimethylbenzene	$\mu g/m^3$	0.33 J	0.55	0.14 J		
1,3,5-Trimethylbenzene	µg/m ³	< 0.49 U	0.15 J	< 0.17 U		
Vinyl Acetate	$\mu g/m^3$	<7 U	2.9	3.7		
m&p-Xylene	$\mu g/m^3$	1.4	1.3	0.21 J		
o-Xylene	$\mu g/m^3$	0.46	0.55	0.088 J		

Notes:

Data validated by Environmental Data Services, Ltd.

1. NYSDOH Ambient Air Guidelines and Immediate Action Levels based on the Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, October 2006, and NYSDOH Soil Vapor Intrusion Updates dated September 2013, August 2015, and May 2017.

EPA = U.S. Environmental Protection Agency

 $\mu g/m^3 = microgram(s)$ per cubic meter

ID = Identification

ND = Not detected

NYSDOH= New York State Department of Health

Attachment A

Daily Field Reports

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0.4	ental Remediatio	on 2	NEW YOI STATE OF OPPORTUNIT	RK Departm Environn Conserva	ent of nental ntion	Contract DEC Insp DEC PM - 3	No. D009 - N/A Stephanie	9806-31 Fitzgerald
Site Location: Form	er Owego Heat	Treat				Contractor	Supt. – N/	Α
	Weather	Conditio	ns			Engineer	M Mogar	Millor
General Description	Rain	AM	Su	inny	PM	Engineer P	m – megar	i winter
Temperature	38 F	AM	58	8 F	PM	Engineer Ir	isp. – N/A	
Wind	9 mph NW	AM	13 m	nph N	РМ			
Health & Safety If any box below is	checked "Yes"	', provide	explanatio	on under "He	ealth &	Safety Co	mments"	<u>. </u>
Were there any change	s to the Health &	Safety Plar	n?			*Yes	No	NA
Were there any exceed	ances of the perin	neter air m	onitoring repo	orted on this da	ate?	*Yes	No	NA
Were there any nuisand	e issues reported	/observed	on this date?	2		*Yes	No	NA
Health & Safety Cor	nments						1	
Safety Topic: bugs, sun	, slips, trips & falls	3.						
Summary of Work P	Performed	Arrived a	t site: 08	800	D	eparted Site	: 1830	
(1030) NYSDEC (S. Fit	zgerald) onsite for	site visit.	Walk site with					
GW Crew [H. Young & gauged in the AM on 4/ (1504); waited for recha Surface Soil Crew [T. R SS3-17, SS3-16, SS3-1 (1330) S. Fitzgerald and (1815) EA packs all equ	C. Badman]: (093 18. (1500-1705) F arge and sampled cobinson & K. Cas I3 [3 intervals at e d M. Miller leave s upment into vehic	0-1730) Gr Purge & sar at 1705. (1 sidy]: (093 ach locatic ite. les. (1830)	roundwater sy mple all 4 Por 1730) Put tubi 5-1755) Surfa on]. [FD-01 & EA personne	h M. Miller, talk ynoptic gaugin rts of CMT1-0′ ing down CMT ace soil sampli MS/MSD sam el offsite.	t to hon g of all I. CMT wells f ng at S ple set	neowner at 1 CMT wells. N 1-01 Port 2 w for sampling. S3-12, SS3- taken].	645 Marshl /Ws lockec /ent dry dur 19, SS3-18	and Rd. I and will be ing purge , SS3-20,
GW Crew [H. Young & gauged in the AM on 4/ (1504); waited for recha Surface Soil Crew [T. R SS3-17, SS3-16, SS3-1 (1330) S. Fitzgerald and (1815) EA packs all equ Equipment/Material If any box below is o	C. Badman]: (093 18. (1500-1705) F arge and sampled tobinson & K. Cas 13 [3 intervals at e d M. Miller leave s upment into vehic Tracking checked "Yes"	0-1730) Gr Purge & sar at 1705. (1 sidy]: (093 ach locatic ite. les. (1830)	explanation	h M. Miller, talk ynoptic gaugin rts of CMT1-07 ing down CMT ace soil sampli MS/MSD sam el offsite.	terial	Tracking C	omments	and Rd. I and will be ing purge , SS3-20, ".
GW Crew [H. Young & gauged in the AM on 4/ (1504); waited for recha Surface Soil Crew [T. R SS3-17, SS3-16, SS3-1 (1330) S. Fitzgerald and (1815) EA packs all equ Equipment/Material If any box below is o Were there any vehicles	C. Badman]: (093 18. (1500-1705) F arge and sampled obinson & K. Cas (3 [3 intervals at e d M. Miller leave s upment into vehic Tracking checked "Yes" s which did not dis	0-1730) Gr Purge & sar at 1705. (1 sidy]: (093 ach locatic ite. les. (1830) , provide splay prope	explanation er D.O.T num	h M. Miller, talk ynoptic gaugin rts of CMT1-0′ ing down CMT ace soil sampli MS/MSD sam el offsite.	to hon g of all I. CMT wells f ng at S ple set terial ards?	Tracking C *Yes	omments	and Rd. I and will be ing purge , SS3-20, ". <u>NA</u>
GW Crew [H. Young & gauged in the AM on 4/ (1504); waited for recha Surface Soil Crew [T. R SS3-17, SS3-16, SS3-1 (1330) S. Fitzgerald and (1815) EA packs all equ Equipment/Material If any box below is o Were there any vehicles Were there any vehicles	C. Badman]: (093 18. (1500-1705) F arge and sampled obinson & K. Cas (3 [3 intervals at e d M. Miller leave s uipment into vehic Tracking checked "Yes" s which did not dis s which were not t	0-1730) Gr Purge & sar at 1705. (1 sidy]: (093 ach locatic ite. les. (1830) , provide splay prope tarped?	explanation er D.O.T numl	h M. Miller, talk ynoptic gaugin rts of CMT1-0′ ing down CMT ace soil sampli MS/MSD sam el offsite. nunder "Ma bers and placa	to hon g of all I. CMT wells t ng at S ple set terial ards?	Tracking C *Yes * Yes	645 Marshl /Ws locked /ent dry dur 19, SS3-18 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	and Rd. d and will be ing purge , SS3-20, ". NA NA
GW Crew [H. Young & gauged in the AM on 4/ (1504); waited for recha Surface Soil Crew [T. R SS3-17, SS3-16, SS3-1 (1330) S. Fitzgerald and (1815) EA packs all equ Equipment/Material If any box below is of Were there any vehicles Were there any vehicles	C. Badman]: (093 18. (1500-1705) F arge and sampled tobinson & K. Cas 13 [3 intervals at e d M. Miller leave s uipment into vehic Tracking checked "Yes" s which did not dis s which were not to s which were not to	0-1730) Gr Purge & sar at 1705. (1 sidy]: (093 ach locatic lite. les. (1830) <u>provide</u> splay prope tarped?	explanation explanation on D.O.T num	h M. Miller, talk ynoptic gaugin rts of CMT1-0′ ing down CMT ace soil sampli MS/MSD sam el offsite. hers and placa	to hon g of all I. CMT wells t ng at S ple set terial ards?	Tracking C *Yes * Yes * Yes	645 Marshl /Ws locked /ent dry dur 19, SS3-18 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	and Rd. d and will be ing purge , SS3-20,
GW Crew [H. Young & gauged in the AM on 4/ (1504); waited for recha Surface Soil Crew [T. R SS3-17, SS3-16, SS3-1 (1330) S. Fitzgerald and (1815) EA packs all equ Equipment/Material If any box below is o Were there any vehicles Were there any vehicles Were there any vehicles	C. Badman]: (093 18. (1500-1705) F arge and sampled tobinson & K. Cas 13 [3 intervals at e d M. Miller leave s upment into vehic Tracking checked "Yes"; s which did not dis s which were not t s which were not t	0-1730) Gr Purge & sar at 1705. (1 sidy]: (093 ach locatic ite. les. (1830) , provide splay prope tarped? decontamir	explanation er D.O.T num	h M. Miller, talk ynoptic gaugin rts of CMT1-07 ing down CMT ace soil sampli MS/MSD sam el offsite. In under "Ma ibers and placa	to hon g of all I. CMT wells f ng at S ple set terial ards?	Tracking C *Yes *Yes *Yes	645 Marshl /Ws locked /ent dry dur 19, SS3-18 0, SS3-18 No No No	and Rd. d and will be ing purge , SS3-20, ". <u>NA</u> <u>NA</u> <u>NA</u>
GW Crew [H. Young & gauged in the AM on 4/ (1504); waited for recha Surface Soil Crew [T. R SS3-17, SS3-16, SS3-1 (1330) S. Fitzgerald and (1815) EA packs all equ Equipment/Material If any box below is o Were there any vehicles Were there any vehicles Were there any vehicles Were there any vehicles Were there any vehicles Were there any vehicles Were there any vehicles Were there any vehicles	C. Badman]: (093 18. (1500-1705) F arge and sampled tobinson & K. Cas 13 [3 intervals at e d M. Miller leave s upment into vehic Tracking checked "Yes" s which did not dis s which were not t s which were not t	0-1730) Gr Purge & sar at 1705. (1 sidy]: (093 ach locatic ite. les. (1830) <u>, provide</u> splay prope carped? decontamir	explanation explanation ompany	h M. Miller, talk ynoptic gaugin rts of CMT1-07 ing down CMT ace soil sampli MS/MSD sam el offsite.	terial ards?	Tracking C *Yes *Yes *Yes *Yes	645 Marshl /Ws locked /ent dry dur 19, SS3-18 19, SS3-18 No No No Tc	and Rd. d and will be ing purge , SS3-20, ". NA NA NA tal Hours
GW Crew [H. Young & gauged in the AM on 4/ (1504); waited for recha Surface Soil Crew [T. R SS3-17, SS3-16, SS3-1 (1330) S. Fitzgerald and (1815) EA packs all equ (1815) EA p	C. Badman]: (093 18. (1500-1705) F arge and sampled tobinson & K. Cas 13 [3 intervals at e d M. Miller leave s uipment into vehic Tracking checked "Yes" s which did not dis s which were not t s which were not t s which were not t	0-1730) Gr Purge & sar at 1705. (1 sidy]: (093 ach locatic ite. les. (1830) , provide splay prope arped? decontamir	explanation ompany EA	h M. Miller, talk ynoptic gaugin rts of CMT1-07 ing down CMT ace soil sampli MS/MSD sam el offsite.	terial trk site?	Tracking C *Yes *Yes *Yes *Yes *Yes *Yes	645 Marshl /Ws locked /ent dry dur 19, SS3-18 19, SS3-18 No No No To	and Rd. d and will be ing purge , SS3-20, ". <u>NA</u> <u>NA</u> <u>10.5</u> 10.5
GW Crew [H. Young & gauged in the AM on 4/ (1504); waited for recha Surface Soil Crew [T. R SS3-17, SS3-16, SS3-1 (1330) S. Fitzgerald and (1815) EA packs all equ (1815) EA packs all equ Were there any vehicles Were there any vehicles Personnel and Equi <u>Individual</u> Haley Young Cody Badma	C. Badman]: (093 18. (1500-1705) F arge and sampled cobinson & K. Cas I3 [3 intervals at e d M. Miller leave s upment into vehic Tracking checked "Yes" s which did not dis s which were not t s which were not t an n	0-1730) Gr Purge & sar at 1705. (1 sidy]: (093 ach locatic ite. les. (1830) , provide splay prope arped? decontamir Co	explanation explanation explanation er D.O.T num mated prior to EA EA EA EA EA EA EA EA	h M. Miller, talk ynoptic gaugin rts of CMT1-07 ing down CMT ace soil sampli MS/MSD sam el offsite.	terial trk site?	Tracking C *Yes *Yes *Yes *Yes *Yes *Yes	645 Marshl AWs locked vent dry dur 19, SS3-18 0 No No No To	and Rd. d and will be ing purge , SS3-20,
GW Crew [H. Young & gauged in the AM on 4/ (1504); waited for recha Surface Soil Crew [T. R SS3-17, SS3-16, SS3-1 (1330) S. Fitzgerald and (1815) EA packs all equ (1815) EA p	C. Badman]: (093 18. (1500-1705) F arge and sampled cobinson & K. Cas I3 [3 intervals at e d M. Miller leave s upment into vehic Tracking checked "Yes" s which did not dis s which were not t s which were not t a h son y	0-1730) Gr Purge & sar at 1705. (1 sidy]: (093 ach locatic ite. les. (1830) , provide splay prope tarped? decontamir	explanation er D.O.T num mated prior to eA eA eA eA eA eA eA eA eA eA eA eA eA	h M. Miller, talk ynoptic gaugin rts of CMT1-0' ing down CMT ace soil sampli MS/MSD sam el offsite.	terial trk site?	Tracking C *Yes *Yes ade entist entist entist entist	645 Marshl AWs locked yent dry dur 19, SS3-18 0 0 0 0 0 0 0 0 0 0 0 0 0	and Rd. d and will be ing purge , SS3-20,
GW Crew [H. Young & gauged in the AM on 4/ (1504); waited for recha Surface Soil Crew [T. R SS3-17, SS3-16, SS3-1 (1330) S. Fitzgerald and (1815) EA packs all equ (1815) EA packs all equ Were there any vehicles Were there any vehicles Were there any vehicles Were there any vehicles Were there any vehicles Personnel and Equi Haley Young Cody Badma Thomas Robins Katie Cassid Megan Mille	C. Badman]: (093 18. (1500-1705) F arge and sampled cobinson & K. Cas (3 [3 intervals at e d M. Miller leave s uipment into vehic s which did not dis s which were not t s which were no	0-1730) Gr Purge & sar at 1705. (1 sidy]: (093 ach locatic ite. les. (1830) , provide splay prope tarped? decontamir	explanation er D.O.T num mated prior to EA eEA eEA EA EA EA EA EA EA EA EA EA EA EA EA E	h M. Miller, talk ynoptic gaugin rts of CMT1-0' ing down CMT ace soil sampli MS/MSD sam el offsite.	terial terial ards?	Tracking C *Yes *Yes *Yes *Yes *Yes *Yes *Yes	645 Marshl /Ws locked /ent dry dur 19, SS3-18 19, SS3-18 No No No To	and Rd. and will be ing purge , SS3-20,



Equipment Description	on		Contractor/Vend	lor	Quantity	Us	ed
Horiba U-52			Pine Environmer	ntal	1	N	0
Peristaltic Pump			Pine Environmer	ital	1	N	0
Water Level Meter			Pine Environmer	ntal	2	N	0
Mini Rae 3000			Pine Environmer	ital	2	Ye	S
Snovel Hand auger			NA NA		1	<u>Ye</u>	es
			INA		1	re	15
Material Description	Imported/ Delivered	Exported off Site	Waste Profile (If Applicable	e Source o e) Facility (If	r Disposal Applicable)	Daily Loads	Daily Weight (tons)*
	to Site			·			(10113)
*On Site eagle for off site shinn	ant daliyanyt	iakat far matar	ial received				
On-Site scale for on-site shiph							
None.							
Visitors to Site							
Name			Representing	g	Entered Ex	clusion/CR	Z Zone
None.				Y	es	No	
				Y	es	No	
				Y	es	No	
				Y	es	No	
				Y	es	No	
				·	00	No	
					05 06	No	
						No	
				Y	62	NO	
				Y	es	No	
Site Representatives							
Name			Represe	nting			
Ryan Lounsberry			1645 Ma	rshland Rd. homeov	vner		



Project Schedule Comments

On schedule

Issues Pending

Could not locate MW-11 or MW-12; will bring metal detector to site tomorrow (4/18/23). Could not open MW-9, MW-2, MW-4, MW-7, MW-5, MW-10, MW-8, or PZ-1-D/S; will bring bolt cutters to site tomorrow (4/18/23).

Interaction with Public, Property Owners, Media, etc.

None.

Include (insert) figures with markups showing location of work and job progress

Site Photographs (Descriptions Below)

Comments

None.

Site Inspector(s): Haley Young

Date: 04/17/2023









MW-1





Videos of discreet operations have been provided to the DEC Project Manager to facilitate
understanding of the ongoing work.Yes \Box No \boxtimes



REMEDIAL ACTIVITIES AT PROPERTIES

1.	Does anyone at this location have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)?	Yes 🗆	No 🖂
2.	Has anyone at this location been tested and confirmed to have COVID-19?	Yes 🗆	No 🖂
3.	Were personal protective gloves, masks, and eye protection being used?	Yes 🖂	No 🗆
4.	Does the Department and its contractors have your permission to enter the property at this time?	Yes ⊠	No 🗆
5.	If Yes to 1 or 2, follow the latest NYSDOH COVID-19 guidance: https://coronavirus.health.ny.gov/home		
Commo None.	<u>ents:</u>		

On-Site Waste Storage

Drums, roll offs and piles are staged in secure areas?	Yes □	No 🗆	N/A⊠
Liners and berms have been installed if necessary to prevent cross contamination of clean areas?	Yes □	No 🗆	N/A⊠
Containers are in good condition or properly overpacked?	Yes 🗆	No 🗆	N/A⊠
Waste materials are scheduled to be properly characterized and disposed of prior to demobilization?	Yes □	No 🗆	N/A⊠
Complying with RCRA 90 day storage limitation for hazardous waste?	Yes □	No 🗆	N/A⊠
Piles are securely covered when not in use?	Yes □	No 🗆	N/A⊠
Containers are closed when not in use?	Yes □	No 🗆	N/A⊠
Staging areas should be inspected periodically and any issues addressed immediately?	Yes □	No 🗆	N/A⊠
Signage and labeling comply with RCRA requirements for all staging areas and containers?	Yes □	No 🗆	N/A⊠
If any issues noted, has Contractor been notified?	Yes 🗆	No 🗆	N/A⊠
Comments: None.			

NUISANCE CHECKLIST



Were there any community complaints related to work on this date?	Yes 🗆	No 🖂	N/A□
Were there any odors detected on this date?	Yes 🗆	No 🖂	N/A□
Was noise outside specification and/or above background on this date?	Yes 🗆	No 🖂	N/A□
Were vibration readings outside specification and/or above background on this date?	Yes □	No 🗆	N/A⊠
Any visible dust observed beyond the work perimeter on this date?	Yes 🗆	No 🖂	N/A□
Any visible contrast (turbidity) beyond engineering controls observed on this date?	Yes 🗆	No 🗆	N/A⊠
Was turbidity checked at the outfall(s)?	AM 🗆	PM 🗆	N/A⊠
Were any property owners NOT provided advance notice for work performed on this property on this date?	Yes 🗆	No 🖂	N/A□
Was the temporary fabric structure closed at the end of the day?	Yes 🗆	No 🗆	N/A⊠
Has Contractor failed to protect all foundations and structures adjacent to and adjoining the site which are affected by the excavations or other operations connected with performance of the Work?	Yes □	No 🗆	N/A⊠
If yes, has Contractor been notified?	Yes 🗆	No 🗆	N/A⊠
Comments:			

None.

RESILIENCE/GREEN REMEDIATION CHECKLIST

Is site power procured from renewable energy sources (e.g., solar, wind, geothermal, biomass and biogas)?	Yes □	No 🗆	N/A⊠
Is the Contractor employing 2007 or newer or retrofitted (BART*) diesel on-road trucks and non-road equipment?	Yes □	No 🗆	N/A⊠
Is vehicle idling adequately reduced per 6NYCRR Part 217-3?	Yes 🗆	No 🗆	N/A⊠
Have equipment operators been trained in the idling requirements of 6NYCRR Part 217-3?	Yes □	No 🗆	N/A⊠
Is BART-equipped equipment properly maintained and working?	Yes 🗆	No 🗆	N/A⊠
Is work being sequenced to avoid double handling?	Yes 🗆	No 🗆	N/A⊠
Is there an onsite recycling program for CONTRACTOR-generated wastes and is it complied with?	Yes □	No 🗆	N/A⊠
Are office trailer heating and cooling systems maintained at efficient set points, have programable thermostats been installed?	Yes □	No 🗆	N/A⊠
Are products and materials used in performance of the work appropriately certified (e.g., LEED, Energy Star, Sustainable Forestry Initiative®, etc.)?	Yes □	No 🗆	N/A⊠
Are resiliency features included in the design, or completed remedy properly installed and/or maintained (flood control, storm water controls, erosion measures, etc.)?	Yes □	No 🗆	N/A⊠
Are green remediation elements included in the design, or completed remedy properly installed and/or maintained (e.g., porous pavement, geothermal, variable speed drives, native plantings, natural stream bank restoration, etc.)?	Yes 🗆	No 🗆	N/A⊠
Has Contractor been notified of any deficiencies?	Yes 🗆	No 🗆	N/A



Comments: None.

* BART – Best Available Retrofit Technology



Department of Environmental Conservation

NYSDEC Division of Environme	Environmental Remediation Environmental Remediation Environmental Conservation Contract No. D009806-31 Department of Environmental Conservation Department of Environmental Conservation DEC Insp. – N/A DEC PM – Stephanie Fitzgerald)6-31 :gerald				
	Contractor Supt. – N/A								
Concerct Description	Weather Conditions								ller
General Description	Overcast	AM	Ove						
Wind	12 mnh W	AM		nh W	PM	_ Eng	gineer insp	. – N/A	
Health & Safety	12 mpi W	7 (1)	1011		1 101				
If any box below is o	checked "Yes	s". provide	explanatio	on under '	'Health	& Sa	fetv Comr	nents".	
Were there any changes	to the Health 8	Safety Plan	l?			*'	Yes	No	NA
Were there any exceeda	nces of the per	imeter air mo	onitorina repo	orted on this	s date?	*'	Yes	No	NA
Were there any nuisance	e issues reporte	d/observed	on this date?)		*'	Yes	No	NA
Health & Safety Com	monte								<u></u>
Cofety tenior ticks	intento								
Salety topic: ticks.									
Summary of Work P	erformed	Arrived at	t site: 07	730		Depar	ted Site:	1645	
Surface Soil Crew [T. Robinson & K. Cassidy]: (0800-1430) Surface soil sampling at SS2-7, SS2-14, SS3-18, SS2-5, SS2-3, SS2-6, SS2-1, SS2-2, SS3-11, SS2-10, and SS2-9. [RB-02, FD-02, & MS/MSD sample set taken]. (1445) EA begins packing coolers with samples and ice and completing groundwater and soil sample chains of custody. (1645) EA offsite to prepare sample coolers for shipping.									
Were there any vehicles	which did not d	lisplay prope	r D.O.T num	bers and pl	acards?	? *Yes No NA			NA
Were there any vehicles	which were not	t tarped?		<u> </u>	* Yes No			No	NA
Were there any vehicles	which were not	t decontamin	ated prior to	exiting the	ng the work site? * Yes No <u>NA</u>			NA	
Personnel and Equir	oment					-			
Individual		Co	ompany			Trade		Total	Hours
Haley Young			EA		Scientist			9	
Cody Badmar	1	EA Scie		Scientist		9			
I homas Robins Katie Cassidu	on		EA Scie			Scientist))
Kalle Cassidy EA Scientist 9									
Equipment Descri	ption		Contracto	or/Vendor			Quantity	Us	ed
Horiba U-52		Pine Environmental			1	Ye	es		
Peristaltic Pump		Pine Environmental				1	Yes		
Mini Rae 3000		Pine Environmental Pine Environmental Pine Environmental				2	Yes		
Shovel			N	A		<u>1</u> Yes			es
Hand auger			N	A			1	Y	es
Material Description Imported Delivered to Site		Exported off Site	Waste (If App	Profile blicable)	So Fac	ource o cility (If	or Disposal Applicable)	Daily Loads	Daily Weight (tons)*
*On-Site scale for off-site sl	nipment, deliverv	ticket for mate	rial received		I			I	1



Equipment/Material Tracking Comments:						
None.						
Visitors to Site						
Name	Re	presenting	Entered Ex	clusion/CRZ Zone		
None.			Yes	No		
Site Representatives			Yes	NO		
Name		Representing				
Project Schodule Commente						
Project Schedule Comments						
On schedule						
Issues Pending						
None.						
Interaction with Public, Property Owners, Media, etc.						
None.						



Include (insert) figures with markups showing location of work and job progress

Site Photographs (Descriptions Below)				
Comments				
None.				
Site Inspector(s): Haley Young	Date: 04/18/2023			
Videos of discreet operations have been provided to the DEC Project Manager to facilitate				

understanding of the ongoing work. Yes \Box


REMEDIAL ACTIVITIES AT PROPERTIES

1.	Does anyone at this location have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)?	Yes 🗆	No 🖂
2.	Has anyone at this location been tested and confirmed to have COVID-19?	Yes 🗆	No 🖂
3.	Were personal protective gloves, masks, and eye protection being used?	Yes 🖂	No 🗆
4.	Does the Department and its contractors have your permission to enter the property at this time?	Yes ⊠	No 🗆
5.	If Yes to 1 or 2, follow the latest NYSDOH COVID-19 guidance: https://coronavirus.health.ny.gov/home		
Comme None.	<u>ents:</u>		

On-Site Waste Storage

Drums, roll offs and piles are staged in secure areas?	Yes 🖂	No 🗆	N/A□
Liners and berms have been installed if necessary to prevent cross contamination of clean areas?	Yes □	No 🗆	N/A⊠
Containers are in good condition or properly overpacked?	Yes 🗆	No 🗆	N/A⊠
Waste materials are scheduled to be properly characterized and disposed of prior to demobilization?	Yes □	No 🗆	N/A⊠
Complying with RCRA 90 day storage limitation for hazardous waste?	Yes 🗆	No 🗆	N/A⊠
Piles are securely covered when not in use?	Yes 🗆	No 🗆	N/A⊠
Containers are closed when not in use?	Yes □	No 🗆	N/A⊠
Staging areas should be inspected periodically and any issues addressed immediately?	Yes □	No 🗆	N/A⊠
Signage and labeling comply with RCRA requirements for all staging areas and containers?	Yes □	No 🗆	N/A⊠
If any issues noted, has Contractor been notified?	Yes 🗆	No 🗆	N/A⊠
O a manufacture of the second s			

Comments:

Carbon bucket for purge water treatment did not arrive from Pine; currently missing in the mail. Purge water being stored in buckets, will get drum to site tomorrow.



DAILY INSPECTION REPORT - No. 02 (Owego Heat Treat) Site No. 754011

NUISANCE CHECKLIST

Were there any community complaints related to work on this date?	Yes □	No 🖂	N/A□
Were there any odors detected on this date?	Yes 🗆	No 🗆	N/A⊠
Was noise outside specification and/or above background on this date?	Yes 🗆	No 🗆	N/A⊠
Were vibration readings outside specification and/or above background on this date?	Yes 🗆	No 🗆	N/A⊠
Any visible dust observed beyond the work perimeter on this date?	Yes □	No 🗆	N/A⊠
Any visible contrast (turbidity) beyond engineering controls observed on this date?	Yes 🗆	No 🗆	N/A⊠
Was turbidity checked at the outfall(s)?	AM 🗆	PM 🗆	N/A⊠
Were any property owners NOT provided advance notice for work performed on this property on this date?	Yes 🗆	No 🗆	N/A⊠
Was the temporary fabric structure closed at the end of the day?	Yes 🗆	No 🗆	N/A□
Has Contractor failed to protect all foundations and structures adjacent to and adjoining the site which are affected by the excavations or other operations connected with performance of the Work?	Yes □	No 🗆	N/A⊠
If yes, has Contractor been notified?	Yes 🗆	No 🗆	N/A⊠
Comments:			
None.			

RESILIENCE/GREEN REMEDIATION CHECKLIST

Is site power procured from renewable energy sources (e.g., solar, wind, geothermal, biomass and biogas)?	Yes □	No 🗆	N/A⊠
Is the Contractor employing 2007 or newer or retrofitted (BART*) diesel on-road trucks and non-road equipment?	Yes □	No 🗆	N/A⊠
Is vehicle idling adequately reduced per 6NYCRR Part 217-3?	Yes 🗆	No 🗆	N/A⊠
Have equipment operators been trained in the idling requirements of 6NYCRR Part 217-3?	Yes □	No 🗆	N/A⊠
Is BART-equipped equipment properly maintained and working?	Yes 🗆	No 🗆	N/A⊠
Is work being sequenced to avoid double handling?	Yes 🗆	No 🗆	N/A⊠
Is there an onsite recycling program for CONTRACTOR-generated wastes and is it complied with?	Yes 🗆	No 🗆	N/A⊠
Are office trailer heating and cooling systems maintained at efficient set points, have programable thermostats been installed?	Yes □	No 🗆	N/A⊠
Are products and materials used in performance of the work appropriately certified (e.g., LEED, Energy Star, Sustainable Forestry Initiative®, etc.)?	Yes □	No 🗆	N/A⊠
Are resiliency features included in the design, or completed remedy properly installed and/or maintained (flood control, storm water controls, erosion measures, etc.)?	Yes □	No 🗆	N/A⊠
Are green remediation elements included in the design, or completed remedy properly installed and/or maintained (e.g., porous pavement, geothermal, variable speed drives, native plantings, natural stream bank restoration, etc.)?	Yes 🗆	No 🗆	N/A⊠
Has Contractor been notified of any deficiencies?	Yes 🗆	No 🗆	N/A⊠



Comments: None.

* BART – Best Available Retrofit Technology



NYSDEC Division of Environmental Remediation					Contract No. D009806-31 DEC Insp. – N/A DEC PM – Stephanie Fitzgerald					
Site Location: Form	Contractor Sunt N/A									
		Contractor Supt. – N/A								
General Description Cloudy AM Cloudy PM Engineer PM – Megan Miller										
Temperature	41 F	AM	46 F		PM	Engineer Ins	p. – N/A			
Wind	6 mph SW	AM	6 mph S	SE .	PM	-				
Health & Safety If any box below is checked "Yes", provide explanation under "Health & Safety Comments".										
Were there any change	s to the Health &	Safety Plar	n?			*Yes	No	NA		
Were there any exceed	ances of the peri	meter air m	onitoring reporte	d on this d	ate?	*Yes	No	NA		
Were there any nuisand	e issues reported	d/observed	on this date?			*Yes	No	NA		
Health & Safety Cor	nments									
Safety Topic: bugs, sun	, slips, trips & fall	ls.								
Summary of Work P	erformed	Arrived a	t site: 0800)	D	eparted Site:	1830	1		
 (0900) H. Young back onsite. GW Crew [H. Young & C. Badman]: (0900-1730) Purge & sample MW-2, MW-4, MW-8, MW-9, MW-10, PZ-1S & PZ-1D. Purge and sample all 4 Ports of CMT2-01 and 1 Port of CMT2-03. (1300) H. Bedell onsite to drop off drum. Mob offsite afterwards. Surface Soil Crew [T. Robinson & K. Cassidy]: (0800-1700) Surface soil sampling at [FD-03 & MS/MSD sample set taken]. (1740) Rinse Blank taken. (1750) EA packs all equipment into vehicles. (1800) EA personnel offsite. 										
Equipment/Material Tracking If any box below is checked "Yes", provide explanation under "Material Tracking Comments". Were there any vehicles which did not display proper D.O.T numbers and placards? *Yes No NA										
Were there any vehicles	s which were not	tarped?	4 1	6		* Yes	No			
Personnel and Foui	s wnich were not	aecontamir	nated prior to exi	ting the wo	ork site'	Yes	NO	NA		
	p		ompany		т.	ado	То	tal Hours		
Haley Young	r		FA		Sci	entist		11		
Cody Badma	n l		EA		Sci	entist		11		
Thomas Robins	son		EA		entist		11			
Katie Cassid	у		EA		Sci	entist		11		
Equipment Desc	ription		Contractor/V	endor		Quantity	·	Used		
Horiba U-52			Pine Environ	nental		2		Yes		
Peristaltic Pur	np		Pine Environ	nental		2		Yes		



DAILY INSPECTION REPORT - No. 03 (Owego Heat Treat) Site No. 754011

Water Level Meter		Pine Environmental				2 Yes		S
RKI GX 6000		Pine Environmental				2	Yes	
Shovel		NA				1	Yes	
Hand auger		NA				1	Yes	
Material Description	Imported/ Delivered to Site	Exported off Site	W (If	aste Profile Applicable)	Source or Disposal Facility (If Applicable)		Daily Loads	Daily Weight (tons)*
*On-Site scale for off-site shipn	pent delivery t	ticket for mater	ial racaiv	(ed				
			Ial lecen	eu				
None.								
Visitors to Site Name			Re	presenting		Entered Exc	clusion/CR	Z Zone
None					Y	05	No	
						00	No	
						53		
					Ŷ	es	NO	
					Y	es	No	
					Y	es	No	
					Y	es	No	
					Y	es	No	
					Y	es	No	
							No	
Site Representatives								
Name				Representing				



Project Schedule Comments
Un schedule
Issues Pending
None.
Interaction with Public, Property Owners, Media, etc.
None.
Include (insert) figures with markups showing location of work and job progress

Site Photographs (Descriptions Below)

Comments

None.

Site Inspector(s): Haley Young

Date: 04/19/2023



DAILY INSPECTION REPORT - No. 03 (Owego Heat Treat) Site No. 754011

Videos of discreet operations have been provided to the DEC Project Manager to facilitate understanding of the ongoing work. Yes \square No \boxtimes

REMEDIAL ACTIVITIES AT PROPERTIES

1.	Does anyone at this location have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)?	Yes 🗆	No 🖂
2.	Has anyone at this location been tested and confirmed to have COVID-19?	Yes 🗆	No 🖂
3.	Were personal protective gloves, masks, and eye protection being used?	Yes 🖂	No 🗆
4.	Does the Department and its contractors have your permission to enter the property at this time?	Yes 🛛	No 🗆
5.	If Yes to 1 or 2, follow the latest NYSDOH COVID-19 guidance: https://coronavirus.health.ny.gov/home		
Commo None.	ents:		

On-Site Waste Storage

Drums, roll offs and piles are staged in secure areas?	Yes 🖂	No 🗆	N/A□
Liners and berms have been installed if necessary to prevent cross contamination of clean areas?	Yes □	No 🗆	N/A⊠
Containers are in good condition or properly overpacked?	Yes □	No 🗆	N/A⊠
Waste materials are scheduled to be properly characterized and disposed of prior to demobilization?	Yes □	No 🗆	N/A⊠
Complying with RCRA 90 day storage limitation for hazardous waste?	Yes 🗆	No 🗆	N/A⊠
Piles are securely covered when not in use?	Yes □	No 🗆	N/A⊠
Containers are closed when not in use?	Yes □	No 🗆	N/A⊠
Staging areas should be inspected periodically and any issues addressed immediately?	Yes □	No 🗆	N/A⊠
Signage and labeling comply with RCRA requirements for all staging areas and containers?	Yes □	No 🗆	N/A⊠
If any issues noted, has Contractor been notified?	Yes 🗆	No 🗆	N/A⊠
Comments:			

None.



DAILY INSPECTION REPORT - No. 03 (Owego Heat Treat) Site No. 754011

NUISANCE CHECKLIST

Were there any community complaints related to work on this date?	$Yes \ \Box$	No 🖂	N/A□
Were there any odors detected on this date?	Yes 🗆	No 🖂	N/A□
Was noise outside specification and/or above background on this date?	Yes 🗆	No 🖂	N/A□
Were vibration readings outside specification and/or above background on this date?	Yes 🗆	No 🗆	N/A⊠
Any visible dust observed beyond the work perimeter on this date?	Yes 🗆	No 🖂	N/A□
Any visible contrast (turbidity) beyond engineering controls observed on this date?	Yes 🗆	No 🗆	N/A⊠
Was turbidity checked at the outfall(s)?	AM 🗆	PM 🗆	N/A⊠
Were any property owners NOT provided advance notice for work performed on this property on this date?	Yes 🗆	No 🖂	N/A□
Was the temporary fabric structure closed at the end of the day?	Yes 🗆	No 🗆	N/A⊠
Has Contractor failed to protect all foundations and structures adjacent to and adjoining the site which are affected by the excavations or other operations connected with performance of the Work?	Yes □	No 🗆	N/A⊠
If yes, has Contractor been notified?	Yes 🗆	No 🗆	N/A⊠
<u>Comments:</u> None.			

RESILIENCE/GREEN REMEDIATION CHECKLIST

Is site power procured from renewable energy sources (e.g., solar, wind, geothermal, biomass and biogas)?	Yes 🗆	No 🗆	N/A⊠
Is the Contractor employing 2007 or newer or retrofitted (BART*) diesel on-road trucks and non-road equipment?	Yes □	No 🗆	N/A⊠
Is vehicle idling adequately reduced per 6NYCRR Part 217-3?	Yes 🗆	No 🗆	N/A⊠
Have equipment operators been trained in the idling requirements of 6NYCRR Part 217-3?	Yes □	No 🗆	N/A⊠
Is BART-equipped equipment properly maintained and working?	Yes 🗆	No 🗆	N/A⊠
Is work being sequenced to avoid double handling?	Yes 🗆	No 🗆	N/A⊠
Is there an onsite recycling program for CONTRACTOR-generated wastes and is it complied with?	Yes □	No 🗆	N/A⊠
Are office trailer heating and cooling systems maintained at efficient set points, have programable thermostats been installed?	Yes 🗆	No 🗆	N/A⊠
Are products and materials used in performance of the work appropriately certified (e.g., LEED, Energy Star, Sustainable Forestry Initiative®, etc.)?	Yes 🗆	No 🗆	N/A⊠
Are resiliency features included in the design, or completed remedy properly installed and/or maintained (flood control, storm water controls, erosion measures, etc.)?	Yes □	No 🗆	N/A⊠
Are green remediation elements included in the design, or completed remedy properly installed and/or maintained (e.g., porous pavement, geothermal, variable speed drives, native plantings, natural stream bank restoration, etc.)?	Yes 🗆	No 🗆	N/A⊠
Has Contractor been notified of any deficiencies?	Yes □	No 🗆	N/A⊠



Comments: None.

* BART – Best Available Retrofit Technology



Department of Environmental Conservation

NYSDEC Division of Environme	ental Remediatio	on 2	NEW YORK STATE OF OPPORTUNITY Conservation		Contract No. D009806-31 DEC Insp. – N/A DEC PM – Stephanie Fitzgerald				
Site Location: Form	er Owego Heat	Treat				Contra	actor Su	nt = N/A	-9
		F uerie		Magan					
General Description	Cloudy	AM	Cloudy		PM	Engin	eer Pivi -	· wegan w	liller
Temperature	43 F	AM	55 F		PM	Engin	eer Insp	. – N/A	
Wind	3 mpn E	AM	Calm		РМ				
Health & Safety If any box below is checked "Yes", provide explanation under "Health & Safety Comments".									
Were there any change	s to the Health &	Safety Plar	ו?			*Yes	s	<u>No</u>	NA
Were there any exceed	ances of the perin	neter air m	onitoring reported	d on this d	ate?	*Yes	s	No	<u>NA</u>
Were there any nuisand	ce issues reported	l/observed	on this date?			*Yes	s	No	NA
Health & Safety Cor	nments								
Safety Topic: ticks, sun	, slips, trips & falls	5.							
Summary of Work P	Performed	Arrived a	t site: 0800		De	eparteo	d Site:	1830	
 Recting. (0745) T. Robinson & K. Cassidy begin surface soil sampling. H. Foung and C. Badman to begin purging remaining monitoring wells. Surface Soil Crew [T. Robinson & K. Cassidy]: (0755-1055) Surface soil sampling at SS3-6, SS3-15, and SS3-14 [FD-04 & MS/MSD sample set taken; rinsate blank taken]. GW Crew [H. Young & C. Badman]: (0843-0845) Sample groundwater at CMT2-03 Port 5 and CMT2-06 Port 6. (0910) Run out of sample bottles for GW – call PM (M. Miller) – Plan to sample following day after mobilizing to Syracuse later today. (1100) Begin packing coolers and writing chains of custody. T. Robinson & K. Cassidy to deliver sample coolers to Syracuse Pace lab. (1230) EA offsite. 									
Were there any vehicles	s which did not dis	splay prope	er D.O.T numbers	and place	ards?	*Yes	S	No	NA
Were there any vehicle	s which were not t	arped?				* Ye	s	No	<u>NA</u>
Were there any vehicles	s which were not o	decontamir	nated prior to exit	ing the wo	rk site?	* Ye	s	No	<u>NA</u>
Personnel and Equi	pment								
Individual		Co	ompany		Tra	ade		Tota	Hours
Haley Young	9		EA		Scie	entist		Į	5.5
Cody Badma	in		EA	_	Scie	entist			<u>5.5</u>
I nomas Robin Katie Cassid	son				Scie	entist			<u>5.5</u>
Natic Oddsta	y				0010	ShtiSt		Ň	5.0
Equipment Description Contractor/Vendor					(Quantity	U	sed	
Horiba U-52 Pine Environmental						2	Yes		
Peristaltic Pump Pine Environmental						2	Yes		
Water Level Meter Pine Environmental						2	Yes		
KKI GX 600	U			iental			2	Yes	
Hand auger			NA NA				1		(es



DAILY INSPECTION REPORT - No. 04 (Owego Heat Treat) Site No. 754011

Material Description	Imported/ Delivered to Site	Exported off Site	W (If	/aste Profile Applicable)	Sourc Facility	Source or Disposal Facility (If Applicable)		Daily Weight (tons)*
*On-Site scale for off-site shipm	nent, delivery t	icket for mater	ial receiv	ved				
Equipment/Material Track	ing Comme	nts:						
None.								
Visitors to Site								
VISILOIS LO SILE								
Name		Representing			Entered Exclusion/CRZ Zone			
None.						Yes No		
						Yes	No	
						Yes	No	
						Yes	No	
						Yes	No	
						Yes	No	
						Vos	No	
						Vee	No	
						res	NO	
						res	NO	
Site Representatives								
Name				Representing	g			
Project Schedule Com	nents			<u>l</u>				
Groundwater sampling w	ill resume a	ind be comp	pleted t	omorrow, 4/2	1/23 due to	running out of	sample	bottles.



Issues Pending

None.

Interaction with Public, Property Owners, Media, etc.

None.

Include (insert) figures with markups showing location of work and job progress

Site Photographs (Descriptions Below)

Comments	
None	
Site Inspector(s): Haley Young	Date: 04/20/2023

Videos of discreet operations have been provided to the DEC Project Manager to facilitate understanding of the ongoing work. Yes \Box No \boxtimes

REMEDIAL ACTIVITIES AT PROPERTIES

 Does anyone at this location have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)? 	Yes 🗆	No 🖂
2. Has anyone at this location been tested and confirmed to have COVID-19?	Yes 🗆	No 🖂
3. Were personal protective gloves, masks, and eye protection being used?	Yes 🖂	No 🗆



DAILY INSPECTION REPORT - No. 04 (Owego Heat Treat) Site No. 754011

4.	Does the Department and its contractors have your permission to enter the property at this time?	Yes ⊠	No 🗆
5.	If Yes to 1 or 2, follow the latest NYSDOH COVID-19 guidance: https://coronavirus.health.ny.gov/home		
Common None.	ents:		

On-Site Waste Storage

Drums, roll offs and piles are staged in secure areas?	Yes ⊠	No 🗆	N/A□
Liners and berms have been installed if necessary to prevent cross contamination of clean areas?	Yes □	No 🗆	N/A⊠
Containers are in good condition or properly overpacked?	Yes 🗆	No 🗆	N/A⊠
Waste materials are scheduled to be properly characterized and disposed of prior to demobilization?	Yes □	No 🗆	N/A⊠
Complying with RCRA 90 day storage limitation for hazardous waste?	Yes 🗆	No 🗆	N/A⊠
Piles are securely covered when not in use?	Yes □	No 🗆	N/A⊠
Containers are closed when not in use?	Yes □	No 🗆	N/A⊠
Staging areas should be inspected periodically and any issues addressed immediately?	Yes □	No 🗆	N/A⊠
Signage and labeling comply with RCRA requirements for all staging areas and containers?	Yes □	No 🗆	N/A⊠
If any issues noted, has Contractor been notified?	Yes 🗆	No 🗆	N/A⊠
Comments:			

None.

NUISANCE CHECKLIST

Were there any community complaints related to work on this date?	Yes 🗆	No 🖂	N/A□
Were there any odors detected on this date?	Yes 🗆	No 🖂	N/A□
Was noise outside specification and/or above background on this date?	Yes 🗆	No 🖂	N/A□
Were vibration readings outside specification and/or above background on this date?	Yes 🗆	No 🗆	N/A⊠
Any visible dust observed beyond the work perimeter on this date?	Yes 🗆	No 🖂	N/A□



DAILY INSPECTION REPORT - No. 04 (Owego Heat Treat) Site No. 754011

Yes 🗆	No 🗆	N/A⊠
AM	PM 🗆	N/A⊠
Yes 🗆	No 🖂	N/A□
Yes 🗆	No 🗆	N/A⊠
Yes 🗆	No 🗆	N/A⊠
Yes 🗆	No 🗆	N/A⊠
	Yes AM Yes	Yes No AM PM Yes No Yes No Yes No Yes No Yes No Yes No

RESILIENCE/GREEN REMEDIATION CHECKLIST

Is site power procured from renewable energy sources (e.g., solar, wind, geothermal, biomass and biogas)?	Yes 🗆	No 🗆	N/A⊠
Is the Contractor employing 2007 or newer or retrofitted (BART*) diesel on-road trucks and non-road equipment?	Yes 🗆	No 🗆	N/A⊠
Is vehicle idling adequately reduced per 6NYCRR Part 217-3?	Yes 🗆	No 🗆	N/A⊠
Have equipment operators been trained in the idling requirements of 6NYCRR Part 217-3?	Yes □	No 🗆	N/A⊠
Is BART-equipped equipment properly maintained and working?	Yes □	No 🗆	N/A⊠
Is work being sequenced to avoid double handling?	Yes □	No 🗆	N/A⊠
Is there an onsite recycling program for CONTRACTOR-generated wastes and is it complied with?	Yes □	No 🗆	N/A⊠
Are office trailer heating and cooling systems maintained at efficient set points, have programable thermostats been installed?	Yes 🗆	No 🗆	N/A⊠
Are products and materials used in performance of the work appropriately certified (e.g., LEED, Energy Star, Sustainable Forestry Initiative®, etc.)?	Yes 🗆	No 🗆	N/A⊠
Are resiliency features included in the design, or completed remedy properly installed and/or maintained (flood control, storm water controls, erosion measures, etc.)?	Yes 🗆	No 🗆	N/A⊠
Are green remediation elements included in the design, or completed remedy properly installed and/or maintained (e.g., porous pavement, geothermal, variable speed drives, native plantings, natural stream bank restoration, etc.)?	Yes □	No 🗆	N/A⊠
Has Contractor been notified of any deficiencies?	Yes 🗆	No 🗆	N/A⊠
Comments: None.			

* BART – Best Available Retrofit Technology



NYSDEC Division of Environmer	NYSDEC Division of Environmental Remediation			K Departm Environn Conserva	ent of nental ation	Contract No. D009806-31 DEC Insp. – N/A DEC RM – Stophapia Eitzgorald			
Site Location: Forme	r Owego Heat	Treat				DEC PM – Stephanie Fitzgerald			
	Weather Conditions								
General Description	Sunny	AM	Sun	ny	PM	Engineer P	M – Megan	Miller	
Temperature	70 F	AM	87	F	PM	Engineer In	sp. – H. Be	edell	
Wind	Calm	AM	Cal	m	PM	5	•		
Health & Safety If any box below is c	hecked "Yes"	', provide	explanatior	under "He	ealth 8	k Safety Co	mments".		
Were there any changes	to the Health &	Safety Plan	?			*Yes	<u>No</u>	NA	
Were there any exceedar	nces of the perin	neter air mo	nitoring repo	ted on this d	ate?	*Yes	No	NA	
Were there any nuisance	issues reported	/observed c	on this date?			*Yes	No	NA	
Health & Safety Com	ments						•		
Safety Topic: bugs/ticks,	sun, slips, trips a	& falls, site o	owners (dog/o	children) on p	property	<i>I</i> .			
Summary of Work Pe	erformed	Arrived at	site: 07	30	D	eparted Site	: 1715		
<pre>(0100) EX [E. Rohton, O. Badman, O. Canj et mains [Fit Fredgan, Fit Fredgan, F</pre>									
Equipment/Material Tracking If any box below is checked "Yes", provide explanation under "Material Tracking Comments".									
Were there any vehicles	Were there any vehicles which were not terred?						No	". NA	
Were there any vehicles	which were not t	splay proper arped?	D.O.T numb	ers and placa	ards?	* Yes	No No	". <u>NA</u> NA	
Personnel and Equipment							No No No	". <u>NA</u> <u>NA</u>	
Personnel and Equip	which were not t which were not o ment	splay proper arped? decontamina	D.O.T numb	ers and placa xiting the wo	rk site?	* Yes * Yes	No No No	". <u>NA</u> <u>NA</u> NA	
Personnel and Equip	which were not t which were not o ment	splay proper arped? decontamina	D.O.T numb ated prior to e mpany	ers and placa xiting the wo	ork site? Tr	* Yes * Yes rade	No No No To	". <u>NA</u> <u>NA</u> tal Hours	
Personnel and Equip Individual Cody Badman	which were not t which were not o ment	splay proper arped? decontamina Co	D.O.T numb ated prior to e mpany EA	ers and placa	rk site? rk site? Tr Sci	* Yes * Yes rade entist	No No No To	". <u>NA</u> <u>NA</u> tal Hours 9.75	
Personnel and Equip Individual Cody Badman Jack Gill	which were not t which were not o ment	splay proper arped? decontamina Co	D.O.T numb ated prior to e mpany EA EA	ers and placa	rk site? rk site? Tr Sci	* Yes * Yes rade entist entist	No No No To	". <u>NA</u> <u>NA</u> tal Hours 9.75 9.75	
Personnel and Equip Individual Cody Badman Jack Gill Edward Ashton	which were not t which were not c ment	splay proper arped? decontamina Co	D.O.T numb ated prior to e mpany EA EA EA EA	ers and placa	rk site? rk site? Tr Sci Sci	* Yes * Yes ade entist entist entist entist	No No No To	NA NA NA NA 9.75 9.75 9.75	
Personnel and Equip Individual Cody Badman Jack Gill Edward Ashton Hannah Bedell Rick Reagan	which were not t which were not c ment	splay proper arped? decontamina Co	D.O.T numb ated prior to e mpany EA EA EA EA Adrtix	ers and placa	rk site? rk site? Tr Sci Sci Geo Eng	* Yes * Yes * Yes * de entist entist ologist gineer riller	No No No To	". <u>NA</u> <u>NA</u> <u>NA</u> tal Hours 9.75 9.75 9.75 9.75 9.75 9.75	
Personnel and Equip Individual Cody Badman Jack Gill Edward Ashton Hannah Bedell Rick Reagan Nick Auder	which were not t which were not c ment	splay proper arped? decontamina Co	D.O.T numb ated prior to e mpany EA EA EA EA Aatrix Matrix	ers and placa	rk site? rk site? Sci Sci Gec Eng Di	* Yes * Yes ade entist entist entist ologist jineer riller	No No No To	NA NA NA NA 1 0.75 9.75 9.50 9 9.75 9.75 9.75 9.75 9.75 9.75 9.75 9.75	



DAILY INSPECTION REPORT - No. 01 (Owego Heat Treat) Site No. 754011

Equipment Description Contra		Contrac	ractor/Vendor Quantity		Us	Used		
Mini Rae 3000		Pine Environmental			1	Yes		
Horiba U-52 Pine			Pine Env	<u>/ironmental</u>	1 Yes			s
				nonmental		1	Te	5
Material Description	Imported/ Delivered	Exported off Site	Wast (If Ap	te Profile	Source or Facility (If J	r Disposal Applicable)	Daily Loads	Daily Weight
	to Site		(,piloubio,		FF,		(tons)*
*On-Site scale for off-site shipment, delivery ticket for material received								
Equipment/Material Track	ing Comme	nts:						
None.								
Visitors to Site								
Name			Repre	esenting	E	Entered Exc	clusion/CR	Z Zone
None			· ·		Y	25	No	
					Y		No	
					v.	00	No	
							No	
						85	NO	
					Ye	85	NO	
					Ye	es	NO	
					Ye	es	No	
					Ye	es	No	
					Ye	es	No	
Site Representatives								
Name			R	epresenting				
Ryan Lounsberry			1	645 Marshlan	d Rd. homeow	/ner		
· · · ·								



Pro	ject	Schedule	Comments
-----	------	----------	----------

On schedule

Issues Pending

Interaction with Public, Property Owners, Media, etc.

None.

Include (insert) figures with markups showing location of work and job progress

Site Photographs (Descriptions Below)

Comments		
754011-SVG-03-060123 Start: 1310 Pressure: -29 "Hg End: 1413 Pressure: -3 "Hg	754011-SVG-06-060123 Start: 1505 Pressure: -28.5 "Hg End: 1602 Pressure: -6.5 "Hg	754011-SVG-FD-060123 Start: 1526 Pressure: -12 "Hg End: 1527 Pressure: -5 "Hg
754011-SVG-02-060123 Start: 1328 Pressure: -28 "Hg End: 1419 Pressure: -5 "Hg 754011-SVG-01-060123 Start: 1350 Pressure: -27.5 "Hg End: 1450 Pressure: -5.5 "Hg	754011-SVG-04-060123 Start: 1518 Pressure: -29 "Hg End: 1618 Pressure: -7 "Hg 754011-SVG-05-060123 Start: 1526 Pressure: -12 "Hg End: 1527 Pressure: -5 "Hg	Note: SVG-05 & SVG-FD had issue with duplicate tee so it ended up being more of a grab sample since the total time was between 1-2 minutes.
Site Inspector(s): Cody Bad	man	Date: 06/01/2023



DAILY INSPECTION REPORT - No. 01 (Owego Heat Treat) Site No. 754011

Videos of discreet operations have been provided to the DEC Project Manager to facilitate understanding of the ongoing work. Yes \Box No \boxtimes

REMEDIAL ACTIVITIES AT PROPERTIES

1.	Does anyone at this location have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)?	Yes □	No 🖂
2.	Has anyone at this location been tested and confirmed to have COVID-19?	Yes □	No 🖂
3.	Were personal protective gloves, masks, and eye protection being used?	Yes 🖂	No 🗆
4.	Does the Department and its contractors have your permission to enter the property at this time?	Yes ⊠	No 🗆
5.	If Yes to 1 or 2, follow the latest NYSDOH COVID-19 guidance: https://coronavirus.health.ny.gov/home		
Common None.	<u>ents:</u>		

On-Site Waste Storage

Drums, roll offs and piles are staged in secure areas?	Yes □	No 🗆	N/A⊠
Liners and berms have been installed if necessary to prevent cross contamination of clean areas?	Yes □	No 🗆	N/A⊠
Containers are in good condition or properly overpacked?	Yes □	No 🗆	N/A⊠
Waste materials are scheduled to be properly characterized and disposed of prior to demobilization?	Yes □	No 🗆	N/A⊠
Complying with RCRA 90 day storage limitation for hazardous waste?	Yes 🗆	No 🗆	N/A⊠
Piles are securely covered when not in use?	Yes 🗆	No 🗆	N/A⊠
Containers are closed when not in use?	Yes □	No 🗆	N/A⊠
Staging areas should be inspected periodically and any issues addressed immediately?	Yes □	No 🗆	N/A⊠
Signage and labeling comply with RCRA requirements for all staging areas and containers?	Yes □	No 🗆	N/A⊠
If any issues noted, has Contractor been notified?	Yes □	No 🗆	N/A⊠
Comments:			

None.



DAILY INSPECTION REPORT - No. 01 (Owego Heat Treat) Site No. 754011

NUISANCE CHECKLIST

Were there any community complaints related to work on this date?	Yes □	No 🖂	N/A□
Were there any odors detected on this date?	Yes 🗆	No 🖂	N/A□
Was noise outside specification and/or above background on this date?	Yes 🗆	No 🖂	N/A□
Were vibration readings outside specification and/or above background on this date?	Yes 🗆	No 🗆	N/A⊠
Any visible dust observed beyond the work perimeter on this date?	Yes □	No 🖂	N/A□
Any visible contrast (turbidity) beyond engineering controls observed on this date?	Yes 🗆	No 🗆	N/A⊠
Was turbidity checked at the outfall(s)?	AM 🗆	PM 🗆	N/A⊠
Were any property owners NOT provided advance notice for work performed on this property on this date?	Yes 🗆	No 🖂	N/A□
Was the temporary fabric structure closed at the end of the day?	Yes 🗆	No 🗆	N/A⊠
Has Contractor failed to protect all foundations and structures adjacent to and adjoining the site which are affected by the excavations or other operations connected with performance of the Work?	Yes □	No 🗆	N/A⊠
If yes, has Contractor been notified?	Yes □	No 🗆	N/A⊠
<u>Comments:</u> None.			

RESILIENCE/GREEN REMEDIATION CHECKLIST

Is site power procured from renewable energy sources (e.g., solar, wind, geothermal, biomass and biogas)?	Yes 🗆	No 🗆	N/A⊠
Is the Contractor employing 2007 or newer or retrofitted (BART*) diesel on-road trucks and non-road equipment?	Yes 🗆	No 🗆	N/A⊠
Is vehicle idling adequately reduced per 6NYCRR Part 217-3?	Yes 🗆	No 🗆	N/A⊠
Have equipment operators been trained in the idling requirements of 6NYCRR Part 217-3?	Yes □	No 🗆	N/A⊠
Is BART-equipped equipment properly maintained and working?	Yes 🗆	No 🗆	N/A⊠
Is work being sequenced to avoid double handling?	Yes 🗆	No 🗆	N/A⊠
Is there an onsite recycling program for CONTRACTOR-generated wastes and is it complied with?	Yes □	No 🗆	N/A⊠
Are office trailer heating and cooling systems maintained at efficient set points, have programable thermostats been installed?	Yes 🗆	No 🗆	N/A⊠
Are products and materials used in performance of the work appropriately certified (e.g., LEED, Energy Star, Sustainable Forestry Initiative®, etc.)?	Yes 🗆	No 🗆	N/A⊠
Are resiliency features included in the design, or completed remedy properly installed and/or maintained (flood control, storm water controls, erosion measures, etc.)?	Yes 🗆	No 🗆	N/A⊠
Are green remediation elements included in the design, or completed remedy properly installed and/or maintained (e.g., porous pavement, geothermal, variable speed drives, native plantings, natural stream bank restoration, etc.)?	Yes □	No 🗆	N/A⊠
Has Contractor been notified of any deficiencies?	Yes 🗆	No 🗆	N/A⊠



Comments: None.

* BART – Best Available Retrofit Technology



NYSDEC Division of Environme	NEW YORK STATE OF OPPORTUNITY	Departm Environn Conserva	ent of nental ation	Contract No. D009806-31 DEC Insp. – N/A								
Site Location: Form	Site Location: Former Owego Heat Treat							DEC PM – Stephanie Fitzgerald				
	Weather	Conditio	ns			Cont	ractor Su	ipt. – N/A				
General Description Fog AM Sunny PM Engineer PM – Megan Miller									liller			
Temperature	69 F	AM	92 F		PM	Engir	neer Insp	. – Hanna	h Bedell			
Wind	2 mph E	AM	8 mph NE	-	PM	J						
Health & Safety If any box below is	checked "Yes	", provide	explanation u	nder "H	ealth	& Safe	ety Com	ments".				
Were there any change	s to the Health &	Safety Pla	n?			*Ye	es	No	NA			
Were there any exceed	ances of the peri	meter air m	onitoring reported	l on this d	late?	*Ye	es	No	NA			
Were there any nuisand	e issues reported	d/observed	on this date?			*Ye	es	No	NA			
Health & Safety Cor	nments											
Safety Topic: bugs, sun	ı, slips, trips & fal	ls.										
Summary of Work P	Performed	Arrived a	t site: 0730		D	eparte	d Site:	1230				
 duplicate. The starting pressure was -28 in. Hg. (0820) Mobilized to CMT1-07 to sample port 6. (0830) Started purge at CMT1-07. (0854) Sampled port 6 at CMT1-07. (0900) Mobilized to MW-13. (0915) Ended sampling at SGP-05 and duplicate. The ending pressure was -5 in. Hg. (0930) Started purge at MW-13. (1006) Sampled MW-13. (1015) Secured well and mobilized to residence for temporary SVI point install. (1030) Drilled sub slab point in ~4" concrete slab in basement of residence. (1055) Conducted leak test on sub slab point and point passed. (1104) Started sampling SS-1. The starting pressure was -28 in. Hg. (1106) Placed and started sampling IA-1 in breathing zone of basement. The starting pressure was -29 in. Hg. (1109) Placed and started sampling OA-1 in breathing zone near front porch of the residence. The starting pressure was -28 in. Hg. (1125) Secured residence and mobilized to MW-14. (1142) Started purge at MW-14. (1203) Sampled MW-14. (1215) Collected trip blank. (1230) Secured MW-14. EA offsite. 												
Equipment/Material	Tracking checked "Yes"	', provide	explanation ur	nder "Ma	ateria	l Track	king Con	nments".				
Were there any vehicles	s which did not di	isplay prop	er D.O.T numbers	and plac	ards?	*Ye	es	No	NA			
Were there any vehicles	s which were not	tarped?				* Y	es	No	NA			
Were there any vehicles site?	s which were not	decontami	nated prior to exiti	ng the wo	ork	* Y	es	No	<u>NA</u>			
Personnel and Equi	pment											
Individual		C	ompany		Т	rade		Tota	I Hours			
Hannah Bede	ell		EA		En	igineer			5.0			
Clara Zook			EA		lı	ntern			5.0			
								+				
							-					
Equipment Desci	ription		Contractor/Ve	ndor			Quantity	(Jsed			
Horiba U-52			Pine Environme	ental			1	+	Yes			
Water Level Me	eter		Pine Environme	ental			1	-	Yes			
Mini Rae 300	0		Pine Environme	ental			1		Yes			



Department of Environmental Conservation

DAILY INSPECTION REPORT - No. 01 (Owego Heat Treat) Site No. 754011

MGD Helium Detector Pine E			Invironmental		1	Y	es	
Generator			Pine E	Invironmental		1	Yes	
Gil Air Pump Pine E			Invironmental		1	Yes		
Air Sampling Tool Kit			EA	1	Yes			
Hammer Drill	Hammer Drill			EA		1	Y	es
F-150 Supercab				EA		1	Yes	
Material Description	Imported/ Delivered to Site	Exported off Site	Wa (If J	aste Profile Applicable)	Daily Loads	Daily Weight (tons)*		
*On-Site scale for off-site shipn	nent. deliverv t	icket for materi	ial receiv	ed	•			
None.								
Visitors to Site		Γ	Pon	roconting		Entorod Exc	lusion/CE	7 7000
Naille			кер	resenting		Entered Exc		Z Zone
None.					Y	'es	No	
					Y	′es	No	
					Y	′es	No	
					Y	'es	No	
						/os	No	
					Y	es	NO	
					Y	′es	No	
					Y	′es	No	
					Υ	′es	No	
Site Representatives					1 -	-		
New Yep esentatives				D (1)				
Name				Representing	g			
Ryan Lounsberry				1645 Marshla	nd Rd. homed	wner		



Project Schedule Comments

On schedule

Issues Pending

MW-14 needs to be filled in around the well casing. Very loose. And Soil Gas points to be removed once sufficient data is collected

Interaction with Public, Property Owners, Media, etc.

Ryan Lounsberry stopped to ask when the soil gas points will be removed.

Include (insert) figures with markups showing location of work and job progress

Site Photographs (Attached Separately)

Comments

None.

Site Inspector(s): Hannah Bedell

Date: 07/06/2023



DAILY INSPECTION REPORT - No. 01 (Owego Heat Treat) Site No. 754011

Videos of discreet operations have been provided to the DEC Project Manager to facilitate understanding of the ongoing work. Yes \Box No \boxtimes

REMEDIAL ACTIVITIES AT PROPERTIES

1.	Does anyone at this location have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)?	Yes □	No 🖂
2.	Has anyone at this location been tested and confirmed to have COVID-19?	Yes □	No 🖂
3.	Were personal protective gloves, masks, and eye protection being used?	Yes ⊠	No 🗆
4.	Does the Department and its contractors have your permission to enter the property at this time?	Yes ⊠	No 🗆
5.	If Yes to 1 or 2, follow the latest NYSDOH COVID-19 guidance: https://coronavirus.health.ny.gov/home		
Commo None.	<u>ents:</u>		

On-Site Waste Storage

Drums, roll offs and piles are staged in secure areas?	Yes □	No 🗆	N/A⊠
Liners and berms have been installed if necessary to prevent cross contamination of clean areas?	Yes □	No 🗆	N/A⊠
Containers are in good condition or properly overpacked?	Yes □	No 🗆	N/A⊠
Waste materials are scheduled to be properly characterized and disposed of prior to demobilization?	Yes □	No 🗆	N/A⊠
Complying with RCRA 90 day storage limitation for hazardous waste?	Yes □	No 🗆	N/A⊠
Piles are securely covered when not in use?	Yes □	No 🗆	N/A⊠
Containers are closed when not in use?	Yes □	No 🗆	N/A⊠
Staging areas should be inspected periodically and any issues addressed immediately?	Yes □	No 🗆	N/A⊠
Signage and labeling comply with RCRA requirements for all staging areas and containers?	Yes □	No 🗆	N/A⊠
If any issues noted, has Contractor been notified?	Yes □	No 🗆	N/A⊠
Comments:			

None.



DAILY INSPECTION REPORT - No. 01 (Owego Heat Treat) Site No. 754011

NUISANCE CHECKLIST

Were there any community complaints related to work on this date?	Yes 🗆	No 🖂	N/A□
Were there any odors detected on this date?	Yes 🗆	No 🖂	N/A□
Was noise outside specification and/or above background on this date?	Yes 🗆	No 🖂	N/A□
Were vibration readings outside specification and/or above background on this date?	Yes 🗆	No 🗆	N/A⊠
Any visible dust observed beyond the work perimeter on this date?	Yes 🗆	No 🖂	N/A□
Any visible contrast (turbidity) beyond engineering controls observed on this date?	Yes 🗆	No 🗆	N/A⊠
Was turbidity checked at the outfall(s)?	AM 🗆	PM 🗆	N/A⊠
Were any property owners NOT provided advance notice for work performed on this property on this date?	Yes 🗆	No 🖂	N/A□
Was the temporary fabric structure closed at the end of the day?	Yes 🗆	No 🗆	N/A⊠
Has Contractor failed to protect all foundations and structures adjacent to and adjoining the site which are affected by the excavations or other operations connected with performance of the Work?	Yes □	No 🗆	N/A⊠
If yes, has Contractor been notified?	Yes 🗆	No 🗆	N/A⊠
Comments: None.			

RESILIENCE/GREEN REMEDIATION CHECKLIST

Is site power procured from renewable energy sources (e.g., solar, wind, geothermal, biomass and biogas)?	Yes □	No 🗆	N/A⊠
Is the Contractor employing 2007 or newer or retrofitted (BART*) diesel on-road trucks and non-road equipment?	Yes □	No 🗆	N/A⊠
Is vehicle idling adequately reduced per 6NYCRR Part 217-3?	Yes 🗆	No 🗆	N/A⊠
Have equipment operators been trained in the idling requirements of 6NYCRR Part 217-3?	Yes □	No 🗆	N/A⊠
Is BART-equipped equipment properly maintained and working?	Yes 🗆	No 🗆	N/A⊠
Is work being sequenced to avoid double handling?	Yes 🗆	No 🗆	N/A⊠
Is there an onsite recycling program for CONTRACTOR-generated wastes and is it complied with?	Yes □	No 🗆	N/A⊠
Are office trailer heating and cooling systems maintained at efficient set points, have programable thermostats been installed?	Yes □	No 🗆	N/A⊠
Are products and materials used in performance of the work appropriately certified (e.g., LEED, Energy Star, Sustainable Forestry Initiative®, etc.)?	Yes □	No 🗆	N/A⊠
Are resiliency features included in the design, or completed remedy properly installed and/or maintained (flood control, storm water controls, erosion measures, etc.)?	Yes □	No 🗆	N/A⊠
Are green remediation elements included in the design, or completed remedy properly installed and/or maintained (e.g., porous pavement, geothermal, variable speed drives, native plantings, natural stream bank restoration, etc.)?	Yes 🗆	No 🗆	N/A⊠
Has Contractor been notified of any deficiencies?	Yes 🗆	No 🗆	N/A



Comments: None.

* BART – Best Available Retrofit Technology



Department of Environmental Conservation

NYSDEC Division of Environmental Remediation							Contract No. D009806-31 DEC Insp. – N/A DEC PM – Stephanie Fitzgerald				
Site Location: Form	Contractor Sunt N/A										
	Weather	^r Conditior	าร			- Contractor Supt. – N/A					
General Description	Sunny	AM	Su	nny	PM	Engineer PM	– Mega	an Miller			
Temperature	74 F	AM	8	1 F	PM	Engineer Ins	o. – Har	nnah Bedell			
Wind	3 mph SW	AM	8 mp	h NE	PM						
Health & Safety If any box below is	checked "Yes	s", provide	explanatio	on under "H	ealth &	& Safety Con	ments				
Were there any change	es to the Health 8	& Safety Pla	n?			*Yes	<u>No</u>	NA			
Were there any exceed	lances of the per	imeter air m	onitoring rep	orted on this o	late?	*Yes	No	NA			
Were there any nuisan	ce issues reporte	ed/observed	on this date?)		*Yes	No	NA			
Health & Safety Cou	mments										
Safety Topic: bugs sur	n eline trine & fa	lle									
	i, sips, tips & ia	10.									
Summary of Work F	Performed	Arrived a	t site: 0	745	De	eparted Site:	113	0			
(1104) Collected summa canister at SS-1. The ending pressure was -7.5" Hg. (1106) Collected summa canister at IA-1. The ending pressure was -8" Hg. (1109) Collected summa canister at OA-1. The ending pressure was -8.5" Hg. (1115) Filled in sub-slabbed point. Closed and locked the residence. (1130) EA offsite. Equipment/Material Tracking If any box below is checked "Yes", provide explanation under "Material Tracking Comments". Were there any vehicles which did not display proper D.O.T numbers and placards? *Yes No NA Were there any vehicles which were not tarped? *Yes No NA											
Personnel and Equi	inment						<u> </u>				
Individual		C	ompany		т	rade	-	Total Hours			
Hannah Bed	ell		EA		End	gineer		3 75			
Clara Zook			EA		In	tern		3.75			
Equipment Desc	ription		Contracto	or/Vendor		Quantity	,	Used			
Horiba U-52	2		Pine Envi	ronmental		1		No			
Peristaltic Pu	mp eter		Pine Envi	ronmental		1		No No			
Mini Rae 300	00		Pine Envi	ronmental		1		No			
MGD Helium De	Pine Envi	ronmental		1		No					
Generator		Pine Environmental				1		Yes			
Gil Air Pum	p		Pine Envi	ronmental		1		No			
Air Sampling To			E	Α		1		Yes			
F-150 Superc			E	~			1	No			
F-150 Supercab EA 1 Yes											



DAILY INSPECTION REPORT - No. 02 (Owego Heat Treat) Site No. 754011

Material Description	Imported/ Delivered to Site	Exported off Site	Wa (If J	aste Profile Applicable)	Source or Facility (If <i>I</i>	Daily Loads	Daily Weight (tons)*		
"On-Site scale for off-site ship	ment, delivery t	icket for materia	ai receiv	ed					
None.									
Visitors to Site									
Name			Rep	resenting	E	Entered Exclusion/CRZ Zon			
None.					Ye	Yes		No	
					Ye	S	No		
					Yes		No		
					Ye	s	No		
					Yes		No		
					Ye	s	No		
					Ye	s	No		
					Ye	s	No		
					Ye	s	No		
Site Representatives									
Name				Representing	g				
Ryan Lounsberry			1645 Marshland Rd. homeowner						
-									



Project Schedule Comments
Un schedule
Issues Pending
None.
Interaction with Public, Property Owners, Media, etc.
None
Include (insert) figures with markups showing location of work and job progress

Site Photographs (None Taken)

Comments	
None.	
Site Inspector(s): Hannah Bedell	Date: 07/06/2023

Videos of discreet operations have been provided to the DEC Project Manager to facilitate
understanding of the ongoing work.Yes \Box No \boxtimes



DAILY INSPECTION REPORT - No. 02 (Owego Heat Treat) Site No. 754011

REMEDIAL ACTIVITIES AT PROPERTIES

1.	Does anyone at this location have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)?	Yes 🗆	No 🖂
2.	Has anyone at this location been tested and confirmed to have COVID-19?	Yes 🗆	No 🖂
3.	Were personal protective gloves, masks, and eye protection being used?	Yes 🖂	No 🗆
4.	Does the Department and its contractors have your permission to enter the property at this time?	Yes 🛛	No 🗆
5.	If Yes to 1 or 2, follow the latest NYSDOH COVID-19 guidance: https://coronavirus.health.ny.gov/home		
Comme None.	<u>ents:</u>		

On-Site Waste Storage

Drums, roll offs and piles are staged in secure areas?	Yes □	No 🗆	N/A⊠
Liners and berms have been installed if necessary to prevent cross contamination of clean areas?	Yes □	No 🗆	N/A⊠
Containers are in good condition or properly overpacked?	Yes 🗆	No 🗆	N/A⊠
Waste materials are scheduled to be properly characterized and disposed of prior to demobilization?	Yes □	No 🗆	N/A⊠
Complying with RCRA 90 day storage limitation for hazardous waste?	Yes 🗆	No 🗆	N/A⊠
Piles are securely covered when not in use?	Yes □	No 🗆	N/A⊠
Containers are closed when not in use?	Yes □	No 🗆	N/A⊠
Staging areas should be inspected periodically and any issues addressed immediately?	Yes □	No 🗆	N/A⊠
Signage and labeling comply with RCRA requirements for all staging areas and containers?	Yes □	No 🗆	N/A⊠
If any issues noted, has Contractor been notified?	Yes 🗆	No 🗆	N/A⊠
Comments:			

None.

NUISANCE CHECKLIST



DAILY INSPECTION REPORT - No. 02 (Owego Heat Treat) Site No. 754011

Were there any community complaints related to work on this date?	Yes 🗆	No 🖂	N/A□
Were there any odors detected on this date?	Yes 🗆	No 🖂	N/A□
Was noise outside specification and/or above background on this date?	Yes 🗆	No 🖂	N/A□
Were vibration readings outside specification and/or above background on this date?	Yes □	No 🗆	N/A⊠
Any visible dust observed beyond the work perimeter on this date?	Yes 🗆	No 🖂	N/A□
Any visible contrast (turbidity) beyond engineering controls observed on this date?	Yes 🗆	No 🗆	N/A⊠
Was turbidity checked at the outfall(s)?	AM 🗆	PM 🗆	N/A⊠
Were any property owners NOT provided advance notice for work performed on this property on this date?	Yes □	No 🖂	N/A□
Was the temporary fabric structure closed at the end of the day?	Yes 🗆	No 🗆	N/A⊠
Has Contractor failed to protect all foundations and structures adjacent to and adjoining the site which are affected by the excavations or other operations connected with performance of the Work?	Yes □	No 🗆	N/A⊠
If yes, has Contractor been notified?	Yes 🗆	No 🗆	N/A⊠
Comments:			

None.

RESILIENCE/GREEN REMEDIATION CHECKLIST

Is site power procured from renewable energy sources (e.g., solar, wind, geothermal, biomass and biogas)?	Yes □	No 🗆	N/A⊠
Is the Contractor employing 2007 or newer or retrofitted (BART*) diesel on-road trucks and non-road equipment?	Yes □	No 🗆	N/A⊠
Is vehicle idling adequately reduced per 6NYCRR Part 217-3?	Yes 🗆	No 🗆	N/A⊠
Have equipment operators been trained in the idling requirements of 6NYCRR Part 217-3?	Yes □	No 🗆	N/A⊠
Is BART-equipped equipment properly maintained and working?	Yes 🗆	No 🗆	N/A⊠
Is work being sequenced to avoid double handling?	Yes 🗆	No 🗆	N/A⊠
Is there an onsite recycling program for CONTRACTOR-generated wastes and is it complied with?	Yes □	No 🗆	N/A⊠
Are office trailer heating and cooling systems maintained at efficient set points, have programable thermostats been installed?	Yes □	No 🗆	N/A⊠
Are products and materials used in performance of the work appropriately certified (e.g., LEED, Energy Star, Sustainable Forestry Initiative®, etc.)?	Yes □	No 🗆	N/A⊠
Are resiliency features included in the design, or completed remedy properly installed and/or maintained (flood control, storm water controls, erosion measures, etc.)?	Yes □	No 🗆	N/A⊠
Are green remediation elements included in the design, or completed remedy properly installed and/or maintained (e.g., porous pavement, geothermal, variable speed drives, native plantings, natural stream bank restoration, etc.)?	Yes 🗆	No 🗆	N/A⊠
Has Contractor been notified of any deficiencies?	Yes 🗆	No 🗆	N/A



Comments: None.

* BART – Best Available Retrofit Technology



Department of Environmental Conservation

Attachment B

Field Forms

- Calibration Logs
- Air Sampling Forms
- Soil Sampling Forms
- Surface Water Sampling Form

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Calibration Logs
.

Site Name: Owego Heat Treat	
INSTRUMENT: RKI GX-6006 INSTRUMENT ID No: 21266	
OPERATOR: MULLON Cooly Bachyon WEATHER: Cloudy raily 45%	;
SPAN GAS TYPE: OODEN ISobutilere DATE: 4/17/2023 0835	
CALIBRATION NOTES:	
Zero: O.Uppm	
Span: 99,8ppn	
COMMENTS:	
SIGNATURE: Cedy Berlin DATE: 4/17/2023	

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	Site Name:	Ovego	Iteat Treat	-	
INSTRUMENT: RKI G-X-6000		INSTRU	MENT ID No:	1039	
OPERATOR: Cody Bachnon		WEATHI	ER: Clouchy /	Tailing	45°F
SPAN GAS TYPE: 100 pm ISO (JA	ylene	DATE: L	1/17/2027	033	5
CALIBRATION NOTES:					
Zero: 0.0 pp					
Span: 100,0 pm					
· · · · · · · · · · · · · · · · · · ·					
· · · · · · · · · · · · · · · · · · ·					
COMMENTS:					
		!!=	. <u> </u>		
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			1. 1		
SIGNATURE: Carly Berly	D	ATE: 0	4/17/2023		

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Site N	lame: Ovego Heat Treat
INSTRUMENT: RAI GX-6000	INSTRUMENT ID No:
OPERATOR: Cochy Badyon	WEATHER: Cloudy, 40°F
SPAN GAS TYPE: 100 ppn Isebutylene	DATE: 4/18/2023
CALIBRATION NOTES:	(*
Zero: G.Opp	
San: 10010 pm	
· · · · · · · · · · · · · · · · · · ·	
······································	
	·
COMMENTS:	
·	
SIGNATURE: Call Tech	DATE: 2 4/18/2023

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Site Name: Over Heat Treat
INSTRUMENT: RKI GX-GOOD INSTRUMENT ID No: 42039
OPERATOR: Cody Badman WEATHER: Cloudy, 40°F
SPAN GAS TYPE: 100 ppm ISc but leve DATE: 4/18/2023
CALIBRATION NOTES:
Zero: 0:0 ppn
Span = 100,0 ppm
х
· · · · · · · · · · · · · · · · · · ·
COMMENTS:
SIGNATURE: Caly frake DATE: 4/15/2023

s,

INSTRUMENT: RUI-6X-6000	INSTRUMENT ID No: 42039
OPERATOR: T. R. plainson	WEATHER: 38, Cloudy, rainy
SPAN GAS TYPE: ISobutilence	DATE: 4-19-23
CALIBRATION NOTES:	
Isobutykne = 100.0 gpm	
A:r = 0.0 Mm	
<u> </u>	
COMMENTS:	
SIGNATURE: Minule	DATE: 4-19-23
is were the	

a,

Site Name:

Site N	ame: Dreyo Hear Trad
INSTRUMENT: RUI 6X-6000	INSTRUMENT ID No: 212166
OPERATOR: T. Rubinson	WEATHER: 3 Cloudy ring
SPAN GAS TYPE: Isobuly leve	DATE: 4-19-23
CALIBRATION NOTES:	
Isobity lere = 19.8 pm	,
Air 2 OLDAN	
· · · · · · · · · · · · · · · · · · ·	
· · · · · · · · · · · · · · · · · · ·	
COMMENTS:	· · · · · · · · · · · · · · · · · · ·
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· · · · · · · · · · · · · · · · · · ·	
and a color	
SIGNATURE: Well	DATE: 4-19-23

9,

Site	Name: Owego that treat
INSTRUMENT: PUT GX-6000 PI	D INSTRUMENT ID №: 42039
OPERATOR: K. Cassidy	WEATHER: 39'F, overast
SPAN GAS TYPE: 13064 typene	DATE: 4/20/2023
CALIBRATION NOTES:	
Kobutytere : 99.7 Ppm	
· · · · · · · · · · · · · · · · · · ·	
·	
	· · · · · · · · · · · · · · · · · · ·
COMMENTS:	
	· · · · · · · · · · · · · · · · · · ·
SIGNATURE: Caffix	DATE: 4120/2023

sí.

CALIBRATION			
DATE: Ч	117,	2023	*******
TIME:	131	12	
METER ID:	Ч	890	

pH CALIBRATION

pH STANDARD	INITIAL READING	FINAL READING
4.0	6.85	3,77

CONDUCTIVITY CALIBARATION

CONDUCTIVITY STANDARD	STANDARD READING	FINAL READING
4.49	5.09	4.50

TURBIDITY CALIBRATION

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STANDARD	INITIAL READING	FINAL READING
0 NTU	4,4	0.0

COMMENTS

Bar

CALIBRATION		
DATE: 4/17/23		
TIME: 1338		
METER ID: 21299		

pH CALIBRATION

pH STANDARD	INITIAL	FINAL
	READING	READING
4.0	3.80	3.94

CONDUCTIVITY CALIBARATION

CONDUCTIVITY STANDARD	STANDARD READING	FINAL READING
4.49	4.52	4,51

TURBIDITY CALIBRATION

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STANDARD	INITIAL READING	FINAL READING
0 NTU	11.5	0.0

COMMENTS

Culy Dark

CALIBRATION		
DATE:	4/18/2023	
TIME:	0745	
METER ID:	41890	

pH CALIBRATION

pH STANDARD	INITIAL	FINAL
	READING	READING
4.0	4,03	3,99

CONDUCTIVITY CALIBARATION

CONDUCTIVITY STANDARD	STANDARD READING	FINAL READING
4.49	2.70	4.53

TURBIDITY CALIBRATION

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STANDARD	INITIAL READING	FINAL READING
0 NTU	1.9	0,0

COMMENTS

SIGNATURE

Cely beh

CALIBRATION	
DATE: 418/2023	
TIME: 0735	
METER ID: ZIZOP	

pH CALIBRATION

pH STANDARD	INITIAL	FINAL
	READING	READING
4.0	4.03	3.96

CONDUCTIVITY CALIBARATION

CONDUCTIVITY STANDARD	* STANDARD READING	FINAL READING
4.49	4.35	4.54

TURBIDITY CALIBRATION

s,

STANDARD	INITIAL READING	FINAL READING
0 NTU	7.8	Gil

COMMENTS

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SIGNATURE

Coly Da

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CALIBRATION	
DATE: 4/ 1/2023	
TIME: 0731	-
METER ID: 41890	

pH CALIBRATION

DU STANDADD	INITIAL	FINAL
pristandand	READING	READING
4.0	4-85	3,96

CONDUCTIVITY CALIBARATION

CONDUCTIVITY STANDARD	• STANDARD READING	FINAL READING
4,49	5.16	4.62

TURBIDITY CALIBRATION

STANDARD	INITIAL READING	FINAL READING
0 NTU	le 1	0,0

COMMENTS

Cul pol

CALIBRATION	
DATE: 4/19/2023	
TIME: 072ζ	
METER ID: 21299	

pH CALIBRATION

PHSTANDADD	INITIAL	FINAL
pristandan	READING	READING
4.0	3.90	3.94

CONDUCTIVITY CALIBARATION

CONDUCTIVITY STANDARD	STANDARD READING	FINAL READING
4.49	4.68	4.55

TURBIDITY CALIBRATION

STANDARD	INITIAL READING	FINAL READING
0 NTU	61	0.0

COMMENTS

Conf bell

CALIBRATION	
DATE: 04 20 2023	
TIME: 0723	
METER ID: 4/890	

pH CALIBRATION

TH STANDADD	INITIAL	FINAL
phoradaku	READING	READING
4.0	4,33	3,89

CONDUCTIVITY CALIBARATION

 CONDUCTIVITY STANDARD	• STANDARD READING	FINAL READING
4.49	4.57	4,58

TURBIDITY CALIBRATION

STANDARD	INITIAL READING	FINAL READING
0 NTU	0,0	010

COMMENTS



SIGNATURE

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CALIBRATION		
DATE: 04	20/2023	
TIME: 07	75	
METER ID:	21299	

pH CALIBRATION

pH STANDARD	INITIAL	FINAL
	READING	READING
4.0	3.91	3,88

CONDUCTIVITY CALIBARATION

CONDUCTIVITY STANDARD	• STANDARD READING	FINAL READING	
4.49	4.51	4.54	

TURBIDITY CALIBRATION

s,

STANDARD	INITIAL READING	FINAL READING
0 NTU	0,0	0,0

COMMENTS

CALIBRATION		
DATE: 4/21/2023		
TIME: OGIZ		
METER ID: ZIZ99		

pH CALIBRATION

pH STANDARD	INITIAL	FINAL
	READING	READING
4.0	4.79	3,94

CONDUCTIVITY CALIBARATION

CONDUCTIVITY STANDARD	STANDARD READING	FINAL READING
4.49	4,93	4.51

TURBIDITY CALIBRATION

STANDARD	INITIAL READING	FINAL READING
0 NTU	4.9	0,0

COMMENTS



SIGNATURE

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CALIBRATION	
DATE: 4/21/2023	
TIME: OGIS	
METERID: 41890	

pH CALIBRATION

	INITIAL	FINAL
PH STANDARD	READING	READING
4.0	4.75	3,94

CONDUCTIVITY CALIBARATION

 CONDUCTIVITY	• STANDARD	EINIAL DEADING
STANDARD	READING	FINAL READING
4.49	5.16	4,51

TURBIDITY CALIBRATION

STANDARD	INITIAL READING	FINAL READING
0 NTU	O.C	$O_{+}O_{-}$

COMMENTS

Bal Cur

INSTRUMENT: Honey well Mini RAE	3000 INSTRUMENT ID No: 45675
OPERATOR: H. Bedel	WEATHER: 64°F. Force
SPAN GAS TYPE: Isobutylene,	DATE: 07/06/23
CALIBRATION NOTES:	
Zero cal = 0.0 ppm	
Spun Cal= 100 ppm	

· · · · · · · · · · · · · · · · · · ·	
COMMENTS:	
SIGNATURE: Herbeelell	DATE: 07/06/23

Site Name: Nureno Heart Treat (754011)

CALIBRATION	
DATE: 07/06/22	
TIME: 0735	
METER ID: 2(3)7	

pH CALIBRATION

pH STANDARD	INITIAL READING	FINAL READING	
4.0	4.22	3,97	

CONDUCTIVITY CALIBARATION

CONDUCTIVITY STANDARD	STANDARD READING	FINAL READING
4.49	4.77	4.5

TURBIDITY CALIBRATION

STANDARD	INITIAL READING	FINAL READING
0 NTU	1.3	0.1

COMMENTS

Hersell

Air Sampling Forms

à,	
NEW YORK STATE DEPARTMENT OF H	HEALTH INDOOR AIR QUALITY
CENTER FOR ENVIRONM	IENTAL HEALTH
This form must be completed for each resid	dence involved in indoor air testing.
Preparer's Name: Hannah Bedell Date/Tim	e Prepared: <u>07/06/</u> 23 @ 1000
Preparer's Affiliation: EA Engineering	Phone No: $(315)730-0872$
Purpose of Investigation: Preparing an RSO	
1. OCCUPANT: Interviewed: Y/O Property is a	unaccupied .
Last Name: First Name:	
Address:	· · · · · · · · · · · · · · · · · · ·
County:	
Home Phone: Office Phon	ie:
Number of Occupants/persons at this location	Age of Occupants
a na serie a serie de la companya de	
2. OWNER OR LANDLORD: (Check if same as occupant_)
Interviewed: Y/🕅	
Last Name: $N_O H$ First Name:	Marlin
Address:	
County:	
Home Phone: Cell Phone:	(315) 374 -1110

3. BUILDING CHARACTERISTICS Type of

Building: (Circle appropriate response)

Residential	School	Commercial/Multi-use
Industrial	Church	Other:

If the property is residential, type? (Circle appropriate response) N/A

Ranch

Raised Ranch	2-Family Split Level	3-Family Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other:

If multiple units, how many? One ()nit

If the property is commercial, type?

Business Type(s) Firewood Shop—Newspaper Company Does it include residences (i.e., multi-use)? Y / N If yes, how many?

Other characteristics:

Number of floors (1) Building age Unsure Is the building insulated? Y/ N How airtight? Tight (Average) Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors N/A - One Story

Airflow near source

Outdoor air infiltration

Infiltration into air ducts

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

a. Above grade construction:	wood frame	concrete	stone	brick		
b. Basement type:	full	crawlspace	slab	other		
c. Basement floor:	concrete	dirt	stone	other		
d. Basement floor:	uncovered	covered	covered wit	h		
e. Concrete floor:	unsealed	sealed	sealed with	· · · · · · · · · · · · · · · · · · ·		
f. Foundation walls:	poured	block	stone	other		
g. Foundation walls:	unsealed	sealed	sealed with			
h. The basement is:	wet	damp	dry	moldy		
i. The basement is:	finished	unfinished	partially fir	ished		
j. Sump present?	Y N					
k. Water in sump? Y / N	V/Not applicable	>				
Basement/Lowest level depth below grade:(feet)						
Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains) A ~ 2 in floor drain, inside door to the night						

6. HEATING, VENTING and AIR CONDITIONING

Type of heating system(s) used in this building: (circle all that apply –note primary)

Unsure Hot air circulation - Heat pump - Hot water baseboard - Space Heaters -Stream radiation - Radiant floor - Electric baseboard - Wood stove - Outdoor wood boiler - Other______

The primary type of fuel used is: Unsure

Natural Gas - Fuel Oil - Kerosene - Electric - Propane - Solar - Wood - Coal

Domestic hot water tank fueled by: _____

Boiler/furnace located in:

(Basement) Outdoors - Main Floor - Other_____

Air conditioning: Central Air - Window units - Open Windows - None

Are there air distribution ducts present?

4,

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate thelocations on the floor plan diagram.

7. OCCUPANCY Home is unoccupied Is basement/lowest level occupied?

Full-time - Occasionally - Seldom Almost Never

Level General Use of Each Floor (e.g., family room, bedroom, laundry, workshop, storage)

Basement	unfinished	
1 st Floor	N/A	
2 nd Floor	N/A	
3 rd Floor	N/A	
4 th Floor	N/A	

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

- a. Is there an attached garage?
- b. Does the garage have a separate heating unit?

c. Are petroleum-powered machines or vehicles	
stored in the garage (e.g., lawnmower, atv, car)	

- d. Has the building ever had a fire?
- e. Is a kerosene or unvented gas space heater present?
- f. Is there a workshop or hobby/craft area?
- g. Is there smoking in the building?
- h. Have cleaning products been used recently?
- i. Have cosmetic products been used recently? j. Has painting/staining been done in the last 6 months?
- k. Is there new carpet, drapes or other textiles?
- 1. Have air fresheners been used recently?
- m. Is there a kitchen exhaust fan?
- n. Is there a bathroom exhaust fan?
- o. Is there a clothes dryer?
- p. Has there been a pesticide application?

	Y / 🕅
	Y/N/N/A
	Y/N/N/A
	Please specify
	Y (N) When?
?	Y / N Where?
	Y / 🕅 Where & Type?
	Y/N How frequently?
	Y / N When & Type?
	Y / N When & Type?
	Y / N When & Type?
	Y N Where & When?
	Y (N) When & Type?
	If yes, where vented? <u>Unsure</u> Y / N
	If yes, where vented? <u>Unsure</u> Y / N
	Y / N If yes, is it vented?
	Y/N When & Type? <u>Unsure</u>

Are there odors in the building? Y (N)f

yes, please describe:

Do any of the building occupants use solvents at work? Y(R) Building is uncampied (e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist)

If yes, what types of solvents are used?

If yes, are their clothes washed at work? Y / N / (PA)

Do any of the building occupants regularly nse or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly)(No)

Yes, use dry-cleaning infrequently (monthly or less) Unknown Yes, work at a dry-cleaning service.

Is there a radon mitigation system for the building/structure? Y (N) Date of Installation: Is the system active or passive? Active/Passive (NA)

9. WATER AND SEWAGE

Water Supply:Public WaterDrilled WellSewage Disposal:Public SewerSeptic Tank

Driven Well Dug Well Leach Field Dry Well

Other: Unsure

1.10. RELOCATION INFORMATION (for oil spill residential emergency)

1.a. Provide reasons why relocation is recommended: N/A

1.b. Residents choose to: remain in their home, relocate to friends/family relocate to hotel/motel.

1.c. Responsibility for costs associated with reimbursement explained. Y / N

1.d. Relocation package provided and explained to residents? Y/N

400

11. FLOOR PLANS

÷. .

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement:



First Floor:



12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repairshops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the welland septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.



13. PRODUCT INVENTORY FORM Make & Model of field instrument used: Honey well Mini RAE

1

* Describe the condition of the product containers as Unopened (UO), Used (U), or Deteriorated (D)

** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible. BTSA\Sections\SIS\Oil Spills\Guidance Docs\Aiproto4.doc

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo **
	-				-	
	· ·					
···						

Science & Technology 269 W Jefferson St Syncure, NY 13202 Sample Location information: Sine DN Marker Gesses 154 DN Marker Gesses 155 DN Marker Gess			EA Engineering	, and Its Affiliate I	EA	Project #:	16025	31
269 W Jefferson St Syracuse, NY 13202 Dispersive Magan Miller Sample Location Information: Bumpler(b): M. B. C. Z. Sile ID Number-64666 154 D11 Sumpler(b): M. B. C. Z. Winder Seita ID Nonductor Record: Building ID. No. WeS. A. SUBLAS SOLICAS Derectories INDOOR AIR - DASIMINT SUBSLAS SOLICAS Derectories GUTDOOR AIR SUBMAC Chicker Record: INDOOR AIR - DASIMINT SUBSLAS SOLICAS Derectories GUTDOOR AIR Sub ID Number-64666 INDOOR AIR - DASIMINT SUBSLAS SOLICAS Derectories GUTDOOR AIR Sub ID Auditor No: 34 35 How Regulator No: 34 4 5 5 OUTDOOR AIR Samber Sorial No: 17 22 Caniter Sorial No: 17 2 2 C. Sain Date The Solic Caniter Sorial No: 22 2 3 Samber Sorial No: 17 2 2 Caniter Sorial No: 17 2 0 C. 33 4 3 Caniter Sorial No: 17 2 0 C. Sain Date Theorem Sain Date Theorem Sain Date Theorem Sain Date Theorem 32 4 3 5 Sain Date Theorem Tark Pressure: Index Pressure: Flow Regulator No: 32 4 3 5 Sain Date Theorem Sain Date Theorem Sain Date Theorem Sain Date Theorem Tark Pressure: Index Pressure: Sain Date Theorem Sain Date Theorem			Science & Techr	nology		Project Name	NYSDEC Owner	JackTrack
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Heliumin Shroud: (04.2% Heliumin Bag: 10-0 ppm Pass: yes				······	·			
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Heliumin Shroud: (64.2% Heliumin Bag: 10-0 ppm Pass: yes	nulas Circula			2				

FIELD AIR SAMPLING FORM

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		®	EA Engineering, F Technology	P.C. and Its Affilia	te EA Science and	Project #: Project Name: Location:	1602531 Owego Heat Treat Site Apalachin, NY	
Sample Location	Informati	011	SOIL VAPOR SA	MPLING LOG		Project Manager:	Megan Miller	┥
Site ID Number: 7	54N						Headell C 7	-
PID Mator Head (Mod	U Social HD :	11				Sampler(s):	N. DECUM	
SUMMA Caniste	er Record:					Soil Vapor I.D. No.:		┥
		SOIL VAP	OR POINT			DUPLICATE SAM	PLE (IF COLLECTED)	-1
Flow Regulator No.:	low Regulator No.: H7(b)				Flow Regulator No.:			
Canister Serial No.:	B	<u>,C</u>	11049		Canister Serial No.:			
Start Date/Time;	64	01/2	23 139	50	Start Date/Time:			
Start Pressure: (inches Hg)	- 2	7.5	- HAR	12	Start Pressure: (inches Hg)			
Stop Date/Time:	06/01	23	14	50	Stop Date/Time:			
Stop Pressure: (inches Hg)		-5	.5		Stop Pressure: (inches Hg)			
Sample ID: 7	5HD Informatic		1 -0	1-06012	3 Sample ID:		n stern viteristikingen	
Helium percentage acl Tracer Gas Test:	hieved in enc	losure for	89.1%	<u></u>	Depth to sample point			-
Tracer Gas test result ((% of Helium)	:	Oppon		Nearest Groundwater	Elevation:		
Noticeable Odor?	<u>-</u>		No		Additional info:		1	
Purge Volume PID Re	ading (ppb)							
Duplicate Sample?								
Outdoor Ambient Ten	nperature:		85°F					
Wind Direction:			4mph Sc	J				
Comments:			······································					1
						<i>,</i>		1
							· · · · · · · · · · · · · · · · · · ·	
	- <u>.</u>							
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								-
Sampler Signatur	e: A.	. P	. <i>M</i>					┨
	- 17 to	▻◶▰						늰

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	R	EA Engineering,	P.C. and Its Affilia	te EA Science and	Project #:	1602531
		Technology			Project Name:	Owego Heat Treat Site
					Location:	Apalachin, NY
		SOIL VAPOR SA	MPLING LOG		Project Manager:	Megan Miller
Sample Location	Information:				· · · · · ·	
Site ID Number 63 10-1 () 1					Sampler(s):	H.Bepter M. C. Zook
PID Meter Used (Mod	lel, Serial #) :				Soil Vapor I.D. No.:	SVG OX SGP-
SUMMA Caniste	er Record;					
	SOIL VAI	OR POINT			DUPLICATE SAMI	PLE (IF COLLECTED)
Flow Regulator No.:	4124			Flow Regulator No.;		
Canister Serial No.:	1992	e .		Canister Serial No.:		······································
Start Date/Time:	06/01/23	1320		Start Date/Time:		
Start Pressure: (inches Hg)	-28 1	nHa		Start Pressure: (inches Hg)		
Stop Date/Time:	06/01/2	3 1410	1	Stop Date/Time:		
Stop Pressure: (inches Hg)	-5	in Ha		Stop Pressure: (inches Hg)		
Sample ID: 7	54011-	3-61 -02	-06012	3 Sample ID:		
Other Sampling	Information: bieved in enclosure for			Depth to example poin		
Tracer Gas Test:		92.8%		Deput to sample poin		
Tracer Gas test result ((% of Helium):	Ò		Nearest Groundwater	Elevation:	
Noticeable Odor?		No		Additional Info:		L
Purge Volume PID Re	ading (ppb)					
Duplicate Sample?		Ala				
Outdoor Ambient Ten	Putdoor Ambient Temperature: 95°F					
Wind Direction:	· · (())	4 man SU	ე	-		
Comments:			·····	l		· · · · · · · · · · · · · · · · · · ·
	·····		·			
					1 1	
						<u>, , , , , , , , , , , , , , , , , , , </u>
				•		
						<u></u>
Sampler Signatur	e: Mennt	2 seal 1			· · ·	
	0-1					

		EA Engineering, F Technology	P.C. and Its Affilia	te EA Science and	Project #: Project Name: Location:	1602531 Owego Heat Treat Site Apalachin, NY
		SOIL VAPOR SA	MPLING LOG		Project Manager:	Megan Miller
Sample Location	Information:			· · · · · · · · · · · · · · · · · · ·	r	
Site ID Number;		754011			Sampler(s);	H. Bedell C. Zook
PID Meter Used (Mode	l, Serial #) :				Soil Vapor I.D. No.:	SGP G-03
SUMMA Canister	r Record:					
	SOIL VAP	OR POINT		 	DUPLICATE SAMP	'LE (IF COLLECTED)
Flow Regulator No.:	low Regulator No.: イルン			Flow Regulator No.:		
Canister Serial No.:	1508			Canister Serial No.;		·
Start Date/Time:	06/01/23	1310		Start Date/Time:		
Start Pressure: (inches Hg)	nt Pressure: nches Hg) - 29 "Har			Start Pressure: (inches Hg)		
Stop Date/Time:	06/01/23	1413		Stop Date/Time:		
Stop Pressure: (inches He)	- 3.0			Stop Pressure: (inches Hg)		
Sample ID: 75	56P 1011-546-	03-060123		Sample ID:		
Other Sampling I	nformation:	······································	· · ·		· · · · · ·	
Helium percentage ach Tracer Gas Test:	lieved in enclosure for	95.4 %		Depth to sample point		
Tracer Gas lest result (9	% of Helium):	0.0		Nearest Groundwater	Elevation:	
Noticeable Odor?		No		Additional info:		.
Purge Volume PID Rea	ding (ppb)					
Duplicate Sample?		' No	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>			
Outdoor Ambient Tem	perature:	82° F				
Wind Direction;		3mph.SW				
Comments:			•			
	· · · · · · ·			·		
	11					· · · · · · · · · · · · · · · · · · ·
Sampler Signature	Jan 8	call	······································			

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	EA Engineering, P.C. and Its Affilia	nte EA Science and	Project #:	1602531
	Technology		Project Name:	Owego Heat Treat Site
			Location:	Apalachin, NY
	SOIL VAPOR SAMPLING LOG		Project Manager:	Megan Miller
Sample Location Information:				
Site ID Number: 75401			Sampler(s):	H. Bedell, C. 200 k
PID Meter Used (Model, Serial #) :			Soil Vapor I.D. No.:	SGR-04 SGR-04
SUMMA Canister Record:		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
SOIL VAI	POR POINT		DUPLICATE SAMI	PLE (IF COLLECTED)
Flow Regulator No.:	7159	Flow Regulator No.:	ļ	
Canister Serial No.:	143	Canister Serial No.;		
Start Date/Time: 06/01/2	23 (518	Start Date/Time:		
Start Pressure: (inches Hg) - 29	<i>p</i>	Start Pressure: (inches Hg)		
Stop Date/Time: OG(0)	23 1410	Stop Date/Time:		
Stop Pressure: (inches Hg)	-7	Stop Pressure: (inches Hg)		
Sample ID: 754011		2 Sample ID:		
Helium percentage achieved in enclosure for	m1 0.1	Depth to sample point		
Tracer Gas Test:	11.9%			
Tracer Gas test result (% of Helium):	0	Nearest Groundwater	Elevation;	
Noticeable Odor?	No	Additional info;		
Purge Volume PID Reading (ppb)				
Duplicate Sample?	¥10	-		
Outdoor Ambient Temperature:	<u>~~</u> \ <u>~</u> 1.	-		
Wind Direction:	HSM	-		
Commente	Whent			
Connicitio.				
				·
	p N/I			
Sampler Signature:	62 all			
FIELD SOIL VAPOR SAMPLING FORM

	R	EA Engineering, P.C. and H	ts Affiliate EA Science and	Project #	1602531					
		Technology		Project Name:	Owego Heat Treat Site					
				Location:	Apalachin, NY					
		SOIL VAPOR SAMPLING	GLOG	Project Manager:	Megan Miller					
Sample Location	Information:									
Site ID Number:	754011			Sampler(s):	H. Bedell C. 200	01				
PID Meter Used (Mode	el, Serial #) :			Soil Vapor I.D. No.:	\$16-05 SGP-05	5				
SUMMA Caniste	er Record:			· · · · · · · · · · · · · · · · · · ·						
	SOIL VAP	OR POINT		DUPLICATE SAMI	PLE (IF COLLECTED)					
Flow Regulator No.:	468	0	Flow Regulator No.:	46	80					
Canister Serial No.:	200)3	Canister Serial No.:	R	2155					
Start Date/Time:	06/01/23	1526	Start Date/Time:	06/05/23	1526					
Start Pressure: (inches Hg)	-12		Start Pressure: (inches Hg)	-	- 12					
Stop Date/Time:	06/05/23	1927	Stop Date/Time:	06/01/23	1527					
Stop Pressure: (inches Hg)	-5		Stop Pressure: (inches Hg)		-5					
Sample ID: 75	541011 -	-05-0601	23 Sample ID: 7	54011 - 😭	p 8-FD-060123					
Other Sampling I	Information:		······································							
Helium percentage acl Tracer Gas Test:	hieved in enclosure for	86.9%	Depth to sample point	:						
Tracer Gas test result (% of Helium):	0	Nearest Groundwater	Elevation:						
Noticeable Odor?		NO	Additional info:		· · · · · · · · · · · · · · · · · · ·					
Purge Volume PID Rea	ading (ppb)	ase and a second se								
Duplicate Sample?		Mer								
Outdoor Ambient Tem	nperature:	1-2 07"E								
Wind Direction;		y Si)				-				
Comments		- imph DW		· · · ·						
Likely a faulty regulator, lost varanan quickly. Individual cans mene.										
GRA	B San	nple tota	il Hime: ~	-1-2 W	inutes					
	· · · · · · · · · · · · · · · · · · ·	·····	-							
Sampler Signature	e: Jon	Bedel	·							
	~ Y					_				

FIELD SOIL VAPOR SAMPLING FORM

	R	EA Engineering, P.C.	and Its Affilia	te EA Science and	Project #:	1602531	٦
		Technology			Project Name:	Owego Heat Treat Site	
					Location:	Apalachin, NY	
		SOIL VAPOR SAMP	LING LOG		Project Manager:	Megan Miller	
Sample Location	Information:	· · · · · · · · · · · · · · · · · · ·		1],
Site ID Number:	74011				Sampler(s):	H. Bedull, C. 2	0Þ
PID Meter Used (Mod	el, Serial #) :				Soil Vapor I.D. No.:	Sor P Stored	
SUMMA Caniste	er Record:						٦ĺ
	SOIL VAP	OR POINT			DUPLICATE SAME	PLE (IF COLLECTED)	
Flow Regulator No.:	Ч	702		Flow Regulator No.:			
Canister Serial No.:	2	-187		Canister Serial No.:			
Start Date/Time:	06/01/2	3 1505)	Start Date/Time:			
Start Pressure: (inches Ho)	-18	5		Start Pressure: (inches Hg)			
Ston Date/Time	06/01/27	ARRAN T	1607	Ston Data/Time			
Stop Pressure:		$\sqrt{3}$	V + - L-	Stop Pressure:			
(inches Hg)	5			(inches Hg)	<u> </u>		-
Sample ID: 75	54011-9	G-06-06	00123	Sample ID;			
Other Sampling	Information:						
Helium percentage ach Fracer Gas Test:	hieved in enclosure for	91.7%		Depth to sample point	*		
Tracer Gas test result (% of Helium):	0		Nearest Groundwater	Elevation:		
Noticeable Odor?				Additional info;			
Rungo Volumo DID Por	ding (pph)	No					
ruige volume rus kea	aring (ppo)	<u></u>					
Duplicate Sample?	·····	10					
Outdoor Ambient Tem	nperature:	NO					
		87° F					
Wind Direction:		Kunda Stal					
Commenter	<u> </u>	v mpri SVV				· · · · · · · · · · · · · · · · · · ·	_
commento,			· · · · ·		<u>.</u>		-
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	4						_
Sampler Signatur	1/	-011					_
ampler Signature	pfens	ell			•	······································	┛

FIELD SOIL VAPOR SAMPLING FORM

	FA Engineering BC and Its A	601:		
	Technology	innate EA Science and	Project #:	1602531
	· ,		Project Name:	Owego Heat Treat Site
	SOIL VAPOR SAMPLING LC		Location:	Apalachin, NY
Sample Location Information:	JOHE WHI OK BANKI LING LO		Project Manager:	Megan Miller
Site ID Number: 754011		· · · · · · · · · · · · · · · · · · ·		LEADIN C IDON
PID Meter Used (Model, Serial #) :	45175 (4		Sampler(s):	SCO AF
SUMMA Canister Record:	10610 (moneyu	sell Min KHE)	Soil Vapor I.D. No.:	567-05
SOIL VAI	POR POINT		DUPLICATE SAMI	PLE (IF COLLECTED)
Flow Regulator No.; 4117		Flow Regulator No.:	4117	
Canister Serial No.: P1272		Canisler Serial No	10,705	
Start Date/Time: 07/64	23 0817	Start Date/Time:	N71001	23 0817
Start Pressure:		Start Pressure:	-1	
0.1000	2.2 0015	(incres Hg)	and and	22 0015
Stop Pressure:	P3 0415	Stop Date/Time: Stop Pressure:	0710@1	VS 041)
(inches Hg)		(inches Hg)		
Sample ID: 754011 -	SG1P - 05	Sample ID; 7	54011 - 8	SGP-DUP
Other Sampling Information:				
Helium percentage achieved in enclosure for Tracer Gas Test:	67.190	Depth to sample point:		
Tracer Gas test result (% of Helium):	0.0	Ncarest Groundwater I	Blevation:	
Noticeable Odor?	No	Additional info:		
Purge Volume PID Reading (ppb)	0.0			
Duplicate Sample?	Yes			
Outdoor Ambient Temperature:	70°F			
Wind Direction:	2 molt E			
Comments:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		<u> </u>	
				· · · · · · · · · · · · · · · · · · ·
		······································		
		· · · · · · · · · · · · · · · · · · ·		
	d	· · · · · · · · · · · · · · · · · · ·		
Sampler Signature: 1. B.o.	sett			
	7	<u></u>	<u></u>	

Soil Sampling Forms

Coordina Surface H Reference Reference	tes: levation e Elevati e Descrij	SURFAC Northing : on: ption:	EA Engineer EA Science a E SOIL SAMPL	ring, P.C. and and Technolo ING LOG Easting:	l Its Affiliate 9gy	-	Job. No. Client: NYSDEC 754011 LO2531 Project: Owego Heat Treat Apalachin, NY Sampling Location Description: Sample Location IDs: N of pord in brughy field, near abandoned ASU Location Sample Location IDs: 754011-552-1-(2-12)-0418 Sampling Date/Time Sample Method: Start Finish DATE 41(8(27) DATE 41(8/23)
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: JM Weather: MSIF Temperature: OVERAST
0-2	0.6	X	×	×	×		light brown, class, motil , the fine
2-12	0.8	X	7	¥	×		darke brown, clay, moist, file
Logged by Sample Ir	r: iterval:	Ke,TL 0-2, 2;	17	<u>}</u>		<u> </u> ,	Date: <u>411912023</u> QA/QC: Time: <u>107, 1108</u>

		®	EA Engineer	ing, P.C. and	Its Affiliate	 !	Job. No. Client:	NYSDEC 7540 Owego Heat Trea	t Loc	ation chin, NY
		SURFAC	EA Science a	ind Technolo	gy		Sampling Location Description: Sample Location IDs: Arge bruchy field 354011-552-6-(6-2)-00 354011-552-6-(6-12)-00			
Coordina Surface E	es: evation:	Northing:		Easting:		-	Sw of wes	tmost 610	5 . Sampling	g Date/Time
Reference Reference	Elevatio Descrip	on: otion:		- 12		-	hand anger	e Method:	DATE U/19129 TIME 1034	Finish DATE 4118173 TIME 644
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: AN Weather: UOF Temperature: ONE S		, , , ,	
5-2	0.8	X	X	X	X		take brown,	samely, roch	cy, medium	
2-12	1.5	X	X	X	X		brown, sar	dy, rocky	mexium	
Logged by		Ke, TR	<u>. </u>				Date: <u>4/18</u>	12023	QA/QC:	
Sample In	terval:	0-2.7	1-12				Time: <u>1034,</u>	1844		

		R	EA Engineer	ring, P.C. and	l Its Affiliate	•	Job. No. Client: NYSDEC 7011	Loc Apalao	ation chin, NY
		SURFAC	EA Science a	and Technolo	ogy		Sampling Location Description: buyby field, west size	Sample Location II 75464-552-	»: 3-{0-2}-℃41 823
Coordina	tes:	Northing:		Easting:				754011-552-	3-(2-12)-041 82
Surface E	levation	:				_		Sampling	Date/Time
Reference Reference	Elevati Descrij	on: ption:			, ,	-	Sample Method: hand angen composite	Start DATE 4 /1 8 /2 3 TIME 093 5	Finish DATE U! ! ?!23 TIME O 93 9
Sample interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: AM Weather: 4.2.77 Temperature: Overcass		
0-2	D. le	X	X	X	X		dy, Sendy, brown, fine		
2-12	2.1	X	y	У	X		dry, sonly, brown, fine		
					-				
		Ke TE					Date: 04/18/2023	DAVOG dura .	+ NS/MSN
ample In	terval:	D-2, 2-1	2		- -		Time: 8930, 8939	2.72.5	-600 (2-12)

		SURFAC	EA Engineer EA Science a	ring, P.C. and and Technolo ING LOG	l Its Affiliate 9gy		Job. No.Client:NYSDEC 754011LocationVe2531Project:Owego Heat TreatApalachin, NYSampling Location Description:Sample Location IDs:bmshyField NC of75401-552-5-(8-2)-041813
Coordinat Surface El Reference Reference	dinates: Northing: Easting: Ea					- - -	port, SU of SS2-4754011-552-5-62-62182-Sample Method:StartSample Method:StartDATE out 8/25DATE out 8/25DATE out 8/25TIME 0408
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: Weather: UU0F Temperature: OVERAN
0-2	1.5	Х	X	X	Х		brown, day, damp/milit, fine
2-12	6.8	y	y	y	Х		light brown, cley, dry, fine
Logged by: <u>FL, TP</u> Sample Interval: <u>D'-D', <u>D</u>'-1<u>Z</u>'</u>							Date: <u>04/18/2023</u> QA/QC:

	J.	®	EA Engineer EA Science a	ing, P.C. and Ind Technolo	l Its Affiliate ogy		Job. No. Client: (40253) Project: Sampling Location Des	NYSDEC HY91 Owego Heat Treat	Loc Apalac Sample Location II	ation chin, NY Ds:
		SURFAC	E SOIL SAMPL	ING LOG	0,		NW of pond	in field	754011-552-	-4-(2-2)-041 -4-(2-72)-04
Coordinat Surface E	tes: levation	Northing.		Easting:		-			Sampling	Date/Time
Reference Elevation:							Sample	e Method:	Start	Finish
Reference	Descriț	otion:					hand auger	composite	DATE 4/19123 TIME 0838	DATE 4/18/27 TIME 0 842
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: d.M Weather: U.U.F Temperature: OVERCA	14		·
0-2	1.3	X	X	X	×		dark brown,	sandy: dry		
2-12	1.1	X	X	Х	×		brown, sind	r, dry recky		
	i									
ogged by	 ; }	e, TP.				<u> </u> ;	Date: <u>84/1</u>	8/2=23	QA/QC:	
ample In	terval:	0-6,61	L			•	l'ime: 0830	,0842		

Coordinates: Surface Elevi	ation:	SURFACE	EA Engineer EA Science a E SOIL SAMPL	ring, P.C. and and Technolo ING LOG Easting:	l Its Affiliate 9gy	-	Job. No. Client: Ne02531 Project: Sampling Location Des	NYSDEC 7546 I Owego Heat Treat	Loca Apalac Sample Location ID 754611 - 552-7 754611 - 552-7 Sampling	ation hin, NY 5: - (6 - 2)- 64(97 - (2 - 1 2) - 64 8 2 3 Date/Time
Reference Ele Reference De	evation: escription	Ľ				-	Sample	e Method:	Start DATE64/1 8/23	Finish DATE 118123
Sample P Interval (p)	ID pm) TC	L VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: dim Weather: OVErCAS Temperature: LIZIF	+	TIME 0 562	TIME 0812
0-20	-1	X	X	×	X		dark brown,	landy		
2-12. 4	.5	ኦ	X	X	X		brown, sand	4		
	_									
Logged by:	K	-1 TR.	- \]	· · · · · · · · · · · · · · · · · · ·	-		Date: <u>64</u> /	18/2023	QA/QC:	······

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Coordina Surface E Reference Reference	EA Engineering, P.C. and Its Affiliate EA Science and Technology SURFACE SOIL SAMPLING LOG res: Northing: Easting: levation: Elevation: Description: TCL PCPa(- - -	Job. No.Client:NYSDECJune 1LocationI U12131Project:Owego Heat TreatApalachin, NYSampling Location Description:Sample Location IDs:in Uagle airlieud, E of Path from residence75401-552-9-(6-2)-0418in Uagle airlieud, E of Path from residence75401-552-9-(6-2)-0418Sample Method:StartSample Method:StartIn E (4)DATE 64/18/2Inte (422)
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: dM Weather: DVECAST Temperature: HYOP
ð-2	4.8	X	×	Х	×		take brown, dry, sandy
2-12	7.0	×	×	×	×		brown, more sandy, day
Logged by Sample Ir	y: iterval:	TR, Ke 0-2, 7	- 2,-12				Date: <u>04/18/2023</u> QA/QC: Time: <u>[4]], 1422</u>

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		S ®	EA Engineer EA Science a	ring, P.C. and and Technolo	l Its Affiliate 9gy		Job. No. Client:	NYSDEC 754011 Owego Heat Treat cription:	Loc Apala Sample Location II 754011-552-	:ation chin, NY Ds: Z-(D-2)-O41823	
Coordina Surface E	tes: levatior	SURFAC Northing	E SOIL SAMPL	ING LOG Easting:		-	NE of pord		754661-352- Sampling	2-(2-12)-0418 9 Date/Time	23
Reference Elevation: Reference Description:					<u></u>	-	Sample Method: Start Finish hand augue, composite DATE 4/18/23 DATE 4/18 TIME 1/30 TIME 1/32				
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: Chy Weather: Partie Cl Temperature: J2' F	andy	· · · · · · · · · · · · · · · · · · ·		
0-2	1.5	\times	×	×	×		dare brown.	sendy, dy			
2-12	5.3	¥	×	*	×		brown, dry, n	ocky, fire Im	edium		
Logged by Sample Ir	7: nterval:	Ke, TP. D-2, 2.	-12				Date: <u>4 18 </u> Time: <u>1130</u> ,	1137 0	A/QC:		

		ß	EA Enginee EA Science	ring, P.C. and and Technolo	l Its Affiliate ogy	2	Job. No. Client: NYSDEC July Location 1(00253)1 Project: Owego Heat Treat Apalachin, NY Sampling Location Description: Sample Location IDs: 75404-552-(0-(0-2)-04)8 23 1 State d Apace d Apache 75404-552-(0-(0-2)-04)8 23
Coordina Surface E Reference Reference	tes: levation e Elevati e Descrij	SURFAC Northing : on: ption:	E SOIL SAMPL	ING LOG Easting:		-	E of residence near trailer Sample Method: Start Finish DATE 4/18/23 DATE 4/18/23 TIME 1345 TIME 1356
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: dry / convertige Weather: Overasit Temperature: 440F
0-2	4.5	×	×	×	\succ		dark brown, day, Meist
2-12	10.5	×	×	7	7		Sandy day, dave brain, Maist, fire
Logged by Sample Ir	7: ite r val:	TR, Ke 0-2, 2-	12				Date: 64/18/2023 QA/QC: Time: 1345,1356

Coordinate Surface Ele Reference I Reference I	es: evation: Elevatio Descrip	SURFAC Northing: on: otion:	EA Engineer EA Science a E SOIL SAMPL	ring, P.C. and and Technolo ING LOG Easting:	l Its Affiliate 9gy	-	Job. No. Client: NYSDEC JSUGIL Project: Owego Heat Treat Sampling Location Description: Front yand of abandoned harfe Sample Method: Sample Method: Mand Myer, Compasite Location Apalachin, NY Sample Location IDS: 75404 - 553 - 11-(0-2)-0418 75404 - 553 - 11-(2-12)-04 75404 - 553 - 11-(2-12)-04 75404 - 553 - 11-(2-12)-04 75404 - 553 - 11-(12-12)-04 75404 - 555 - 11-(12-12)-04 75404 - 11-
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: dM Weather: USP Temperature: WERAST
0-2	3.5	R	X	X	×		dank brown, sanay, meist, fine
2-12	4.2	R	R	\checkmark	×		brown clayer sand, motst, fine
12-24	15.7	R	X	×	×		light bown, sandy day, day
Logged by: Sample Inte	erval:	1/e,TP 0-2, 2	-12, 17	1-24]	04118/2023 QA/QC : Cime: $1200, 1121, 1234$

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Coordinates: Surface Eleva Reference Ele Reference Des	SI Notion: evation: escription:	URFACI orthing:	EA Engineer EA Science a	ring, P.C. and and Technolo ING LOG Easting:	Its Affiliate		Job. No. Client: 100231 Project: Sampling Location Desc in field W 61dg Sample hand auger,	NYSDEC Owego Heat Treat tription:	Loc Apalac Sample Location II 3540 U-553-1 35401-553-1 35401-553-1 Sampling Start DATE 4117123 TIME 16210	ation hin, NY - 16 - (1-2) - 0417 23 6 - (2-12) - 0417 23 - (12-24) - 0417 23 - (12-24) - 04173 Date/Time Finish DATE 4 / 14/23 TIME (0 5 7 2
Sample Interval (in.)	D m) TCL	VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions:	• •		
0-20	, F. (<	×	X	У		dank brown, 2	fandy		
212 2.	.2 3	×	Х	X	\succ		brown, sand	1; dry; the		i dan
12-24 14	.2 2	×	X	×	×		brown clay.	cy sandy fine		
Logged by: Sample Interva	<u>ike,</u> al: <u>0-2</u>	TR 2-11	4.1224]	Date: 041171 Time: <u>16776</u>	2023 Q	A/QC:	

Coordina Surface F Reference Reference	ttes: Elevation e Elevati e Descrij	SURFAC Northing: .: on: ption:	EA Engineer EA Science a E SOIL SAMPL	ring, P.C. and and Technolo ING LOG Easting:	l Its Affiliate Pgy	-	Job. No.Client:NYSDEC 374611 LocationVelo2531Project:Owego Heat TreatApalachin, NYSampling Location Description:Sample Location IDs: $754011 - 553 - 12 - 10 - 041723$ Sw of Abandanel hauge Near blue Shel (Fast-of) $754011 - 553 - 12 - (2-12) - 041723$ Sample Method:StartFinishDate 4/17123DATE 4/17123DATE 4/17123
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: dry Weather: Light rain Temperature: 43-E
0"-2"	0.3	X	X	X	X		brown, day
2-12"	0-0	X	X	X	×		brown, any, some iron, moist, fike (reddich streams)
12-24	13.2	X	X	X	X		darker brown, dayey sand, moist, fine
Logged by Sample In	7:	CC, TR 0 ⁴² , 2 ² 1	2, 12-24]]	Date: 04/17/1023 QA/QC: Time: 0935, 6000, 1040

Coordina Surface I	ites:	SURFAC Northing:	EA Enginee: EA Science a E SOIL SAMPI	ring, P.C. and and Technolo ING LOG ^{Easting:}	l Its Affiliate 9gy	2	Job. No. Client: NYSDEC Journal Location Ue>231 Project: Owego Heat Treat Apalachin, NY Sampling Location Description: Sample Location IDs: in brush Work bidg 75401-(513-17-(6-2)-0413) Sampling Location Description: 5401-(513-17-(12-10-0413)) in brush Work bidg 75401-(513-17-(12-10-0413)) Sampling Date/Time Sampling Date/Time	123
Referenc	e Elevati	ion:				_	Sample Method: Start Finish	
Referenc	e Descri	ption:	<u></u>			-	hend auger, composite DATE 4/17/23 DATE 4/17/23 TIME 1545 TIME 1605	•
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: UN Weather: USACT YRIF Temperature: OVERCAST	
0-2	(.2	X	×	×	\times		bruin daver, moist	
2-12	2.2	X	×	X	X		light breen, Serdy clay	
12-24	15.1	X	*	¥	×		light bown, clayey sand, moist	
Logged by Sample In	r: iterval:	1-2, 2-12	., 12-24				Date: 1545,1552,1605 QA/QC:	

- - -		R	EA Engineer	ring, P.C. and	l Its Affiliate	2	Job. No. Client: NYSDEC 754611 Location 1007531 Project: Owego Heat Treat Apalachin, NY
Coordina Surface I	ntes: Ilevation	SURFAC Northing:	EA Science a E SOIL SAMPL	and Technolo ING LOG Easting:	ogy 	_	Sampling Location Description: Sample Location IDs: Field Six of Weltmest 754011-553-20-(0-2)-041723 6ldg. 754011-553-20-(12-14)-041723 Sampling Date/Time 8
Referenc Referenc	e Elevati e Descrij	on: ption:		- <u>199</u>		-	Sample Method: Start Finish hand wyer, Composite DATE 41423 TIME 1350 TIME 1455
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: AM Weather: OVErCAST Temperature: 4307
0-2	0.6	X	×	X	X		dave brown, sandy, fine
2-12	D.4	X	×	X	X		dank brown, pelibly, Sandy, dry, fire/med.
12-24	0,4	X	X	X	X		brown, sandy, pebbly, day, fine loved.
				ŧ			
Logged by Sample Ir	7: ite rval:	Ke,TR 0-2,2-1	2, 12-2	 بر			Date: <u>04/1712023</u> QA/QC: <u>Clup MS/MSD</u> (350,1410,1455 (345) (12245)

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	$ \rightarrow $	R	EA Enginee	ring, P.C. and	l Its Affiliate	2	Job. No. Client:	NYSDEC 754611 Owego Heat Treat	Loc Apalae	ation chin, NY	
			EA Science	and Technolo	pgy		Sampling Location De	escription:	Sample Location II	D6:	
		SURFAC	E SOIL SAMPL	ING LOG			in field S	of westmark	75401-53-	·[8-(0-2]-04[7] ·18-12-12)-04[7]	3 23
Coordina	tes:	Northing	:	Easting:			blda		75401-553-1	8-41224)-0412	123
Surface F	Elevation	Ľ				_			Sampling	Date/Time	1
Referenc	e Elevati	on:					Samp	le Method:	Start	Finish	1
Referenc	e Descrij	ption:	<u>-</u>		_	-	hand auger,	composite	DATE H/:7/23 TIME 1236	DATE 4/17/23 TIME 1325	
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: Weather: Temperature:	<u>4</u>			
0-2	84	X	X	X	×		brown, claye	4, moist			
2-12	4.0	\times	X	X	X		brown, sandy	, five	- 18		
12-24	ð.0	X	X	X	X		lightbran, a	clayey, moist, -	fire	Ł	
Logged by	<i>r</i> :	Le, TR]	Date: 04/17	12023 0	A/QC:		
Sample In	terval: (<u>s-2, 2-12</u>	12-24			-	Time: <u>1236</u>	1300,1325			

		R	EA Engineer	ring, P.C. and	l Its Affiliate	2	Job. No. Client: NYSDEC Location Lo22331 Project: Owego Heat Treat Apalachin, NY
Coordina	ites:	SURFAC Northing:	EA Science a E SOIL SAMPL	and Technole ING LOG Easting:	ogy		Sampling Location Description: SE of middle blog / 754011-553-14-62-22-04173 alsandered house. bruchy, 754011-553-14-62-121-04173
Surface E	levation	:		-			Sampling Date/Time
Reference	e Elevati	on:				_	Sample Method: Start Finish
Referenc	e Descrij	ption:				-	hand anger, composite DATE 4/14/23 DATE 4/13/23 TIME 1/46 TIME 21
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: Weather: OVERLASF Temperature: 450 F
0-2	2-1	X	X	×	\times		brown, Sandy, day
2-12	2.B	×	*	×	×		light brown, Sendy, medium
12-24	11.0	X	X	X	X		ight brown, Clayey, Sand, day, medium
Logged by	r:	KC, TR				.]	Date: 04/17/2023 QA/QC:
Sample In	terval:	0-2, 2-1	12, 12-20	1		-	Time: [[46,]]:53,12:1]

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		R	EA Enginee	ring, P.C. and	l Its Affiliate	2	Job. No. Client: NYSDEC 7546 Ll IUDI Project: Owego Heat Treat	Loc Apalao	ation hin, NY
			EA Science	and Technolo	ogy		Sampling Location Description:	Sample Location II	Ds:
Coordina	tes:	SURFAC Northing:	E SOIL SAMPL	ING LOG Easting:		_	directly Not westmost site blog. Sof Marshland	(3-(3)-2)-041723 13-(2-12)-0417 13-(12-24)-0417	
Surface E	levation	1:				_	Ka	Sampling	Date/Time
Reference	e Elevati	on:		·		_	Sample Method:	Start	Finish
Reference	e Descrij	ption:				-	composite, hard anger	DATE 411712 TIME 1720	DATE 411712
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: dM Weather: OVErcaff 10.4ar Temperature: 48°F		
0-Z	1.2	K	×	X	X		Sandy, any, fine I medium		
2-12	2.1	×	×	\succ	×		dank brown, sandy, day		
12-24	2.4	X	X	X	×		brown, sandy		
Logged by	' : -	Ke, TR	<u> </u>]	Date: <u>4/17123</u> 0		
Sample In	terval:	0-2, 2-	12, 12-2	4		7	ime: 1720, 1738, 1755		

			EA Enginee	ring, P.C. and	l Its Affiliate	2	Job. No. Client: NYSDEC 75'46 (l Location Loc2531 Project: Owego Heat Treat Apalachin, NY
Coordina Surface F	tes: levation	SURFAC Northing:	E SOIL SAMPL	ING LOG Easting:		_	Sampling Location Description: Worded area WW of house Sample Location IDs: 754(11-\$3-6-6-2)042 474(011-\$3-6-(2-12)-642 474(011-\$3-(2-16)-(2-12)-642 474(011-\$3-(2-16)-(2-12)-642 474(011-\$3-(2-16)-(2-12)-642 474(011-\$3-(2-16)-(2-12)-642 474(011-\$3-(2-16)-(2-12)-642 474(011-\$3-(2-16)-(2-12)-642 474(011-\$3-(2-16)-(2-12)-642 474(011-\$3-(2-16)-(2-12)-642 474(011-\$3-(2-16)-(2-12)-(2-12)-642 474(011-\$3-(2-16)-(2-12)-(2
Reference Reference	e Elevati e Descrij	on: ption:				- -	Sample Method:StartFinishhand unger, compositeDATE 4/20/23DATE 1/20/23TIME 08:44
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: mailt Weather: OVERCAST Temperature: 380F
6-2	0.3	¥	×	×	×		Light brown, day, day, fireforestree
2-12	1.0	\times	\times	X	X		Light brown, moist clay, fire Inedium
12-20		X	×	X	X		Brown day, moist, febbly, fire/medium
				· · ·			
Logged by		K, TR		<u> </u>			Date: 4 20 2023 QA/QC:
Sample In	terval:	0-1, 1	-12, 16	-24			$\frac{0755,005,004}{0014}$

Coordina Surface E	tes:	SURFAC Northing	EA Engineer EA Science a E SOIL SAMPL	ring, P.C. and and Technolo ING LOG ^{Easting:}	l Its Affiliate	-	Job. No. Client: (402531 Project: Sampling Location Desc W of Frent y brushy are	NYSDEC 374011 Owego Heat Treat ription: Land of hange a	Loc. Apalac Sample Location ID 454-01-553-14 454-01-553-14 454-01-553-1 54-01-553-15	ation hin, NY 5: 5-(0-2)-0-12023 5-(0-2)-0-12023 (5-(12-24)-0-42023 (5-(12-24)-0-42023 Date/Time
Reference	e Elevati	on:				-	Sample	Method:	Start	Finish
Reference	e Descrij	ption:		· · · · · · · · · · · · · · · · · · ·		-	hand suger; C	iomposite	DATE UIZARA	DATEL 12012 TIME 09055
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: Moi Weather: Angele, C Temperature: 39.5	st overast	· · · · ·	
0-2	0-2	X	X	×	\times		Dalk Swam	duy, Sandy clau	۲	
2-12	1301	×	x	X	×		Light brow	n, day sandy	clay	
(2-24	777	, X	r	Q	X		Light-brown W	with day		
Logged by	r.	KETZ				· ;	Date: 0 <u>4/2</u> 6	s/2823 a	4/QC:	
Sample In	terval: (0-2,2-1	12, 1 <u>7</u> -2	4			Time: 0845	0854 0905		

Coordina Surface I Referenc Referenc	ates: Elevation e Elevati e Descrij	SURFAC Northing r: fon: ption:	EA Enginee EA Science E SOIL SAMPI	ring, P.C. and and Technolo ING LOG Easting:	l Its Affiliate	-	Job. No. Client: NYSDEC 764011 1607531 Project: Owego Heat Treat Apalachin, NY Sampling Location Description: Sample Location IDs: 254011-553-14-(2-12)-04 50 54011-553-14-(2-12)-04 50 54011-553-14-(2-12)-04 50 54011-553-14-(12-14)-54 50 Sampling Date/Time Sample Method: Start Finish Part Augle, composite DATE 412923 DATE 412923
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Ime 0949 Ime (02) Surface Conditions: Ime (02) Weather: OVErCAST, Orizzia Temperature: 36*7
0-2	0.2	\times	×	×	×		Dry, brown clayey send. Fine
2-12	0.3	×	\times	\prec	x		Lightbrown, dry, Sandy day. Fine
12-24	12.2	\checkmark	×	\times	\checkmark		Brown, dry. Clayey card, fine.
Logged by Sample In	v: aterval:	Ke, tiz 0-2, 2-1	2, [2-2-	4]	Date: $4/20/2023$ QA/QC: $4\mu\rho$ (2~12) Dime: $0949, 1050, 1021$ MS/MID (12-24)

Coordinates: Surface Elevation Reference Elevation Reference Desc	SURFAC Northing n: tion: iption:	EA Enginee EA Science : E SOIL SAMPL	ring, P.C. and and Technolo ING LOG Easting:	l Its Affiliate ogy	- - -	Job. No. Client: NYSDEC 354611 Location Project: Owego Heat Treat Sampling Location Description: Liest of cleared path to airstrip. in open field Sample Method: Sample Method: DATE J11912 DATE O16473 TME A 2015 TIME A 2015
Sample Interval (in.)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: Meister Weather: Overcest Temperature: 350 P
0-2 0.0	x	X	צ	X		brown, dry, sandy
1-12 0.0	X	¥	X	X		dark brinn dry. sandy
gged by: mple Interval:	KR, TR _ 8-2, 2-	12			I I I	Date: <u>04/19/2023</u> QA/QC: <u>dup(2-12)</u> Time: <u>0756, 0805</u>

Coordina	tes:	SURFAC Northing	EA Enginee EA Science E SOIL SAMPL	ring, P.C. and and Technolo ING LOG Easting:	l Its Affiliate ogy		Job. No. Job. No. Client: NYSDEC 754611 Project: Owego Heat Treat Sampling Location Description: brughy wooded area NE of residence	Loc Apala Sample Location II 75401 - 513 - 75401 - 513 -	ention chin, NY Ds: - (0-2) - 641 923 - (-(0-2) - (-(0-2) - 641 923 - (-(0-2) - (-(0-2) - 641 923 - (-(0-2)	
Surface E	levation Elevation					-		Sampling Date/Time		
Reference	e Descrij	ption:				-	hand anger, composite.	DATE 4/(9(23 TIME 1621	DATE 4/19123 TIME (64 %	
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: MOILE Weather: QCAF Temperature: 4805			
0-2	[.D	\times	\times	×	X		Brown, dry clay			
2-12	5.4	×	X	X	\times		Davk brown, dry day			
12-24	2.4	\times	×	\times	\times		Brown, wet/moist clay			
Logged by Sample In	terval:	1/e, T 0-2, Z-	<u>P_</u> -(2, (7-2	ч]	Date: 04/19/2023 Q Fime: 1621,1656,1648	QA/QC:		

		R	EA Engineer	ring, P.C. and	l Its Affiliate	<u> </u>	Job. No.Client:NYSDECLocation[w25]Project:Owego Heat TreatApalachin, NY
			EA Science	and Technolo	ogy		Sampling Location Description: Sample Location IDs:
		SURFAC	E SOIL SAMPL	ING LOG			Wooded area N of residence 7591011-113-5-(6-2)-14/1935
Coordina	tes:	Northing:		Easting:		_	77401-553-5-10-24)-04142
Surface E	levation	:		· ·· ·		_	Sampling Date/Time
Referenc	e Elevati	011:				_	Sample Method: Start Finish
Referenc	e Descrij	ption:					hand anger, composite DATE 4/14/23 DATE 4/19/23 TIME /406 TIME 1405
Sample Interval	PID	TCL VOC5	TCL SVOCs	TCI. Metals	TCL PCBs/	USCS Log	Surface Conditions: Weather funty
(in.)	(ppm)				Pesticides		Temperature: Yq (F
6-2	1.4	X	ـــــــــــــــــــــــــــــــــــــ	x	×		Brown, dry, etce sandy clay
2-12	1.2	x	×	×	Х		Brown, dry, clay
12-24	۲.5	×	×	×	×		Brown, moist, clax
Logged by Sample In	r: terval:	KR, TR 0-2, 2-	-12, 12-	24]	Date: <u>4/19/2023</u> QA/QC:

		SURFAC	EA Enginee EA Science : E SOIL SAMPI	ring, P.C. and and Technolo ING LOG	l Its Affiliate ogy	Job. No. Client: NYSDEC 754311 Location [402331] Project: Owego Heat Treat Apalachin, NY Sampling Location Description: Sample Location IDs: boekyard of residence 74311-553-8-(2-12)-04					
Coordina Surface E Reference	tes: levatior e Elevati	Northing: :: on:		Easting:		Sample Method: Start Finish					
Reference	e Descri	ption:				-	hand anger, composite DATE 4 (19/25 DATE 4/19/23 TIME 13/9 TIME 1342				
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: Am Weather: Overcast Temperature: U3°F				
0-Z	2.4	×	×	X	×		Braun, dry clay				
2-12	1.5	×	×	×	×		light brown dry, pebbly, day				
[2-24	7.3	X	×	X	×		Brash, dry day				
Logged by	7:	Ve, 7	2	** ,#			Date: 4/19/2023 QA/QC:				
Sample In	terval:	0-2,7	12-20				$\Gamma_{\rm ime:} = \frac{319, 1325, 1342}{319, 1342}$				

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Coordina Surface I Referenc Referenc	ates: Elevation e Elevati e Descri	SURFAC Northing tr tion: ption:	EA Enginee EA Science E SOIL SAMPI	ring, P.C. and and Technolo ING LOG Easting:	l Its Affiliate 9gy	-	Job. No.Client:NYSDEC 754011Location14027311Project:Owego Heat TreatApalachin, NYSampling Location Description:Sample Location IDs:by 4ard 100a, east of house, aerois size from Heat Treat 61dg754011-553-9-(0-2)-04112 154011-553-9-(12-10)-0411 154011-553-9-(12-10)-0411 154011-553-9-(12-10)-0411 1754011-553-9-(12-10)-0411
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	IIME ZUS IIME ZUS Surface Conditions: June June ZUS Weather: OVECCALL June June Temperature: 390F
0-2	1.2	×	يد بر	لح	×		loose clayer sand, dry, brown, fine
2-12	1.3	\times	\times	$\boldsymbol{\times}$	Х		brown, Sandy day, Semi-day, fine
(2-24	8.0	7	×	×	¥		brann, Sandy, dry, fine
Logged by Sample In	7: iterval:	Ke. TR. 0-2, 2-1	2,12-24			נ נ	Date: 04/19/2023 QA/QC: ime: 1225,1240,1255

		R®	EA Enginee	ring, P.C. and	l Its Affiliate	2	Job. No. Client: NYSDEC Location Project: Owego Heat Treat Apalachin, NY
Coordina Surface I	ates:	SURFAC Northing	EA Science and E SOIL SAMPL	and Technolo ING LOG Easting:	ogy	Sampling Location Description: Sample Location IDs: Cleaning by trailer NB of refidence 75401-553-4-(0-2)-041923 75401-553-4-(2-12)-041923 75401-553-4-(2-12)-041923 75401-553-4-(2-12)-04192 75401-553-4-(2-12)-041923	
Referenc Referenc	e Elevati e Descrij	on: ption:			······	- - -	Sample Method: Sample Method: Start Finish DATE 4/14/23 DATE4/19/3 TIME 107 10 TIME 104 4
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: GA4 Weather: 38°F' Overcast- Temperature: 38°F
0-2	1.6	\times	×	X	×		senidry brown, Clay
2-12	3,3	X	7	X	\times		Brown, try, Sandy Clay
12-24	5.5	X	×	×	\succ		Brown, Cley, dry
				×			22
Logged by Sample In	7: iterval:	Kl, TR 0-2, 2:	-12, 12-24]	Date: $4/19/2023$ QA/QC: Time: $1026, 1036, 1049$

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Coordinat	tes:	SURFAC Northing	EA Engineer EA Science a E SOIL SAMPL	ring, P.C. and and Technolo ING LOG Easting:	l Its Affiliate 9gy	2	Job. No.Client:NYSDEC 754611Location[(202531]Project:Owego Heat TreatApalachin, NYSampling Location Description:Sample Location IDs:Wooded are NE of75404-553-3-(0-2)-041123Vicidence75404-553-2-(2-)-041123Vicidence75404-553-3-(12-)-041123
Surface E Reference	levation Elevati	n: ion:				-	Sampling Date/Time Sample Method: Start Finish
Reference	Descrij	ption:				-	hand anger, composite DATE 4/19/23 DATE 4/19/23 TIME GALLS TIME 1005
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: Moist Weather: 36•F OverCast Temperature: 36•F
0-2	0.2	X	X	X	$\boldsymbol{\lambda}$		light brown, day, day
2-12	3.0	X	X	X	X		light brown, maist day
12-24	58.1	Х	X	\times	X		light brown day, moist
Logged by Sample Int	erval:	KR. TR 0-2, 2-19.	12-24			נ	Date: <u>04/19/2073</u> QA/QC:

		R	EA Enginee	ring, P.C. and	l Its Affiliate	•	Job. No.Client:NYSDECLocation[61253]Project:Owego Heat TreatApalachin, NY	<u> </u>
			EA Science a	and Technolo	ogy	. 3	Sampling Location Description: Sample Location IDs: 7540 JI-553-7-(2-2)-04/9;	23
Coordina	tes:	SURFAC Northing	E SOIL SAMPL	ING LOG Easting			Wilded area NE of residential 75401-553-7-8-12)-54142 Proze AL 754011-553-7-12-24/24142	13
Surface E	levation	:	· <u> </u>			-	Sampling Date/Time	~>
Reference	e Elevati	on:		· .	······································	-	Sample Method: Start Finish	
Reference	e Descrij	ption:				-	hand anger, composite DATE 7/19/23 DATE 4/19/23 TIME 1533 TIME 1559	1
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: Meist Weather: 54.5. Sunny Temperature: 54.5	
0-2	1.5	X	X	X	X		Brown, musst, say clay :	
2-12	1.2	X	X	×	X		Brown, moist, Clay	
12-24	l,4	X	x	X	×		Brown, Clay, Semi moist	
Logged by		KL, TR				1	Date: 14/19/2023 QA/QC:	
Sample In	terval:	0-2, 2-1	2, 12-24	•			Time: 1537, 1544, 1559	

		R	EA Engineer	ring, P.C. and	l Its Affiliate	2	Job. No.Client:NYSDECThe lienticLocation1602.531Project:Owego Heat TreatApalachin, NY
			EA Science a	ind Technolo	egy		Sampling Location Description: Sample Location IDs:
		SURFAC	E SOIL SAMPL	ING LOG			Wooded area, denser vegetin 754011-553-10-12-12)-041423
Coordina	tes:	Northing.		Easting:			Northonush Daint 754011-553-10-12-24)-041923
Surface E	levation	1:				_	Sampling Date/Time
Reference	e Elevati	on:				_	Sample Method: Start Finish
Reference	e Descrij	ption:		<u> </u>		-	hand anger, composite DATE 4/19/27 DATE 4/19/27 TIME 11/22 TIME 11/47
Sample	PID				TCL PCBs/		Surface Conditions:
Interval	(ppm)	TCL VOCs	TCL SVOCs	TCL Metals	Pesticides	USCS Log	Weather: Party claudy
()							remperature. 77-12
0-z	1.]	5×	×	×	X		diy, derthe bionon, Scady
2-12	15	X	×	×	×		dry, brown, Send y
	-				ļ		
12-24	1.6	X	x	×	×	· ·	dry, brown, sondy clay
Logged by		Ke, Th	2	r			Date: 14/19/2023 QA/QC:
Sample In	terval:	0-2, 2-	12, 12-20	4	,		Time: <u>] 22, 1 34, 1147</u>

Coordina Surface E	tes:	SURFAC Northing:	EA Engineer EA Science a E SOIL SAMPL	ring, P.C. and and Technolo ING LOG ^{Easting:}	l Its Affiliate 9gy	-	Job. No. Client: NYSDEC 754011 1602531 Project: Owego Heat Treat Apalachin, NY Sampling Location Description: Sample Location IDs: 454011-553-2-(2-12)-041 454011-553-2-(2-12)-041 454011-553-2-(12-12)-041 555011-553-2-(12-12)-041 454011-553-2-(12-12)-041 555011-553-2-(12-12)-041 555011-553-2-(12-12)-041 555011-553-2-(12-12)-041 555011-553-2-(12-12)-041 555011-553-2-(12-12)-041 555011-553-2-(12-12)-041 555011-553-2-(12-12)-041 555011-5553-2-(12-12)-041 555011-5553-2-(12-12)-041 555011-5553-2-(12-12)-041 555011-5553-2-(12-12)-041 555011-5553-2-(12-12)-041 555011-5553-2-(12-12)-041 555011-5553-2-(12-12)-041 555011-5553-2-(12-12)-041 555011-5553-2-(12-12)-041 555011-5553-2-(12-12)-041 555011-5553-2-(12-12)-041 555011-555 555
Reference	e Descrij	on: ption:				-	hand anger, composite DATE 4/19123 TIME 0844 TIME 0918
Sample Interval (in.)	PID (ppm)	TCL VOCs	TCL SVOCs	TCL Metals	TCL PCBs/ Pesticides	USCS Log	Surface Conditions: MOIS+ Weather: OMMOS+ Temperature: SLOP
0-z	D.4	×	\succ	×	×		brown, dry, Sandy clay, fine
2-12	21	×	\succ	\times	\times		600m, dry, chry, fine
n-24	702	×	\succ	\succ	×		bown, Semi-day, day, fine/medium
Loggeđ by Sample Ir	7: nterval:	<u>Ke, TL</u> 0-2, 2-	12. 12-24				Date: 04/19/2023 QA/QC: MUMUSO (2-12) Time: 0844,0855,0918
Surface Water Sampling Forms

E A®	EA Engin	eering, P.C.	and Its Aff	filiate		υ.		Job. No. Client: NYSDEC Location 754011 Project: Owego Heat Treat Apalachin, NY
	EA Scien	ce and Tech	nology					Sampling Location Description: Sample Location ID:
SURFACE WATER SAMPLE LOG					(southern portion of site) SW-01			
Coordinates:		Northing: Easting:				_		Sample Method: Grab Sheet 1 of 1
Surface Water Elevation:	:							Depth of Water Body: — Sampling Date/Time
Reference Elevation:						_		Width of Water Body: Start Finish
Reference Description:		Northern	Aven or	f Pond		_		Water Body Location 4/19423 4/19423
	II		T A7 - 1	Q14 D		· · · · · · · · · · · · · · · · · · ·		Southern Site - Normern Pond Aren 1500 TIME 1510 TIME
	Time	T	Water	Quality Par	ameters	Tama	OPD	Surface Conditions: Good
	(hrs)	рд (oH units)	(mS/cm)	(ntu)	(mg/L)	(°C)	(mV)	Description of Surface Water
	(1113)	(pri unito)	(moyem)	(IIIII)	(ing b)		(111 ¥)	
	1500	7.25	0.357	0.0	16.50	15.09	43	Clear, no current
	1505	7.58	0.356	0.0	12.32	15.08	55	Clear, no current
	1510	7.87	0.356	0.0	7.3	15.05	61	clear, no current
					re 			
Total Quantity of Water Ren Samplers: Sampling Date:	Jotal Quantity of Water Removed (gal): Sampling Time: /5/0 Jampling Date: HV, KC Split Sample With: N/A Jampling Date: 4//9/23 Sample Type: Carab							

.

- ----

Attachment C

Laboratory Reports

(Provided Separately)

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Attachment D

Data Usability Summary Reports

(To be provided with final document)

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DATA VALIDATION REPORT

Owego Heat Site

SDGs: 23D2439, 23D2453, 23D2490, 23D2671, 23F0349, and 23G1177

Chemical Analyses Performed by:

Con-Test, A Pace Analytical Laboratory

Prepared by

ENVIRONMENTAL DATA SERVICES, LTD.

Prepared for

EA Engineering, Science and Technology, Inc.

March 11, 2024

5 Brilliant Avenue, Pittsburgh, PA 15215 412.408.3288 I www.eds-pa.com



DATA USABILITY SUMMARY REPORT FOR TOTAL METALS

PROJECT: Owego Heat Treat Site

CLIENT: EA Engineering, Science, and Technology, Inc.

LABORATORY: Con-Test, A Pace Analytical Laboratory

SAMPLE DELIVERY GROUP: 23D2439

SAMPLE DATES: 04/17/2023 – 04/18/2023

This sample delivery group (SDG) consist of the following samples:

Client Sample ID	Laboratory Sample ID	Client Sample ID	Laboratory Sample ID
754011-SS3-12-(0-2)-20230417	23D2439-01	754011-SS2-7-(2-12)-20230418	23D2439-24
754011-SS3-12-(2-12)-20230417	23D2439-02	754011-SS2-4-(0-2)-20230418	23D2439-25
754011-SS3-12-(12-24)-20230417	23D2439-03	754011-SS2-4-(2-12)-20230418	23D2439-26
754011-SS3-19-(0-2)-20230417	23D2439-04	754011-SS2-5-(0-2)-20230418	23D2439-27
754011-SS3-19-(2-12)-20230417	23D2439-05	754011-SS2-5-(2-12)-20230418	23D2439-28
754011-SS3-19-(12-24)-20230417	23D2439-06	754011-SS2-3-(0-2)-20230418	23D2439-29
754011-SS3-18-(0-2)-20230417	23D2439-07	754011-SS2-3-(2-12)-20230418	23D2439-30
754011-SS3-18-(2-12)-20230417	23D2439-08	754011-SS2-6-(0-2)-20230418	23D2439-31
754011-SS3-18-(12-24)-20230417	23D2439-09	754011-SS2-6-(2-12)-20230418	23D2439-32
754011-SS3-20-(0-2)-20230417	23D2439-10	754011-SS2-1-(0-2)-20230418	23D2439-33
754011-SS3-20-(2-12)-20230417	23D2439-11	754011-SS2-1-(2-12)-20230418	23D2439-34
754011-SS3-20-(12-24)-20230417	23D2439-12	754011-SS2-2-(0-2)-20230418	23D2439-35
754011-SS3-17-(0-2)-20230417	23D2439-13	754011-SS2-2-(2-12)-20230418	23D2439-36
754011-SS3-17-(2-12)-20230417	23D2439-14	754011-SS3-11-(0-2)-20230418	23D2439-37
754011-SS3-17-(12-24)-20230417	23D2439-15	754011-SS3-11-(2-12)-20230418	23D2439-38
754011-SS3-16-(0-2)-20230417	23D2439-16	754011-SS3-11-(12-24)-20230418	23D2439-39
754011-SS3-16-(2-12)-20230417	23D2439-17	754011-SS2-10-(0-2)-20230418	23D2439-40
754011-SS3-16-(12-24)-20230417	23D2439-18	754011-SS2-10-(2-12)-20230418	23D2439-41
754011-SS3-13-(0-2)-20230417	23D2439-19	754011-SS2-9-(0-2)-20230418	23D2439-42
754011-SS3-13-(2-12)-20230417	23D2439-20	754011-SS2-9-(2-12)-20230417	23D2439-43
754011-SS3-13-(12-24)-20230417	23D2439-21	754011-FD-02-20230418	23D2439-44
754011-FD-01-20230417	23D2439-22	754011-RB-01-20230417	23D2439-45
754011-SS2-7-(0-2)-20230418	23D2439-23	754011-RB-02-20230418	23D2439-46

The samples described above were analyzed via United States Environmental Protection Agency (USEPA) SW-846 Methods 6010D and 7471B/7470A to determine the concentrations of metals including mercury.

Project specific quality assurance (QA) objectives and the USEPA Region II SOP, Hazardous Waste Support Section SOP No. HW-3a Revision 1 ISM02.2 ICP-AES Data Validation, September 2016, SOP No. HW-3c, Rev. 1 Mercury and Cyanide Data Validation, September 2016, and the United States Environmental Protection Agency (USEPA) National Functional Guidelines for Inorganic Superfund Methods Data Review, OLEM 9240.1-66 EPA-542-R-20-006, November 2020, (USEPA 2020) have been considered during validation of this data and its usability.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R", rejected. Data validation qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

All data users should note two facts. First, an "R" flag means that the associated value is unusable due to significant quality control (QC) problems, the data is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on any data tables even as a last resort. Second, no analyte concentration, even if it passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes in the samples whose holding time has been exceeded will be qualified as estimated, "J-", or unusable, "R", if holding times are grossly exceeded.

The samples in this delivery group were received by the laboratory within the proper temperature range as specified in the validation guidance.

The samples contained in this delivery group were prepared and analyzed within the holding times established in the method and validation criteria.

2. BLANK CONTAMINATION

Quality assurance blanks, which include method, trip, field, or rinse blanks, are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Trip blanks measure cross contamination during shipment. Field and rinse blanks measure cross contamination during field operations.

Method Blank Contamination

Method blanks were evaluated at the proper frequency. No problems requiring result qualification were found for this criterion with the following exception. Cobalt was positively identified in a method blank associated with the samples listed in the table below. The positive results reported for the impacted analyte in the associated samples have been evaluated and qualified as appropriate per validation guidance.

754011-FD-02-20230418	754011-SS2-9-(2-12)-20230417
754011-SS2-10-(0-2)-20230418	754011-SS3-11-(0-2)-20230418
754011-SS2-10-(2-12)-20230418	754011-SS3-11-(12-24)-20230418
754011-SS2-9-(0-2)-20230418	754011-SS3-11-(2-12)-20230418

Field or Rinse Blank Contamination

Samples 754011-RB-01-20230417 and 754011-RB-02-20230418 were submitted as rinse blanks in association with the samples in this SDG. No problems were found for this criterion with the following exception. Zinc was positively identified in rinse blank 754011-RB-01-20230417 associated with the sample collected on 04/17/2023. Positive sample results for the impacted analyte in the associated samples have been evaluated and validation action was not required on this basis.

3. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data.

Initial and Continuing Calibration Verification

The initial calibration curve and its verification demonstrate that the instrument is capable of giving acceptable performance at the beginning of the analytical sequence. The continuing calibration verification standards provide information as to the continuing stability of the calibration curve.

No problems were found for this criterion.

Initial and Continuing Calibration Blanks

Qualification of sample results due to ICB contamination affects all samples in the analytical sequence while CCB contamination only affects samples immediately after or before the non-compliant CCB. If the highest level of contamination is found in the field or method blank, all samples are qualified based on that observation.

No problems requiring result qualification were found for this criterion.

4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The matrix spike and matrix spike duplicate (MS/MSD) are generated to determine the precision and accuracy of the analytical procedure in a given sample matrix.

Sample 754011-SS3-20-(12-24)-041723 was submitted for MS/MSD evaluation in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable or did not result in a need to qualify sample results with the following exceptions. The observed MS and MSD recoveries for antimony and thallium were less than the lowest acceptance limit. The results reported for the impacted analytes in the parent sample have been qualified "UJ" on this basis.

Sample 754011-SS2-3-(2-12)-041823 was submitted for MS/MSD evaluation in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

Sample 754011-SS3-11-(0-2)-041823 was submitted for MS/MSD evaluation for ICP metals in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable with the following exceptions. The observed MS and MSD recoveries for antimony were less than the extremely low (less than 30%). The laboratory analyzed a post-digestion spike (PDS) and the observed recovery for antimony was acceptable. The result reported for the impacted analyte in the parent sample has been qualified "UJ" on this basis.

Sample 754011-RB-01-041723 was submitted for MS evaluation in association with this SDG. Upon evaluation, all accuracy indicators were acceptable.

Sample 754011-FD-02-041823 was submitted for MS/MSD evaluation for mercury in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

5. LABORATORY DUPLICATE

The laboratory duplicate sample analysis is performed to determine long-term precision of the analytical method in a given matrix. The relative percent difference (RPD) between the sample and its duplicate may be used to qualify data.

Sample 754011-RB-01-041723 was submitted for laboratory duplicate evaluation for mercury in association with this SDG. Upon evaluation, adequate laboratory precision was demonstrated.

Sample 754011-SS3-11-(0-2)-041823 was submitted for laboratory duplicate evaluation for ICP metals in association with this SDG. Upon evaluation, adequate laboratory precision was demonstrated with the exception of barium. The result reported for the impacted analyte in the parent sample has been qualified "J" on this basis.

6. LABORATORY CONTROL SAMPLE

The laboratory control sample (LCS) is a quality control sample of known concentration, which is processed along with a batch of samples. The percent recovery of the LCS can be used to assess the accuracy of the analytical procedure performed by a specific individual, during a specific time period, and utilizing the same reagents and equipment as those used for sample analyses. The LCS data is independent of sample matrix and the results may formulate a basis for qualification.

LCS and LCS duplicates were processed at the proper frequency. Upon evaluation, all precision and accuracy indicators were acceptable or did not result in a need to qualify sample results with the following exception. Poor LCS/LCS duplicate precision was not for mercury for the LCS/LCSD duplicate associated with the samples listed in the table below. The positive results reported for the impacted analyte in the associated samples have been qualified "J" on this basis.

754011-SS2-1-(0-2)-20230418	754011-SS2-1-(2-12)-20230418
754011-SS2-2-(2-12)-20230418	754011-SS3-11-(0-2)-20230418
754011-SS3-16-(0-2)-20230417	754011-SS3-16-(2-12)-20230417
754011-SS3-17-(12-24)-20230417	754011-SS3-17-(2-12)-20230417
754011-SS3-20-(2-12)-20230417	754011-SS2-2-(0-2)-20230418
754011-SS3-11-(2-12)-20230418	754011-SS3-17-(0-2)-20230417
754011-SS3-20-(12-24)-20230417	

7. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method, including sampling, analysis, and site heterogeneity.

Samples 754011-SS3-20-(2-12)-20230417 and 754011-FD-01-041723 were submitted as a field duplicate pair in association with this SDG. Upon evaluation adequate field precision was demonstrated.

Samples 754011-SS2-3-(2-12)-20230418 and 754011-FD-02-041823 were submitted as a field duplicate pair in association with this SDG. Upon evaluation adequate field precision was demonstrated with the exception of silver. The results reported for the impacted analyte in the field duplicate pair have been qualified "J" or "UJ" as appropriate on this basis.

8. ICP INTERFERENCE CHECK SAMPLE

An ICP interference check sample (ICS) must be analyzed for ICP-AES. All elements in the ICP-AES interference check sample solution ICSA should exhibited recoveries within acceptance limits (+/- CRQL of the true/mean value or +/-20% of the true value, whichever is greater) for the aqueous matrix. All elements in the ICP-AES solution ICSAB should exhibited acceptable recoveries (80-120% limits).

No problems were found for this criterion.

9. ICP SERIAL DILUTION

The serial dilution determines whether significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is sufficiently high (concentration in the original sample is greater than 50 times the MDL, the percent difference between the original determination and the serial dilution analysis (a five-fold dilution) after correction for dilution shall be less than 10. For a serial dilution analysis that does not meet the technical criteria, the action was applied to all samples of the same matrix.

Sample 754011-SS3-11-(0-2)-041823 was analyzed as a serial dilution in association with the samples in this SDG. No problems were found for this criterion with the following exceptions. Poor precision was noted for lead and zinc. The results reported for the impacted analytes in the parent sample have been qualified "J" on this basis.

10. OTHER

None.

	Were acceptance criter met?		
	Yes	No	
Metals		Major	Minor
Holding Time/Sample Handling	Х		
Method Blank			х
Field or Rinse Blank	Х		
Initial Calibration	Х		
Initial and Continuing Calibration Verification	Х		
Initial and Continuing Calibration Blanks	Х		
Matrix Spike/Matrix Spike Duplicate			х
Laboratory Duplicate			х
Laboratory Control Sample	х		
Field Duplicate			х
ICP Interference Check Sample	х		
ICP Serial Dilution			Х
Other	X		

	Table 1	
Review	Elements	Summary

	Were acceptance criteria met?		
	Yes	No	
Mercury		Major	Minor
Holding Time	х		
Calibration	х		
Blank Contamination	х		
Laboratory Control Samples			х
Matrix Spike/Matrix Spike Duplicate	х		
Laboratory Duplicate	х		
Field Duplicate	x		
Other Quality Control Data out of Specification	Х		

Major= Major data quality issue identified resulting in rejection of data. Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations. NA = Not applicable

Data Qualifier	Definition
U	The analyte was analyzed for but was not detected above the level of the
	reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the
	approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been "tentatively
	identified" and the associated numerical value represents its approximate
	concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation
	limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious
	deficiencies in meeting Quality Control (QC) criteria. The analyte may or may
	not be present in the sample.

Table 2Data Validation Qualifiers



DATA USABILITY SUMMARY REPORT FOR TOTAL METALS

PROJECT: Owego Heat Treat Site

CLIENT: EA Engineering, Science, and Technology, Inc.

LABORATORY: Con-Test, A Pace Analytical Laboratory

SAMPLE DELIVERY GROUP: 23D2490

SAMPLE DATES: 04/19/2023 – 04/20/2023

This sample delivery group (SDG) consist of the following samples:

Client Sample ID	Laboratory Sample ID	Client Sample ID	Laboratory Sample ID
754011-SS2-8-(0-2)-20230419	23D2490-01	754011-SS3-5-(2-12)-20230419	23D2490-22
754011-SS2-8-(2-12)-20230419	23D2490-02	754011-SS3-5-(12-24)-20230419	23D2490-23
754011-SS3-2-(0-2)-20230419	23D2490-03	754011-SS3-7-(0-2)-20230419	23D2490-24
754011-SS3-2-(2-12)-20230419	23D2490-04	754011-SS3-7-(2-12)-20230419	23D2490-25
754011-SS3-2-(12-24)-20230419	23D2490-05	754011-SS3-7-(12-24)-20230419	23D2490-26
754011-SS3-3-(0-2)-20230419	23D2490-06	754011-SS3-1-(0-2)-20230419	23D2490-27
754011-SS3-3-(2-12)-20230419	23D2490-07	754011-SS3-1-(2-12)-20230419	23D2490-28
754011-SS3-3-(12-24)-20230419	23D2490-08	754011-SS3-1-(12-24)-20230419	23D2490-29
754011-SS3-4-(0-2)-20230419	23D2490-09	754011-FD-03-20230419	23D2490-30
754011-SS3-4-(2-12)-20230419	23D2490-10	754011-RB-03-20230419	23D2490-31
754011-SS3-4-(12-24)-20230419	23D2490-11	754011-SS3-6-(0-2)-20230420	23D2490-32
754011-SS3-10-(0-2)-20230419	23D2490-12	754011-SS3-6-(2-12)-20230420	23D2490-33
754011-SS3-10-(2-12)-20230419	23D2490-13	754011-SS3-6-(12-24)-20230420	23D2490-34
754011-SS3-10-(12-24)-20230419	23D2490-14	754011-SS3-15-(0-2)-20230420	23D2490-35
754011-SS3-9-(0-2)-20230419	23D2490-15	754011-SS3-15-(2-12)-20230420	23D2490-36
754011-SS3-9-(2-12)-20230419	23D2490-16	754011-SS3-15-(12-24)-20230420	23D2490-37
754011-SS3-9-(12-24)-20230419	23D2490-17	754011-SS3-14-(0-2)-20230420	23D2490-38
754011-SS3-8-(0-2)-20230419	23D2490-18	754011-SS3-14-(2-12)-20230420	23D2490-39
754011-SS3-8-(2-12)-20230419	23D2490-19	754011-SS3-14-(12-24)-20230420	23D2490-40
754011-SS3-8-(12-24)-20230419	23D2490-20	754011-FD-04-20230420	23D2490-41
754011-SS3-5-(0-2)-20230419	23D2490-21	754011-RB-04-20230420	23D2490-42

The samples described above were analyzed via United States Environmental Protection Agency (USEPA) SW-846 Methods 6010D and 7471B/7470A to determine the concentrations of metals including mercury.

Project specific quality assurance (QA) objectives and the USEPA Region II SOP, Hazardous Waste Support Section SOP No. HW-3a Revision 1 ISM02.2 ICP-AES Data Validation, September 2016, SOP No. HW-3c, Rev. 1 Mercury and Cyanide Data Validation, September 2016, and the United States Environmental Protection Agency (USEPA) National Functional Guidelines for Inorganic Superfund Methods Data Review, OLEM 9240.1-66 EPA-542-R-20-006, November 2020, (USEPA 2020) have been considered during validation of this data and its usability.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R", rejected. Data validation qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

5 Brilliant Avenue, Pittsburgh, PA 15215 412.408.3288 I www.eds-pa.com All data users should note two facts. First, an "R" flag means that the associated value is unusable due to significant quality control (QC) problems, the data is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on any data tables even as a last resort. Second, no analyte concentration, even if it passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes in the samples whose holding time has been exceeded will be qualified as estimated, "J-", or unusable, "R", if holding times are grossly exceeded.

The samples in this delivery group were received by the laboratory within the proper temperature range as specified in the validation guidance.

The samples contained in this delivery group were prepared and analyzed within the holding times established in the method and validation criteria.

2. BLANK CONTAMINATION

Quality assurance blanks, which include method, trip, field, or rinse blanks, are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Trip blanks measure cross contamination during shipment. Field and rinse blanks measure cross contamination during field operations.

Method Blank Contamination

Method blanks were evaluated at the proper frequency. No problems requiring result qualification were found for this criterion.

Field or Rinse Blank Contamination

Samples 754011-RB-03-20230419 and 754011-RB-04-20230420 were submitted as rinse blanks in association with the samples in this SDG. No problems were found for this criterion.

3. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data.

Initial and Continuing Calibration Verification

The initial calibration curve and its verification demonstrate that the instrument is capable of giving acceptable performance at the beginning of the analytical sequence. The continuing calibration verification standards provide information as to the continuing stability of the calibration curve.

No problems were found for this criterion.

Initial and Continuing Calibration Blanks

Qualification of sample results due to ICB contamination affects all samples in the analytical sequence while CCB contamination only affects samples immediately after or before the non-compliant CCB. If the highest level of contamination is found in the field or method blank, all samples are qualified based on that observation.

No problems requiring result qualification were found for this criterion.

4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The matrix spike and matrix spike duplicate (MS/MSD) are generated to determine the precision and accuracy of the analytical procedure in a given sample matrix.

Sample 754011-SS3-2-(2-12)-20230419 was submitted for MS/MSD evaluation for ICP metals in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable or did not result in a need to qualify sample results with the following exception. During reanalysis, the observed MS and MSD recoveries for antimony were lower than the lowest acceptance limit. The result reported for the impacted analyte in the parent sample has been qualified "UJ" on this basis.

Sample 754011-SS3-8-(2-12)-20230419 was submitted for MS evaluation for ICP metals in association with this SDG. Upon evaluation, all accuracy indicators were acceptable with the following exception. During initial analysis, the observed MS recovery for lead was lower than the lowest acceptance limit. The result reported for the impacted analyte in the parent sample has been qualified "J-" on this basis.

Sample 754011-SS3-14-(12-24)-20230420 was submitted for MS/MSD evaluation for mercury in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable or did not result in the need to qualify sample results with the following exception. The observed MS and MSD recoveries for barium were lower than the lowest acceptance limit. The result reported for the impacted analyte in the parent sample has been qualified "J-" on this basis.

Sample 754011-RB-03-20230419 was submitted for MS evaluation for ICP metals in association with this SDG. Upon evaluation, all accuracy indicators were acceptable.

Sample 754011-FD-03-20230419 was submitted for MS/MSD evaluation for mercury in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

Sample 754011-SS3-9-(0-2)-20230419 was submitted for MS/MSD evaluation for mercury in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

Sample 754011-SS2-8-(0-2)-20230419 was submitted for MS/MSD evaluation for mercury in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

5. LABORATORY DUPLICATE

The laboratory duplicate sample analysis is performed to determine long-term precision of the analytical method in a given matrix. The relative percent difference (RPD) between the sample and its duplicate may be used to qualify data.

Sample 754011-SS3-8-(2-12)-20230419 was submitted for laboratory duplicate evaluation for ICP metals in association with this SDG. Upon evaluation, adequate laboratory precision was demonstrated.

Sample 754011-RB-03-20230419 was submitted for laboratory duplicate evaluation for ICP metals in association with this SDG. Upon evaluation, adequate laboratory precision was demonstrated.

6. LABORATORY CONTROL SAMPLE

The laboratory control sample (LCS) is a quality control sample of known concentration, which is processed along with a batch of samples. The percent recovery of the LCS can be used to assess the accuracy of the analytical procedure performed by a specific individual, during a specific time period, and utilizing the same reagents and equipment as those used for sample analyses. The LCS data is independent of sample matrix and the results may formulate a basis for qualification.

LCS and LCS duplicates were processed at the proper frequency. Upon evaluation, all precision and accuracy indicators were acceptable or did not result in a need to qualify sample results.

7. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method, including sampling, analysis, and site heterogeneity.

Samples 754011-SS2-8-(2-12)-20230419 and 754011-FD-03-20230419 were submitted as a field duplicate pair in association with this SDG. Upon evaluation adequate field precision was demonstrated.

Samples 754011-SS3-14-(2-12)-20230420 and 754011-FD-04-20230420 were submitted as a field duplicate pair in association with this SDG. Upon evaluation adequate field precision was demonstrated.

8. ICP INTERFERENCE CHECK SAMPLE

An ICP interference check sample (ICS) must be analyzed for ICP-AES. All elements in the ICP-AES interference check sample solution ICSA should exhibited recoveries within acceptance limits (+/- CRQL of the true/mean value or +/-20% of the true value, whichever is greater) for the aqueous matrix. All elements in the ICP-AES solution ICSAB should exhibited acceptable recoveries (80-120% limits).

No problems requiring result qualification were found for this criterion.

9. ICP SERIAL DILUTION

The serial dilution determines whether significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is sufficiently high (concentration in the original sample is greater than 50 times the MDL, the percent difference between the original determination and the serial dilution analysis (a five-fold dilution) after correction for dilution shall be less than 10. For a serial dilution analysis that does not meet the technical criteria, the action was applied to all samples of the same matrix.

No sample was analyzed as a serial dilution in association with the samples in this SDG.

10. OTHER

None.

	Were acceptance criteria met?		
	Yes	s No	
Metals		Major	Minor
Holding Time/Sample Handling	х		
Method Blank	х		
Field or Rinse Blank	х		
Initial Calibration	х		
Initial and Continuing Calibration Verification	х		
Initial and Continuing Calibration Blanks	х		
Matrix Spike/Matrix Spike Duplicate			Х
Laboratory Duplicate	NA		
Laboratory Control Sample	х		
Field Duplicate	х		
ICP Interference Check Sample	х		
ICP Serial Dilution	NA		
Other	X		

	Table 1	
Review	Elements	Summary

	Were acceptance criteria met?		
	Yes	No	
Mercury		Major	Minor
Holding Time	х		
Calibration	х		
Blank Contamination	х		
Laboratory Control Samples	х		
Matrix Spike/Matrix Spike Duplicate	х		
Laboratory Duplicate	NA		
Field Duplicate	х		
Other Quality Control Data out of Specification	х		

Major= Major data quality issue identified resulting in rejection of data. Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations.

NA = Not applicable

Data Qualifier	Definition
U	The analyte was analyzed for but was not detected above the level of the
	reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the
	approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been "tentatively
	identified" and the associated numerical value represents its approximate
	concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation
	limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious
	deficiencies in meeting Quality Control (QC) criteria. The analyte may or may
	not be present in the sample.

Table 2Data Validation Qualifiers



DATA USABILITY SUMMARY REPORT FOR AROCLOR PCBs AND PESTICIDES

PROJECT: Owego Heat Treat Site

CLIENT: EA Engineering, Science, and Technology, Inc.

LABORATORY: Con-Test, A Pace Analytical Laboratory

SAMPLE DELIVERY GROUP: 23D2439

SAMPLE DATES: 04/17/2023 - 04/18/2023

This sample delivery group (SDG) consist of the following samples:

Client Sample ID	Laboratory Sample ID	Client Sample ID	Laboratory Sample ID
754011-SS3-12-(0-2)-20230417	23D2439-01	754011-SS2-7-(2-12)-20230418	23D2439-24
754011-SS3-12-(2-12)-20230417	23D2439-02	754011-SS2-4-(0-2)-20230418	23D2439-25
754011-SS3-12-(12-24)-20230417	23D2439-03	754011-SS2-4-(2-12)-20230418	23D2439-26
754011-SS3-19-(0-2)-20230417	23D2439-04	754011-SS2-5-(0-2)-20230418	23D2439-27
754011-SS3-19-(2-12)-20230417	23D2439-05	754011-SS2-5-(2-12)-20230418	23D2439-28
754011-SS3-19-(12-24)-20230417	23D2439-06	754011-SS2-3-(0-2)-20230418	23D2439-29
754011-SS3-18-(0-2)-20230417	23D2439-07	754011-SS2-3-(2-12)-20230418	23D2439-30
754011-SS3-18-(2-12)-20230417	23D2439-08	754011-SS2-6-(0-2)-20230418	23D2439-31
754011-SS3-18-(12-24)-20230417	23D2439-09	754011-SS2-6-(2-12)-20230418	23D2439-32
754011-SS3-20-(0-2)-20230417	23D2439-10	754011-SS2-1-(0-2)-20230418	23D2439-33
754011-SS3-20-(2-12)-20230417	23D2439-11	754011-SS2-1-(2-12)-20230418	23D2439-34
754011-SS3-20-(12-24)-20230417	23D2439-12	754011-SS2-2-(0-2)-20230418	23D2439-35
754011-SS3-17-(0-2)-20230417	23D2439-13	754011-SS2-2-(2-12)-20230418	23D2439-36
754011-SS3-17-(2-12)-20230417	23D2439-14	754011-SS3-11-(0-2)-20230418	23D2439-37
754011-SS3-17-(12-24)-20230417	23D2439-15	754011-SS3-11-(2-12)-20230418	23D2439-38
754011-SS3-16-(0-2)-20230417	23D2439-16	754011-SS3-11-(12-24)-20230418	23D2439-39
754011-SS3-16-(2-12)-20230417	23D2439-17	754011-SS2-10-(0-2)-20230418	23D2439-40
754011-SS3-16-(12-24)-20230417	23D2439-18	754011-SS2-10-(2-12)-20230418	23D2439-41
754011-SS3-13-(0-2)-20230417	23D2439-19	754011-SS2-9-(0-2)-20230418	23D2439-42
754011-SS3-13-(2-12)-20230417	23D2439-20	754011-SS2-9-(2-12)-20230417	23D2439-43
754011-SS3-13-(12-24)-20230417	23D2439-21	754011-FD-02-20230418	23D2439-44
754011-FD-01-20230417	23D2439-22	754011-RB-01-20230417	23D2439-45
754011-SS2-7-(0-2)-20230418	23D2439-23	754011-RB-02-20230418	23D2439-46

The samples described above were analyzed via United States Environmental Protection Agency (USEPA) SW846 Method 8082A to determine the concentrations of Aroclor polychlorinated biphenyls (PCBs) and Method 8081B to determine the concentrations of organochlorine pesticides.

This Data Usability Summary Report (DUSR) has been prepared in general compliance with NYSDEC Analytical Services Protocols, USEPA National Functional Guidelines as well as the USEPA Region II SOP, Validating PCB Compounds PCBs by Gas Chromatography SW-846 Method 8082A Rev1, HW-45 Rev. 1, October 2006 and USEPA Region II SOP, Validating Pesticide Compounds Organochlorine Pesticides by Gas Chromatography SW-846 Method 8081B, HW-44 Rev. 1.1, December 2010.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R", rejected. Data qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

Per USEPA Region II Validation Guidance, "All data users should note two facts. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables even as a last resort. The second, no analyte concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error."

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded the data may not be valid. Proper sample handling and preservation also play a role in the chemical stability of analytes in the sample matrix. If samples are not collected and stored using proper containers and/or preservatives data may not be valid.

The samples in this SDG were received by the laboratory within the proper temperature range as specified in the validation guidance.

All samples were prepared and analyzed within the holding time specified in the validation guideline.

2. BLANK CONTAMINATION

Quality assurance blanks which include; method, storage, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during laboratory preparation and analysis or field activity. Method and storage blanks measure laboratory contamination. Trip blanks measure cross contamination of samples during shipment. Field and rinse blanks measure cross contamination during field operations.

Method Blank

Method blanks were prepared and analyzed at the specified frequency. Upon examination of method blank data, no analyte was positively identified at a concentration equal to or above the method detection limit (MDL) in any associated method blank.

Field Blank

Samples 754011-RB-01-20230417 and 754011-RB-02-20230418 were submitted as rinse blanks in association with the samples in this SDG. No problems were found for this criterion.

3. CALIBRATION

Percent Relative Standard Deviation and Percent Difference

Percent relative standard deviation (%RSD) is calculated from the initial calibration and is used to assess the stability of the specific compound response factor (RF) over increasing concentration. Percent difference (%D) compares the RF of the continuing calibration check to the mean RF from the initial calibration. The %D is a measure of the instrument's daily performance. For the PCB fraction, if initial calibration %RSD exceeds 20% (or the coefficient of determination greater than 0.990) or %D exceeds 20% for any analyte, all associated positive results are qualified as estimated, "J" or estimated non-detects, "UJ". If %RSD and %D grossly exceed QC criteria, non-detect data may be qualified "R". For the pesticide fraction, if %RSD exceeds limits outlined in validation guidance (or the coefficient of determination greater than 0.990), qualify all associated positive results "J". If the %D exceeds 20% for any analyte, qualify all associated positive results "J" and non-detects "UJ". If %RSD and %D grossly exceed QC criteria, non-detect data may be qualified "R".

PCB Fraction

A multi-point initial calibration employing all target Aroclors was used to demonstrate instrumental linearity. Initial calibration standards were complete for each column. The %RSD values for all analytes on both analytical columns were within validation guidelines.

Continuing calibrations were analyzed at the proper frequencies. Percent difference in a multicomponent continuing calibration verification was assessed. Values for all target Aroclors met validation criteria on the reporting column. No data qualification was necessary on this basis.

Pesticide Fraction

A multi-point initial calibration employing all target analytes was used to demonstrate instrumental linearity. Initial calibration standards were complete for each column. The %RSD values for all analytes on both analytical columns were within validation guidelines.

Continuing calibrations were analyzed at the proper frequencies. Percent difference in a multicomponent continuing calibration verification was assessed. Values for all target analytes met validation criteria on the reporting analytical column with the following exception. The observed %D for endosulfan sulfate was outside of acceptance limits on the reporting column for a continuing calibration verification (CCV) associated with sample 754011-SS2-3-(2-12)-20230418. The result reported for the impacted analyte in the associated sample has been qualified "UJ" on this basis.

4. INTERNAL STANDARD

An internal standard calibration technique was employed. Bracketed calibration verification standards are not required. However, the retention times of the internal standards and the area responses of the internal standards are to be checked. All internal standards are required to have retention time shifts less than 30 seconds from the retention time of the most recent calibration standard and maintain internal standard areas between -50 to +100%. A retention time shift of greater than 30 seconds and/or and internal standard peak area outside the limit requires reanalysis of sample. All sample extracts are spiked with internal standard prior to analysis and are included in each of the calibration standards.

Internal standards were not used for pesticide or PCB analyses.

5. SURROGATES/SYSTEM MONITORING COMPOUNDS

All samples are spiked with surrogate/system monitoring compounds (SMC) prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique.

Surrogate recovery summaries were present for the samples in this SDG. All observed surrogate standard recoveries for sample results reported by the validator were within validation acceptance limits for PCBs and pesticides.

6. COMPOUND IDENTIFICATION

The retention times of positively reported compounds must fall within the calculated retention time windows for the two-gas chromatographic (GC) columns. Additionally, the %Relative Percent Difference (RPD) of the positive results obtained on the two GC columns must be \leq 40%.

PCB Fraction

Retention Time

No positively identified analytes were reported.

Relative Percent Difference

RPD criteria are not applicable in this data set.

Pesticide Fraction

Retention Time

All criteria were acceptable.

Relative Percent Difference

All criteria were acceptable with the following exceptions. Poor dual column precision was noted for the samples and analytes listed in the table below. The impacted results were qualified as appropriate per validation guidance.

Sample	Impacted Analyte
754011-SS3-12-(0-2)-041723	4,4'-DDE
754011-SS3-12-(12-24)-041723	4,4'-DDE
754011-SS3-19-(0-2)-041723	4,4'-DDE
754011-SS3-19-(12-24)-041723	4,4'-DDT
754011-SS3-16-(0-2)-041723	4,4'-DDT
754011-SS2-10-(2-12)-041823	4,4'-DDE

7. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The matrix spike/matrix spike duplicate (MS/MSD) data are generated to determine the precision and accuracy of the analytical procedure in a given sample matrix.

Sample was submitted for 754011-SS3-20-(12-24)-041723 MS/MSD for pesticide and PCB evaluations in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable or did not result in a need to qualify sample results.

Sample was submitted for 754011-SS3-13-(12-24)-041723 MS/MSD for pesticide evaluations in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

Sample was submitted for 754011-SS2-9-(2-12)-041723 MS/MSD for pesticide evaluations in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

Sample was submitted for 754011-SS2-3-(2-12)-041823 MS/MSD for pesticide evaluations in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

Sample was submitted for 754011-SS2-3-(2-12)-041823 MS/MSD for PCB evaluations in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

Sample was submitted for 754011-SS2-9-(0-2)-041823 MS/MSD for PCB evaluations in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

8. LABORATORY CONTROL SAMPLE

A laboratory control sample (LCS) and LCS duplicate (LCSD) were processed along with the samples in each delivery group. The laboratory applied in-house QC criteria. Both in-house and Region 2 criteria were applied.

All observed precision and accuracy indicators were acceptable for all PCBs and pesticides.

9. **REPORTING**

Samples were analyzed at dilutions and/or reanalyzed as necessary due to quality control issues or sample matrix. Reporting limits were elevated accordingly.

10. OTHER QUALITY CONTROL DATA OUT OF SPECIFICATION

None.

11. DATA COMPLETENESS

All criteria were met.

12. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method including sampling, analysis, and site heterogeneity.

Samples 754011-SS3-20-(2-12)-20230417 and 754011-FD-01-041723 were submitted as a field duplicate pair in association with this SDG. Adequate field precision was demonstrated.

Samples 754011-SS2-3-(2-12)-20230418 and 754011-FD-02-041823 were submitted as a field duplicate pair in association with this SDG. Adequate field precision was demonstrated.

13. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

Overall, the laboratory data generated met the project goals and quality control criteria.

	Were acceptance criteria met?			
	Yes	N	No	
Aroclor PCBs		Major	Minor	
Holding Time/Sample Handling	х			
Method Blanks	х			
Field Blanks	х			
Percent Relative Standard Deviation and Percent Difference	х			
Internal Standard	NA			
Surrogates/System Monitoring Compounds	х			
Compound Identification/Retention Time	х			
Compound Identification/Relative Percent Difference	х			
Matrix Spike/Matrix Spike Duplicate	х			
Laboratory Control Sample	х			
Other Quality Control Data out of Specification	х			
Field Duplicate	х			
	Were acceptance criteria met			
	Were acc	ceptance crit	eria met?	
	Were acc Yes	ceptance crit	eria met? o	
Pesticides	Were acc Yes	ceptance crite N Major	eria met? o Minor	
Pesticides Holding Time/Sample Handling	Were acc Yes	ceptance crite N Major	eria met? o Minor	
Pesticides Holding Time/Sample Handling Method Blanks	Were acc Yes X X	ceptance crit N Major	eria met? o Minor	
Pesticides Holding Time/Sample Handling Method Blanks Field Blanks	Were acc Yes X X X	ceptance crit N Major	eria met? o Minor	
Pesticides Holding Time/Sample Handling Method Blanks Field Blanks Percent Relative Standard Deviation and Percent Difference	Were acc Yes X X X	ceptance crit N Major	eria met? o Minor	
Pesticides Holding Time/Sample Handling Method Blanks Field Blanks Percent Relative Standard Deviation and Percent Difference Internal Standard	Were acc Yes X X X NA	ceptance crit N Major	eria met? o Minor 	
Pesticides Holding Time/Sample Handling Method Blanks Field Blanks Percent Relative Standard Deviation and Percent Difference Internal Standard Surrogates/System Monitoring Compounds	Were acc Yes X X X NA X	ceptance crit N Major	eria met? o Minor x	
Pesticides Holding Time/Sample Handling Method Blanks Field Blanks Percent Relative Standard Deviation and Percent Difference Internal Standard Surrogates/System Monitoring Compounds Compound Identification/Retention Time	Were acc Yes X X X X NA X X X	ceptance crit N Major	eria met? o Minor x x	
Pesticides Holding Time/Sample Handling Method Blanks Field Blanks Percent Relative Standard Deviation and Percent Difference Internal Standard Surrogates/System Monitoring Compounds Compound Identification/Retention Time Compound Identification/Relative Percent Difference	Were acc Yes X X X X NA X X X	ceptance crit N Major	eria met? o Minor x x	
Pesticides Holding Time/Sample Handling Method Blanks Field Blanks Percent Relative Standard Deviation and Percent Difference Internal Standard Surrogates/System Monitoring Compounds Compound Identification/Retention Time Compound Identification/Relative Percent Difference Matrix Spike/Matrix Spike Duplicate	Were acc Yes X X X NA X X X X	ceptance crit N Major	eria met? o Minor x x x	
Pesticides Holding Time/Sample Handling Method Blanks Field Blanks Percent Relative Standard Deviation and Percent Difference Internal Standard Surrogates/System Monitoring Compounds Compound Identification/Retention Time Compound Identification/Relative Percent Difference Matrix Spike/Matrix Spike Duplicate Laboratory Control Sample	Were acc Yes X X X X NA X X X X X	ceptance crit N Major	eria met? O Minor X X X X	
Pesticides Holding Time/Sample Handling Method Blanks Field Blanks Percent Relative Standard Deviation and Percent Difference Internal Standard Surrogates/System Monitoring Compounds Compound Identification/Retention Time Compound Identification/Relative Percent Difference Matrix Spike/Matrix Spike Duplicate Laboratory Control Sample Other Quality Control Data out of Specification	Were acc Yes X X X X NA X X X X X X X	ceptance crit N Major	eria met? o Minor x x x	

Table 1 **Review Elements Summary**

Major= Major data quality issue identified resulting in rejection of data. Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations. NA = Not applicable

Table 2		
Data	Validation	Qualifiers

Data Qualifier	Definition
U	The analyte was analyzed for but was not detected above the level of the reported sample
	quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate
	concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the
	associated numerical value represents its approximate concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is
	approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting
	Quality Control (QC) criteria. The analyte may or may not be present in the sample.



DATA USABILITY SUMMARY REPORT FOR AROCLOR PCBs AND PESTICIDES

PROJECT: Owego Heat Treat Site

CLIENT: EA Engineering, Science, and Technology, Inc.

LABORATORY: Con-Test, A Pace Analytical Laboratory

SAMPLE DELIVERY GROUP: 23D2490

SAMPLE DATES: 04/19/2023 - 04/20/2023

This sample delivery group (SDG) consist of the following samples:

Client Sample ID	Laboratory Sample ID	Client Sample ID	Laboratory Sample ID
754011-SS2-8-(0-2)-20230419	23D2490-01	754011-SS3-5-(2-12)-20230419	23D2490-22
754011-SS2-8-(2-12)-20230419	23D2490-02	754011-SS3-5-(12-24)-20230419	23D2490-23
754011-SS3-2-(0-2)-20230419	23D2490-03	754011-SS3-7-(0-2)-20230419	23D2490-24
754011-SS3-2-(2-12)-20230419	23D2490-04	754011-SS3-7-(2-12)-20230419	23D2490-25
754011-SS3-2-(12-24)-20230419	23D2490-05	754011-SS3-7-(12-24)-20230419	23D2490-26
754011-SS3-3-(0-2)-20230419	23D2490-06	754011-SS3-1-(0-2)-20230419	23D2490-27
754011-SS3-3-(2-12)-20230419	23D2490-07	754011-SS3-1-(2-12)-20230419	23D2490-28
754011-SS3-3-(12-24)-20230419	23D2490-08	754011-SS3-1-(12-24)-20230419	23D2490-29
754011-SS3-4-(0-2)-20230419	23D2490-09	754011-FD-03-20230419	23D2490-30
754011-SS3-4-(2-12)-20230419	23D2490-10	754011-RB-03-20230419	23D2490-31
754011-SS3-4-(12-24)-20230419	23D2490-11	754011-SS3-6-(0-2)-20230420	23D2490-32
754011-SS3-10-(0-2)-20230419	23D2490-12	754011-SS3-6-(2-12)-20230420	23D2490-33
754011-SS3-10-(2-12)-20230419	23D2490-13	754011-SS3-6-(12-24)-20230420	23D2490-34
754011-SS3-10-(12-24)-20230419	23D2490-14	754011-SS3-15-(0-2)-20230420	23D2490-35
754011-SS3-9-(0-2)-20230419	23D2490-15	754011-SS3-15-(2-12)-20230420	23D2490-36
754011-SS3-9-(2-12)-20230419	23D2490-16	754011-SS3-15-(12-24)-20230420	23D2490-37
754011-SS3-9-(12-24)-20230419	23D2490-17	754011-SS3-14-(0-2)-20230420	23D2490-38
754011-SS3-8-(0-2)-20230419	23D2490-18	754011-SS3-14-(2-12)-20230420	23D2490-39
754011-SS3-8-(2-12)-20230419	23D2490-19	754011-SS3-14-(12-24)-20230420	23D2490-40
754011-SS3-8-(12-24)-20230419	23D2490-20	754011-FD-04-20230420	23D2490-41
754011-SS3-5-(0-2)-20230419	23D2490-21	754011-RB-04-20230420	23D2490-42

The samples described above were analyzed via United States Environmental Protection Agency (USEPA) SW846 Method 8082A to determine the concentrations of Aroclor polychlorinated biphenyls (PCBs) and Method 8081B to determine the concentrations of organochlorine pesticides.

This Data Usability Summary Report (DUSR) has been prepared in general compliance with NYSDEC Analytical Services Protocols, USEPA National Functional Guidelines as well as the USEPA Region II SOP, Validating PCB Compounds PCBs by Gas Chromatography SW-846 Method 8082A Rev1, HW-45 Rev. 1, October 2006 and USEPA Region II SOP, Validating Pesticide Compounds Organochlorine Pesticides by Gas Chromatography SW-846 Method 8081B, HW-44 Rev. 1.1, December 2010.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R", rejected. Data qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

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Per USEPA Region II Validation Guidance, "All data users should note two facts. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables even as a last resort. The second, no analyte concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error."

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded the data may not be valid. Proper sample handling and preservation also play a role in the chemical stability of analytes in the sample matrix. If samples are not collected and stored using proper containers and/or preservatives data may not be valid.

The samples in this SDG were received by the laboratory within the proper temperature range as specified in the validation guidance.

All samples were prepared and analyzed within the holding time specified in the validation guideline.

2. BLANK CONTAMINATION

Quality assurance blanks which include; method, storage, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during laboratory preparation and analysis or field activity. Method and storage blanks measure laboratory contamination. Trip blanks measure cross contamination of samples during shipment. Field and rinse blanks measure cross contamination during field operations.

Method Blank

Method blanks were prepared and analyzed at the specified frequency. Upon examination of method blank data, no analyte was positively identified at a concentration equal to or above the method detection limit (MDL) in any associated method blank.

Field Blank

Samples 754011-RB-03-20230419 and 754011-RB-04-20230420 were submitted as rinse blanks in association with the samples in this sample delivery group (SDG). No problems were found for this criterion.

3. CALIBRATION

Percent Relative Standard Deviation and Percent Difference

Percent relative standard deviation (%RSD) is calculated from the initial calibration and is used to assess the stability of the specific compound response factor (RF) over increasing concentration. Percent difference (%D) compares the RF of the continuing calibration check to the mean RF from the initial calibration. The %D is a measure of the instrument's daily performance. For the PCB fraction, if initial calibration %RSD exceeds 20% (or the coefficient of determination greater than 0.990) or %D exceeds 20% for any analyte, all associated positive results are qualified as estimated, "J" or estimated non-detects, "UJ". If %RSD and %D grossly exceed QC criteria, non-detect data may be qualified "R". For the pesticide fraction, if %RSD exceeds limits outlined in validation guidance (or the coefficient of determination greater than 0.990), qualify all associated positive results "J". If the %D exceeds 20% for any analyte, qualify all associated positive results "J" and non-detects "UJ". If %RSD and %D grossly exceed QC criteria, non-detect data may be qualified "R".

PCB Fraction

A multi-point initial calibration employing all target Aroclors was used to demonstrate instrumental linearity. Initial calibration standards were complete for each column. The %RSD values for all analytes on both analytical columns were within validation guidelines.

Continuing calibrations were analyzed at the proper frequencies. Percent difference in a multicomponent continuing calibration verification was assessed. Values for all target Aroclors met validation criteria on the reporting column. No data qualification was necessary on this basis.

Pesticide Fraction

A multi-point initial calibration employing all target analytes was used to demonstrate instrumental linearity. Initial calibration standards were complete for each column. The %RSD values for all analytes on both analytical columns were within validation guidelines.

Continuing calibrations were analyzed at the proper frequencies. Percent difference in a multicomponent continuing calibration verification was assessed. Values for all target analytes met validation criteria on the reporting analytical column. No data qualification was necessary on this basis.

4. INTERNAL STANDARD

An internal standard calibration technique was employed. Bracketed calibration verification standards are not required. However, the retention times of the internal standards and the area responses of the internal standards are to be checked. All internal standards are required to have retention time shifts less than 30 seconds from the retention time of the most recent calibration standard and maintain internal standard areas between -50 to +100%. A retention time shift of greater than 30 seconds and/or and internal standard peak area outside the limit requires reanalysis of sample. All sample extracts are spiked with internal standard prior to analysis and are included in each of the calibration standards.

Internal standards were not used for pesticide or PCB analyses.

5. SURROGATES/SYSTEM MONITORING COMPOUNDS

All samples are spiked with surrogate/system monitoring compounds (SMC) prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique.

Surrogate recovery summaries were present for the samples in this SDG. All observed surrogate standard recoveries for sample results reported by the validator were within validation acceptance limits for PCBs and pesticides.

6. COMPOUND IDENTIFICATION

The retention times of positively reported compounds must fall within the calculated retention time windows for the two-gas chromatographic (GC) columns. Additionally, the %Relative Percent Difference (RPD) of the positive results obtained on the two GC columns must be \leq 40%.

PCB Fraction

Retention Time

No positively identified analytes were reported.

Relative Percent Difference

RPD criteria are not applicable in this data set.

Pesticide Fraction

Retention Time

All criteria were acceptable.

Relative Percent Difference

All criteria were acceptable with the following exceptions. Poor dual column precision was noted for the samples and analytes listed in the table below. The impacted results were qualified as appropriate per validation guidance.

Sample	Impacted Analytes
754011-SS2-8-(0-2)-041923	4,4'-DDT
754011-SS3-2-(0-2)-041923	4,4'-DDT
754011-SS3-2-(2-12)-041923	4,4'-DDE
754011-SS3-8-(2-12)-041923	4,4'-DDE
754011-SS3-7-(12-24)-041923	4,4'-DDE
754011-SS3-15-(0-2)-042023	dieldrin, heptachlor epoxide

7. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The matrix spike/matrix spike duplicate (MS/MSD) data are generated to determine the precision and accuracy of the analytical procedure in a given sample matrix.

Sample was submitted for 754011-SS3-2-(2-12)-041923 MS/MSD for pesticide and PCB evaluations in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

Sample was submitted for 754011-SS3-14-(12-24)-042023 MS/MSD for pesticide and PCB evaluations in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

Sample was submitted for 754011-SS3-14-(2-12)-042023 MS/MSD for pesticide and PCB evaluations in association with this SDG. Upon evaluation, all accuracy and precision indicators were acceptable.

8. LABORATORY CONTROL SAMPLE

A laboratory control sample (LCS) and LCS duplicate (LCSD) were processed along with the samples in each delivery group. The laboratory applied in-house QC criteria. Both in-house and Region 2 criteria were applied.

All observed precision and accuracy indicators were acceptable for all PCBs and pesticides.

9. **REPORTING**

Samples were analyzed at dilutions as necessary due to sample matrix. Reporting limits were elevated accordingly.

10. OTHER QUALITY CONTROL DATA OUT OF SPECIFICATION

None.

11. DATA COMPLETENESS

All criteria were met.

12. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method including sampling, analysis, and site heterogeneity.

Samples 754011-SS2-8-(2-12)-20230419 and 754011-FD-03-20230419 were submitted as a field duplicate pair in association with this SDG. Adequate field precision was demonstrated.

Samples 754011-SS3-14-(2-12)-20230420 and 754011-FD-04-20230420 were submitted as a field duplicate pair in association with this SDG. Adequate field precision was demonstrated.

13. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

Overall, the laboratory data generated met the project goals and quality control criteria.
	Were acceptance criteria met?		
	Yes	es No	
Aroclor PCBs		Major	Minor
Holding Time/Sample Handling	х		
Method Blanks	х		
Field Blanks	х		
Percent Relative Standard Deviation and Percent Difference	х		
Internal Standard	NA		
Surrogates/System Monitoring Compounds	х		
Compound Identification/Retention Time	х		
Compound Identification/Relative Percent Difference	х		
Matrix Spike/Matrix Spike Duplicate	х		
Laboratory Control Sample	х		
Other Quality Control Data out of Specification	х		
Field Duplicate	х		
	Were acc	ceptance crit	eria met?
	Were acc Yes	ceptance crit	eria met? o
Pesticides	Were acc Yes	ceptance crite N Major	eria met? o Minor
Pesticides Holding Time/Sample Handling	Were acc Yes	ceptance crite N Major	eria met? o Minor
Pesticides Holding Time/Sample Handling Method Blanks	Were acc Yes x x x	ceptance crit N Major	eria met? o Minor
Pesticides Holding Time/Sample Handling Method Blanks Field Blanks	Were acc Yes X X X	ceptance crit N Major	eria met? o Minor
Pesticides Holding Time/Sample Handling Method Blanks Field Blanks Percent Relative Standard Deviation and Percent Difference	Were acc Yes X X X X X	ceptance crit N Major	eria met? o Minor
Pesticides Holding Time/Sample Handling Method Blanks Field Blanks Percent Relative Standard Deviation and Percent Difference Internal Standard	Were acc Yes X X X X NA	ceptance crit N Major	eria met? o Minor
Pesticides Holding Time/Sample Handling Method Blanks Field Blanks Percent Relative Standard Deviation and Percent Difference Internal Standard Surrogates/System Monitoring Compounds	Were acc Yes X X X X NA X NA	ceptance crit N Major	eria met? o Minor
Pesticides Holding Time/Sample Handling Method Blanks Field Blanks Percent Relative Standard Deviation and Percent Difference Internal Standard Surrogates/System Monitoring Compounds Compound Identification/Retention Time	Were acc Yes X X X X X NA X X X X	ceptance crit N Major	eria met? o Minor
Pesticides Holding Time/Sample Handling Method Blanks Field Blanks Percent Relative Standard Deviation and Percent Difference Internal Standard Surrogates/System Monitoring Compounds Compound Identification/Retention Time Compound Identification/Relative Percent Difference	Were acc Yes X X X X X NA X X X X	ceptance crit N Major	eria met? o Minor
Pesticides Holding Time/Sample Handling Method Blanks Field Blanks Percent Relative Standard Deviation and Percent Difference Internal Standard Surrogates/System Monitoring Compounds Compound Identification/Retention Time Compound Identification/Relative Percent Difference Matrix Spike/Matrix Spike Duplicate	Were acc Yes X X X X NA X X X X X	ceptance crit N Major	eria met? o Minor
Pesticides Holding Time/Sample Handling Method Blanks Field Blanks Percent Relative Standard Deviation and Percent Difference Internal Standard Surrogates/System Monitoring Compounds Compound Identification/Retention Time Compound Identification/Relative Percent Difference Matrix Spike/Matrix Spike Duplicate Laboratory Control Sample	Were acc Yes X X X X NA X X X X X X X	ceptance crit N Major	eria met? o Minor
Pesticides Holding Time/Sample Handling Method Blanks Field Blanks Percent Relative Standard Deviation and Percent Difference Internal Standard Surrogates/System Monitoring Compounds Compound Identification/Retention Time Compound Identification/Relative Percent Difference Matrix Spike/Matrix Spike Duplicate Laboratory Control Sample Other Quality Control Data out of Specification	Were acc Yes X X X X NA X X X X X X X X	ceptance crit N Major	eria met? o Minor

Table 1 **Review Elements Summary**

Major= Major data quality issue identified resulting in rejection of data. Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations. NA = Not applicable

Table 2		
Data	Validation	Qualifiers

Data Qualifier	Definition
U	The analyte was analyzed for but was not detected above the level of the reported sample
	quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate
	concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the
	associated numerical value represents its approximate concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is
	approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting
	Quality Control (QC) criteria. The analyte may or may not be present in the sample.



DATA USABILITY SUMMARY REPORT FOR SEMIVOLATILES

PROJECT: Owego Heat Site

CLIENT: EA Engineering, Science, and Technology, Inc.

LABORATORY: Con-Test, A Pace Analytical Laboratory

SAMPLE DELIVERY GROUPS: 23D2439

SAMPLE DATES: 04/17/2023 and 04/18/2023

The above sample delivery groups (SDGs) consist of the following samples:

Client Sample ID	Laboratory Sample ID
754011-SS3-12-(0-2)-20230417	23D2439-01
754011-SS3-12-(2-12)-20230417	23D2439-02
754011-SS3-12-(12-24)-20230417	23D2439-03
754011-SS3-19-(0-2)-20230417	23D2439-04
754011-SS3-19-(2-12)-20230417	23D2439-05
754011-SS3-19-(12-24)-20230417	23D2439-06
754011-SS3-18-(0-2)-20230417	23D2439-07
754011-SS3-18-(2-12)-20230417	23D2439-08
754011-SS3-18-(12-24)-20230417	23D2439-09
754011-SS3-20-(0-2)-20230417	23D2439-10
754011-SS3-20-(2-12)-20230417	23D2439-11
754011-SS3-20-(12-24)-20230417	23D2439-12
754011-SS3-17-(0-2)-20230417	23D2439-13
754011-SS3-17-(2-12)-20230417	23D2439-14
754011-SS3-17-(12-24)-20230417	23D2439-15
754011-SS3-16-(0-2)-20230417	23D2439-16
754011-SS3-16-(2-12)-20230417	23D2439-17
754011-SS3-16-(12-24)-20230417	23D2439-18
754011-SS3-13-(0-2)-20230417	23D2439-19
754011-SS3-13-(2-12)-20230417	23D2439-20
754011-SS3-13-(12-24)-20230417	23D2439-21
754011-FD-01-20230417	23D2439-22
754011-SS2-7-(0-2)-20230418	23D2439-23
754011-SS2-7-(2-12)-20230418	23D2439-24
754011-SS2-4-(0-2)-20230418	23D2439-25
754011-SS2-4-(2-12)-20230418	23D2439-26
754011-SS2-5-(0-2)-20230418	23D2439-27
754011-SS2-5-(2-12)-20230418	23D2439-28
754011-SS2-3-(0-2)-20230418	23D2439-29
754011-SS2-3-(2-12)-20230418	23D2439-30
754011-SS2-6-(0-2)-20230418	23D2439-31
754011-SS2-6-(2-12)-20230418	23D2439-32
754011-SS2-1-(0-2)-20230418	23D2439-33
754011-SS2-1-(2-12)-20230418	23D2439-34
754011-SS2-2-(0-2)-20230418	23D2439-35
754011-SS2-2-(2-12)-20230418	23D2439-36

Client Sample ID	Laboratory Sample ID
754011-SS3-11-(0-2)-20230418	23D2439-37
754011-SS3-11-(2-12)-20230418	23D2439-38
754011-SS3-11-(12-24)-20230418	23D2439-39
754011-SS2-10-(0-2)-20230418	23D2439-40
754011-SS2-10-(2-12)-20230418	23D2439-41
754011-SS2-9-(0-2)-20230418	23D2439-42
754011-SS2-9-(2-12)-20230417	23D2439-43
754011-FD-02-20230418	23D2439-44
754011-RB-01-20230417	23D2439-45
754011-RB-02-20230418	23D2439-46

The samples described above were analyzed via USEPA SW-846 8270E to determine the concentrations of semivolatile organic analytes (SVOAs).

Project specific quality assurance (QA) objectives, as well as the USEPA Region II SOP, Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8270D, SOP # HW-22 Rev.5, December 2010 have been considered during validation of this data and its usability.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R", rejected. Data validation qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

Per USEPA Region 2 Validation Guidance, "All data users should note two facts. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables even as a last resort. Second, no analyte concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error."

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded the data may not be valid. Proper sample handling and preservation also play a role in the chemical stability of analytes in the sample matrix. If samples are not collected and stored using proper containers and/or preservatives, data may not be valid.

The samples in SDG were received by the laboratory within the proper temperature range outlined in validation guidance.

The samples in this SDG were prepared and analyzed within the holding time specified in the validation guidelines for all initial analyses with the following exception. Sample 754011-RB-02-20230418 was extracted two days outside the required preparation holding time. The sample results were all not detected and have been qualified "UJ" in this basis.

2. BLANK CONTAMINATION

Quality assurance blanks include method, storage, trip, field, or rinse blanks. Blanks are prepared to identify any contamination, which may have been introduced into the samples during laboratory preparation and analysis or field activity. Method and storage blanks measure laboratory contamination. Trip blanks measure cross contamination during shipment. Field and rinse blanks measure cross contamination during.

Method Blanks

Method blanks were prepared and analyzed in association with the samples in this delivery group at the specified frequency. Upon examination of the method blank data, no analyte was positively identified at a concentration equal to or above the method detection limit (MDL) in any associated method blank.

Field/Rinse Blanks

Samples 754011-RB-01-20230417 and 754011-RB-02-20230418 were submitted as rinse/field blanks in association with the samples in this SDG. No problems were found for this criterion.

3. MASS SPECTROMETER TUNING

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances.

The tuning standard for semivolatiles is decafluorotriphenylphosphine (DFTPP). All tunes were fully compliant for method 8270D.

4. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative results. The initial calibration curve demonstrates that the instrument is capable of acceptable performance at the beginning of an analytical sequence. The continuing calibration verifies that the instrument is continuing to provide satisfactory daily performance. Additionally, a continuing calibration is analyzed at the end

of each 12-hour analytical sequence, denoted as a "closing" calibration verification and ascertains acceptable performance at the conclusion of the run.

Response Factor

The relative response factor (RRF) measures the instruments responses to specific chemical compounds. The response factors for the target compound list (TCL) analytes must be ≥ 0.05 in both the initial and continuing calibrations. A value less than the respective criteria indicates serious detection and quantitation problems. If the mean RRF of the initial calibration or the continuing calibration RRF is <0.05 for any analyte, those analytes detected in environmental samples will be qualified as estimated. All non-detects for those analytes will be rejected.

The RRF values in all initial and continuing calibrations were found to be acceptable in all cases.

Percent Relative Standard Deviation and Percent Difference

Percent relative standard deviation (%RSD) is calculated from the initial calibration and is used to indicate stability of a specific compound over the calibration range. Percent difference (%D) compares the response factor of the continuing calibration with the mean response factor of the initial calibration. Therefore, %D is a measure of the instruments daily performance.

The following QC criteria have been applied for this project:

The %RSD of initial calibration must be <20%.

A %RSD value outside the initial calibration limit indicates the potential for quantitation errors. For this reason, all positive and non-detected results are qualified as estimated. Severe performance failures (RSD>90%) requires rejection of non-detected results.

The %D for continuing calibration verification (CCV) must be <20%.

A value outside these limits indicates the potential for detection and quantitation errors. For these reasons, all positive results are qualified as estimated "J," and non-detects are qualified with "UJ."

All initial calibration (ICAL), initial calibration verification (ICV) and CCV %RSD and %D values were within defined QC criteria with the following exceptions.

The observed %D for 4-chloroaniline did not meet acceptance criteria for the ICV associated with the samples listed below in this SDG. The sample results reported for the impacted analyte in the associated samples were all not detected and have been qualified "UJ" on this basis.

754011-SS3-12-(0-2)-	754011-SS3-18-(0-2)-	754011-SS3-17-(2-12)-
20230417	20230417	20230417
754011-SS3-12-(2-12)-	754011-SS3-18-(12-24)-	754011-SS3-17-(12-24)-
20230417	20230417	20230417
754011-SS3-12-(12-24)-	754011-SS3-20-(0-2)-	754011-SS3-16-(0-2)-
20230417	20230417	20230417
754011-SS3-19-(0-2)-	754011-SS3-20-(2-12)-	754011-SS3-16-(2-12)-
20230417	20230417	20230417
754011-SS3-19-(2-12)-	754011-SS3-20-(12-24)-	754011-SS3-16-(12-24)-
20230417	20230417	20230417
754011-SS3-19-(12-24)-	754011-SS3-17-(0-2)-	
20230417	20230417	

The observed %D for 4-chloroaniline and benzaldehyde did not meet acceptance criteria for the ICV associated with the samples listed below in this SDG. The sample results reported for the impacted analyte in the associated samples were all not detected and have been qualified "J" or "UJ", as appropriate on this basis.

754011-SS3-18-(2-12)-	754011-SS2-5-(0-2)-	754011-SS2-2-(2-12)-
20230417	20230418	20230418
754011-SS3-13-(0-2)-	754011-SS2-5-(2-12)-	754011-SS3-11-(0-2)-
20230417	20230418	20230418
754011-SS3-13-(2-12)-	754011-SS2-3-(0-2)-	754011-SS3-11-(2-12)-
20230417	20230418	20230418
754011-SS3-13-(12-24)-	754011-SS2-3-(2-12)-	754011-SS3-11-(12-24)-
20230417	20230418	20230418
754011-FD-01-20230417	754011-SS2-6-(0-2)-	754011-SS2-10-(0-2)-
	20230418	20230418
754011-SS2-7-(0-2)-	754011-SS2-6-(2-12)-	754011-SS2-10-(2-12)-
20230418	20230418	20230418
754011-SS2-7-(2-12)-	754011-SS2-1-(0-2)-	754011-SS2-9-(0-2)-
20230418	20230418	20230418
754011-SS2-4-(0-2)-	754011-SS2-1-(2-12)-	754011-SS2-9-(2-12)-
20230418	20230418	20230417
754011-SS2-4-(2-12)-	754011-SS2-2-(0-2)-	754011-FD-02-20230418
20230418	20230418	

Please note, the laboratory did not perform closing continuing calibration verifications. Therefore, those criteria were not evaluated during validation. No qualification was applied on this basis.

5. INTERNAL STANDARDS PERFORMANCE

Internal standard performance criteria are meant to ensure that the gas chromatography/mass spectrometry (GC/MS) sensitivity and response are stable during every experimental run.

The internal standard area count must not vary by more than a factor of two from the associated continuing calibration standard. The retention time of the internal standard must not vary by more than +/- 30 seconds from the associated continuing calibration standard. The area count must be within -50% to 200% range of the associated standard. If area count is >200%, non-detected results are not qualified while positive results are qualified "J," estimated. When an observed area count is <50%, results are qualified "J" or "UJ" as appropriate; however, should area counts be <25%, all associated non-detect results are qualified "R," rejected.

The reported sample analysis had internal standard areas within acceptance criteria in all cases.

6. SURROGATES

All samples are spiked with surrogate compounds prior to sample preparation and analyses to evaluate overall laboratory performance and efficiency of the analytical technique.

The reported sample analyses had observed surrogate recoveries within the established limits with the following exceptions. The observed surrogate recovery for sample 754011-SS2-5-(0-2)-

20230418 was lower than the lowest acceptance limits. The results for the impacted sample have been qualified "J" or "UJ", as appropriate on this basis.

7. COMPOUND IDENTIFICATION

Semivolatile

The TCL compounds are identified on the GC/MS by using the analytes relative retention time (RRT) and ion spectra. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound, and have ion spectra which has a ratio of the primary and secondary ion intensities within 20% of that in the standard compound. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

All identification criteria were met. Therefore, no analytes were qualified for compound identification.

Semivolatile Tentatively Identified Compounds

Tentatively Identified Compounds (TICs) were reported by the laboratory and reviewed for quality assurance. For all TIC results where there is presumptive evidence of a match, being greater than or equal to an 85% match, the results are qualified "NJ," tentatively identified. If the non-target compound is reported as an unknown, the result is qualified "J," estimated. Likewise, if it is determined that the identification of a TIC is unacceptable, the tentative identification of the compound is changed to "unknown" and the result is qualified "J," estimated.

No semivolatile TICs were reported.

8. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The matrix spike and matrix spike duplicate (MS/MSD) are generated to determine the precision and accuracy of the analytical procedure in a given sample matrix.

Sample 754011-RB-02-041823 was submitted for MS/MSD evaluation in association with this SDG. Upon evaluation all precision and accuracy indicators were favorable or did not require qualification of sample results with the following exceptions. The observed recoveries for phenol and caprolactam were lower than the lowest acceptance limits in both the MS and MSD. The results reported for the impacted analytes in the parent sample were all not detected and have been qualified "UJ" on this basis.

Sample 754011-SS2-3-(2-12)-041823 was submitted for MS/MSD evaluation in association with this SDG. Upon evaluation all precision and accuracy indicators were favorable or did not require qualification of sample results with the following exceptions. The observed recoveries for 2,4dimethylphenol, 4-chloroaniline, and benzaldehyde were lower than the lowest acceptance limits in both the MS and MSD. The results reported for the impacted analytes in the parent sample were all not detected and have been qualified "UJ" on this basis. In addition, the observed recovery for 3,3-dichlorobenzidine was less than ten percent in both the MS and MSD. The results reported for the impacted analytes in the parent sample was not detected and has been qualified "R" on this basis.

Sample 754011-SS2-9-(0-2)-041823 was submitted for MS/MSD evaluation in association with this SDG. Upon evaluation all precision and accuracy indicators were favorable or did not require qualification of sample results with the following exceptions. The observed recoveries for

hexachlorocyclopentadiene and 4-nitroaniline were lower than the lowest acceptance limits in both the MS and MSD. The results reported for the impacted analytes in the parent sample were all not detected and have been qualified "UJ" on this basis. In addition, the observed recoveries for 3,3dichlorobenzidine and 4-chloroaniline were less than ten percent in both the MS and MSD. The results reported for the impacted analyte in the parent sample were all not detected and have been qualified "R" on this basis.

Sample 754011-SS3-20-(12-24)-041723 was submitted for MS/MSD evaluation in association with this SDG. Upon evaluation all precision and accuracy indicators were favorable or did not require qualification of sample results.

9. LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) is spiked with the same analytes at the same concentrations as the matrix spike. The LCS results are used to verify that the laboratory can perform the analysis in a clean matrix.

LCS evaluations were performed at the proper frequency and resulted in acceptable precision and accuracy with the following exceptions.

The observed recoveries for caprolactam were lower than the lowest acceptance limits in the LCS and LCSD associated with samples 754011-RB-01-20230417 and 754011-RB-02-20230418. The sample results for the impacted analyte in the associated samples were not detected and have been qualified "UJ" on this basis.

10. REPORTING

In the case of dilutions, re-extractions, and other re-analyses, the validator has selected the best and final result for reporting of each analyte. Note when dilutions were performed elevated reporting limits were provided.

11. OTHER QUALITY CONTROL DATA OUT OF SPECIFICATION

None.

12. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method, including sampling, analysis, and site heterogeneity.

Samples 754011-SS3-20-(2-12)-20230417 and 754011-FD-01-041723 were submitted as a field duplicate pair in association with these SDGs. Adequate field precision was demonstrated.

Samples 754011-SS2-3-(2-12)-20230418 and 754011-FD-02-041823 were submitted as a field duplicate pair in association with these SDGs. Adequate field precision was demonstrated.

13. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

Overall, the laboratory data generated met the project goals and quality control criteria, with the exceptions identified in this report and as summarized in Table 1.

	Table	1
Review	Elements	Summary

	Were acceptance criteria met?		
	Yes	Ν	ю
Semivolatile Organics 8270E		Major	Minor
Holding Time/Sample Handling			х
Method Blanks	х		
FieldRinse Blanks	х		
Mass Spectrometer Tuning	х		
Calibration Response Factor	х		
Calibration Percent Relative Standard Deviation and Percent			
Difference			х
Internal Standards Performance	х		
Surrogates			х
Compound Identification - Semivolatile	х		
Tentatively Identified Compounds – Semivolatile	NA		
Matrix Spike/Matrix Spike Duplicate		х	х
Laboratory Control Sample/Laboratory Control Sample			
Duplicate			Х
Other Quality Control Data out of Specification	х		
Field Duplicate	х		

Major= Major data quality issue identified resulting in rejection of data. Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations. NA = Not applicable

Data Qualifier	Definition
U	The analyte was analyzed for, but was not detected above the level of the
	reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the
	approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been "tentatively
	identified" and the associated numerical value represents its approximate
	concentration.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation
	limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious
	deficiencies in meeting Quality Control (QC) criteria. The analyte may or may
	not be present in the sample.

Table 2Data Validation Qualifiers



DATA USABILITY SUMMARY REPORT FOR SEMIVOLATILES

PROJECT: Owego Heat Site

CLIENT: EA Engineering, Science, and Technology, Inc.

LABORATORY: Con-Test, A Pace Analytical Laboratory

SAMPLE DELIVERY GROUPS: 23D2490

SAMPLE DATES: 04/19/2023 - 04/20/2023

The above sample delivery groups (SDGs) consist of the following samples:

Client Sample ID	Laboratory Sample ID
754011-SS2-8-(0-2)-20230419	23D2490-01
754011-SS2-8-(2-12)-20230419	23D2490-02
754011-SS3-2-(0-2)-20230419	23D2490-03
754011-SS3-2-(2-12)-20230419	23D2490-04
754011-SS3-2-(12-24)-20230419	23D2490-05
754011-SS3-3-(0-2)-20230419	23D2490-06
754011-SS3-3-(2-12)-20230419	23D2490-07
754011-SS3-3-(12-24)-20230419	23D2490-08
754011-SS3-4-(0-2)-20230419	23D2490-09
754011-SS3-4-(2-12)-20230419	23D2490-10
754011-SS3-4-(12-24)-20230419	23D2490-11
754011-SS3-10-(0-2)-20230419	23D2490-12
754011-SS3-10-(2-12)-20230419	23D2490-13
754011-SS3-10-(12-24)-20230419	23D2490-14
754011-SS3-9-(0-2)-20230419	23D2490-15
754011-SS3-9-(2-12)-20230419	23D2490-16
754011-SS3-9-(12-24)-20230419	23D2490-17
754011-SS3-8-(0-2)-20230419	23D2490-18
754011-SS3-8-(2-12)-20230419	23D2490-19
754011-SS3-8-(12-24)-20230419	23D2490-20
754011-SS3-5-(0-2)-20230419	23D2490-21
754011-SS3-5-(2-12)-20230419	23D2490-22
754011-SS3-5-(12-24)-20230419	23D2490-23
754011-SS3-7-(0-2)-20230419	23D2490-24
754011-SS3-7-(2-12)-20230419	23D2490-25
754011-SS3-7-(12-24)-20230419	23D2490-26
754011-SS3-1-(0-2)-20230419	23D2490-27
754011-SS3-1-(2-12)-20230419	23D2490-28
754011-SS3-1-(12-24)-20230419	23D2490-29
754011-FD-03-20230419	23D2490-30
754011-RB-03-20230419	23D2490-31
754011-SS3-6-(0-2)-20230420	23D2490-32
754011-SS3-6-(2-12)-20230420	23D2490-33
754011-SS3-6-(12-24)-20230420	23D2490-34
754011-SS3-15-(0-2)-20230420	23D2490-35
754011-SS3-15-(2-12)-20230420	23D2490-36

Client Sample ID	Laboratory Sample ID
754011-SS3-15-(12-24)-20230420	23D2490-37
754011-SS3-14-(0-2)-20230420	23D2490-38
754011-SS3-14-(2-12)-20230420	23D2490-39
754011-SS3-14-(12-24)-20230420	23D2490-40
754011-FD-04-20230420	23D2490-41
754011-RB-04-20230420	23D2490-42

The samples described above were analyzed via USEPA SW-846 8270E to determine the concentrations of semivolatile organic analytes (SVOAs).

Project specific quality assurance (QA) objectives, as well as the USEPA Region II SOP, Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8270D, SOP # HW-22 Rev.5, December 2010 have been considered during validation of this data and its usability.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R", rejected. Data validation qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

Per USEPA Region 2 Validation Guidance, "All data users should note two facts. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables even as a last resort. Second, no analyte concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error."

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded the data may not be valid. Proper sample handling and preservation also play a role in the chemical stability of analytes in the sample matrix. If samples are not collected and stored using proper containers and/or preservatives, data may not be valid.

The samples in SDG were received by the laboratory within the proper temperature range outlined in validation guidance.

The samples in this SDG were prepared and analyzed within the holding time specified in the validation guidelines for all initial analyses.

2. BLANK CONTAMINATION

Quality assurance blanks include method, storage, trip, field, or rinse blanks. Blanks are prepared to identify any contamination, which may have been introduced into the samples during laboratory preparation and analysis or field activity. Method and storage blanks measure laboratory contamination. Trip blanks measure cross contamination during shipment. Field and rinse blanks measure cross contamination during.

Method Blanks

Method blanks were prepared and analyzed in association with the samples in this delivery group at the specified frequency. Upon examination of the method blank data, no analyte was positively identified at a concentration equal to or above the method detection limit (MDL) in any associated method blank.

Field/Rinse Blanks

Samples 754011-RB-03-20230419 and 754011-RB-04-20230420 were submitted as rinse/field blanks in association with the samples in this SDG. No problems requiring qualification of sample results were found for this criterion.

3. MASS SPECTROMETER TUNING

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances.

The tuning standard for semivolatiles is decafluorotriphenylphosphine (DFTPP). All tunes were fully compliant for method 8270D.

4. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative results. The initial calibration curve demonstrates that the instrument is capable of acceptable performance at the beginning of an analytical sequence. The continuing calibration verifies that the instrument is continuing to provide satisfactory daily performance. Additionally, a continuing calibration is analyzed at the end of each 12-hour analytical sequence, denoted as a "closing" calibration verification and ascertains acceptable performance at the conclusion of the run.

Response Factor

The relative response factor (RRF) measures the instruments responses to specific chemical compounds. The response factors for the target compound list (TCL) analytes must be ≥ 0.05 in both the initial and continuing calibrations. A value less than the respective criteria indicates serious detection and quantitation problems. If the mean RRF of the initial calibration or the continuing calibration RRF is <0.05 for any analyte, those analytes detected in environmental samples will be qualified as estimated. All non-detects for those analytes will be rejected.

The RRF values in all initial and continuing calibrations were found to be acceptable in all cases.

Percent Relative Standard Deviation and Percent Difference

Percent relative standard deviation (%RSD) is calculated from the initial calibration and is used to indicate stability of a specific compound over the calibration range. Percent difference (%D) compares the response factor of the continuing calibration with the mean response factor of the initial calibration. Therefore, %D is a measure of the instruments daily performance.

The following QC criteria have been applied for this project:

The %RSD of initial calibration must be <20%.

A %RSD value outside the initial calibration limit indicates the potential for quantitation errors. For this reason, all positive and non-detected results are qualified as estimated. Severe performance failures (RSD>90%) requires rejection of non-detected results.

The %D for continuing calibration verification (CCV) must be <20%.

A value outside these limits indicates the potential for detection and quantitation errors. For these reasons, all positive results are qualified as estimated "J," and non-detects are qualified with "UJ."

All initial calibration (ICAL), initial calibration verification (ICV) and CCV %RSD and %D values were within defined QC criteria with the following exceptions.

The observed %D for 4-chloroaniline did not meet acceptance criteria for the ICV associated with the samples listed in the table below in this SDG. The sample results reported for the impacted analyte in the associated samples were all not detected and have been qualified estimated "UJ" on this basis.

754011-SS3-6-(0-2)-	754011-SS3-15-(2-12)-	754011-SS3-14-(12-24)-
20230420	20230420	20230420
754011-SS3-6-(2-12)-	754011-SS3-15-(12-24)-	754011-FD-04-20230420
20230420	20230420	
754011-SS3-6-(12-24)-	754011-SS3-14-(0-2)-	
20230420	20230420	
754011-SS3-15-(0-2)-	754011-SS3-14-(2-12)-	
20230420	20230420	

The observed %D for 4-chloroaniline and benzaldehyde did not meet acceptance criteria for the ICV associated with the samples listed in the table below in this SDG. The sample results reported for the impacted analyte in the associated samples were all not detected and have been qualified estimated "J" or "UJ" as appropriate on this basis.

754011-SS3-10-(0-2)-	754011-SS3-8-(2-12)-	754011-SS3-7-(2-12)-
20230419	20230419	20230419
754011-SS3-10-(2-12)-	754011-SS3-8-(12-24)-	754011-SS3-7-(12-24)-
20230419	20230419	20230419
754011-SS3-10-(12-24)-	754011-SS3-5-(0-2)-	754011-SS3-1-(0-2)-
20230419	20230419	20230419
754011-SS3-9-(0-2)-	754011-SS3-5-(2-12)-	754011-SS3-1-(2-12)-
20230419	20230419	20230419
754011-SS3-9-(2-12)-	754011-SS3-5-(12-24)-	754011-SS3-1-(12-24)-
20230419	20230419	20230419
754011-SS3-9-(12-24)-	754011-SS3-7-(0-2)-	754011-FD-03-20230419
20230419	20230419	
754011-SS3-8-(0-2)-	754011-RB-04-20230420	754011-RB-03-20230419
20230419		

Please note, the laboratory did not perform closing continuing calibration verifications. Therefore, those criteria were not evaluated during validation. No qualification was applied on this basis.

5. INTERNAL STANDARDS PERFORMANCE

Internal standard performance criteria are meant to ensure that the gas chromatography/mass spectrometry (GC/MS) sensitivity and response are stable during every experimental run.

The internal standard area count must not vary by more than a factor of two from the associated continuing calibration standard. The retention time of the internal standard must not vary by more than +/- 30 seconds from the associated continuing calibration standard. The area count must be within -50% to 200% range of the associated standard. If area count is >200%, non-detected results are not qualified while positive results are qualified "J," estimated. When an observed area count is <50%, results are qualified "J" or "UJ" as appropriate; however, should area counts be <25%, all associated non-detect results are qualified "R," rejected.

The reported sample analysis had internal standard areas within acceptance criteria in all cases.

6. SURROGATES

All samples are spiked with surrogate compounds prior to sample preparation and analyses to evaluate overall laboratory performance and efficiency of the analytical technique.

The reported sample analyses had observed surrogate recoveries within the established limits.

7. COMPOUND IDENTIFICATION

Semivolatile

The TCL compounds are identified on the GC/MS by using the analytes relative retention time (RRT) and ion spectra. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound, and have ion spectra which has a ratio of the primary and secondary ion intensities within 20% of that in the standard compound. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

All identification criteria were met. Therefore, no analytes were qualified for compound identification.

Semivolatile Tentatively Identified Compounds

Tentatively Identified Compounds (TICs) were reported by the laboratory and reviewed for quality assurance. For all TIC results where there is presumptive evidence of a match, being greater than or equal to an 85% match, the results are qualified "NJ," tentatively identified. If the non-target compound is reported as an unknown, the result is qualified "J," estimated. Likewise, if it is determined that the identification of a TIC is unacceptable, the tentative identification of the compound is changed to "unknown" and the result is qualified "J," estimated.

No semivolatile TICs were reported.

8. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The matrix spike and matrix spike duplicate (MS/MSD) are generated to determine the precision and accuracy of the analytical procedure in a given sample matrix.

Sample 754011-SS3-10-(0-2)-041923 was submitted for MS/MSD evaluation in association with this SDG. Upon evaluation all precision and accuracy indicators were favorable or did not require qualification of sample results with the following exceptions. The observed percent recoveries for the analytes listed in the table below were lower than the lowest acceptance limits in both the MS and MSD. The results reported for the impacted analytes in the parent sample were all not detected and have been gualified estimated "UJ" on this basis.

benzaldehyde	hexachloroethane
3-nitroaniline	4-nitroaniline

In addition, the observed percent recoveries for 3,3-dichlorobenzidine and 4-chloroaniline were less than ten percent in both the MS and MSD. The results reported for the impacted analytes in the parent sample were all not detected and have been qualified rejected, "R", on this basis.

Sample 754011-SS3-14-(12-24)-042023 was submitted for MS/MSD evaluation in association with this SDG. Upon evaluation all precision and accuracy indicators were favorable or did not require qualification of sample results.

Sample 754011-SS3-2-(2-12)-041923 was submitted for MS/MSD evaluation in association with this SDG. Upon evaluation all precision and accuracy indicators were favorable or did not require qualification of sample results with the following exceptions. The observed percent recoveries for 3,3-dichlorobenzidine were lower than the lowest acceptance limit in both the MS and MSD. The result reported for the impacted analyte in the parent sample was not detected and has been qualified estimated "UJ" on this basis.

9. LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) is spiked with the same analytes at the same concentrations as the matrix spike. The LCS results are used to verify that the laboratory can perform the analysis in a clean matrix.

LCS evaluations were performed at the proper frequency and resulted in acceptable precision and accuracy with the following exceptions.

The observed percent recoveries for caprolactam were lower than the lowest acceptance limit in the LCS and LCSD associated with samples 754011-RB-03-20230419 and 754011-RB-04-20230420. The sample results for the impacted analyte in the associated samples were not detected and have been qualified estimated "UJ" on this basis.

10. REPORTING

In the case of dilutions, re-extractions, and other re-analyses, the validator has selected the best and final result for reporting of each analyte. Note when dilutions were performed elevated reporting limits were provided.

11. OTHER QUALITY CONTROL DATA OUT OF SPECIFICATION

None.

12. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method, including sampling, analysis, and site heterogeneity.

Samples 754011-SS2-8-(2-12)-20230419 and 754011-FD-03-20230419 were submitted as a field duplicate pair in association with these SDGs. Adequate field precision was demonstrated.

Samples 754011-SS3-14-(2-12)-20230420 and 754011-FD-04-20230420 were submitted as a field duplicate pair in association with these SDGs. Adequate field precision was demonstrated.

13. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

Overall, the laboratory data generated met the project goals and quality control criteria, with the exceptions identified in this report and as summarized in Table 1.

	Table	1
Review	Elements	Summary

	Were acceptance criteria met?		
	Yes	Ν	lo
Semivolatile Organics 8270E		Major	Minor
Holding Time/Sample Handling	х		
Method Blanks	х		
FieldRinse Blanks	х		
Mass Spectrometer Tuning	х		
Calibration Response Factor	х		
Calibration Percent Relative Standard Deviation and Percent			
Difference			х
Internal Standards Performance	х		
Surrogates	х		
Compound Identification - Semivolatile	х		
Tentatively Identified Compounds – Semivolatile	NA		
Matrix Spike/Matrix Spike Duplicate		Х	х
Laboratory Control Sample/Laboratory Control Sample			
Duplicate			Х
Other Quality Control Data out of Specification	x		
Field Duplicate	Х		

Major= Major data quality issue identified resulting in rejection of data. Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations. NA = Not applicable

Data Qualifier	Definition
U	The analyte was analyzed for, but was not detected above the level of the
	reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the
	approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been "tentatively
	identified" and the associated numerical value represents its approximate
	concentration.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation
	limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious
	deficiencies in meeting Quality Control (QC) criteria. The analyte may or may
	not be present in the sample.

Table 2Data Validation Qualifiers



DATA USABILITY SUMMARY REPORT FOR VOLATILES

PROJECT: Owego Heat Site

CLIENT: EA Engineering, Science and Technology, Inc.

LABORATORY: Con-Test, Pace Analytical Laboratory

SAMPLE DELIVERY GROUP: 23G1177

SAMPLE DATES: 07/07/2023

This sample delivery group consist of the following samples:

Sample Identification	Laboratory Identification
754011-SS-1	23G1177-01
754011-IA-1	23G1177-02
754011-OA-1	23G1177-03

The samples described above were analyzed via methods USEPA TO-15 and/or USEPA TO-15 SIM to determine the concentrations of trace volatile organic analytes (VOAs) in air samples.

Project specific quality assurance (QA) objectives, as well as the USEPA Region II SOP, Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15 Data Validation, HW-31, Rev. 6, June 2014 have been considered during validation of this data and its usability.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R", rejected. Data validation qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

Per USEPA Region 2 Validation Guidance, "All data users should note two facts. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables even as a last resort. Second, no analyte concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error."

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Proper sample handling and preservation also play a role in the chemical stability of analytes in the sample matrix. If samples are not collected and stored using proper containers and/or preservatives, data may not be valid.

The samples in this delivery group were prepared and analyzed within the holding time specified in the validation guidelines.

2. BLANK CONTAMINATION

Quality assurance blanks include method, storage, trip, field, or rinse blanks. Blanks are prepared to identify any contamination, which may have been introduced into the samples during preparation and analysis or field activity. Method and storage blanks measure laboratory contamination. Trip blanks measure cross contamination during shipment. Field and rinse blanks measure cross contaminations.

Method Blanks

Method blanks were prepared and analyzed in association with the samples in this delivery group at the specified frequency. Upon examination of method blank data, no analyte was positively identified at a concentration equal to or above the method detection limit (MDL).

Storage Blanks

No storage blanks were required for this sample delivery group (SDG).

Trip Blanks

No trip blanks were submitted in association with this SDG.

Field Blanks

No field blanks were submitted in association with this SDG.

3. MASS SPECTROMETER TUNING

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances.

The tuning standard for volatiles is bromofluorobenzene (BFB).

All tunes associated with this SDG were fully compliant.

4. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative results. The initial calibration curve demonstrates that the instrument is capable of giving acceptable performance at the beginning of an analytical sequence. The continuing calibration verifies that the instrument is continuing to provide satisfactory daily performance. Additionally, a continuing calibration is analyzed at the end of each 24-hour analytical sequence, denoted as a "closing" calibration verification and ascertains acceptable performance at the conclusion of the analytical sequence.

Note, no closing continuing calibration verifications were performed in association with this SDG.

Response Factor

The relative response factor (RRF) measures the instruments responses to specific chemical compounds. The RRFs for the volatile organic analysis (VOA) target compound list (TCL) must be ≥ 0.05 in both the initial and continuing calibrations with exception of poor response compounds, where RRFs must be ≥ 0.01 . Additionally, the RRF in the closing continuing calibration must be ≥ 0.01 . A value less than the respective criteria indicates serious detection and quantitation problems. If the mean RRF of the initial calibration or the continuing calibration RRF is <0.05, or <0.01 for poor response compounds, or the RRF for the closing continuing calibration is <0.01 for any analyte, those analytes detected in environmental samples will be qualified as estimated. All non-detects for those analytes will be rejected.

The RRF values in all initial and continuing calibrations were found to be acceptable in all cases.

Percent Relative Standard Deviation and Percent Deviation

Percent relative standard deviation (%RSD) is calculated from the initial calibration and is used to indicate stability of a specific compound over the calibration range. Percent deviation (%D) compares the response factor of the continuing calibration with the mean response factor of the initial calibration. Therefore, %D is a measure of the instrument's daily performance.

The following QC criteria have been applied for this project:

The %RSD of initial calibration must be <30%.

An RSD value outside initial calibration limit indicates the potential for quantitation errors. For this reason, all positive results are qualified as estimated. Severe performance failures (RSD >90%) require qualification of non-detected results as well.

The %D for continuing calibration must be <30%.

A value outside these limits indicates the potential for detection and quantitation errors. For these reasons, all positive results are qualified as estimated, and non-detects are qualified with "UJ".

All initial calibration and continuing calibration %RSD and %D values were within defined QC criteria with the following exceptions.

The %D value for naphthalene was outside of acceptance limits for the initial calibration verification (ICV) associated with all samples in this SDG. The results reported for naphthalene have been qualified "UJ" or "J", as appropriate on this basis.

The %D value for carbon tetrachloride was outside of acceptance limits for the continuing calibration verification (CCV) associated with all samples in this SDG. The results reported for carbon tetrachloride have been qualified "UJ" or "J", as appropriate on this basis.

5. INTERNAL STANDARDS PERFORMANCE

Internal standard performance criteria are meant to ensure that the gas chromatography/mass spectrometry (GC/MS) sensitivity and response are stable during every experimental run.

The internal standard area count must not vary by more than a factor of two from the associated continuing calibration standard. The retention time of the internal standard must not vary by more than +/- 20 seconds from the associated continuing calibration standard. The area count must be within -60% to +140% range of the associated standard. If area count is >140% non-detected results are not qualified while positive results are qualified "J", estimated. However, when an observed area count is <60%, positive results are qualified "J" estimated while non-detected results are rejected.

The reported analysis for all samples, lab control sample, and associated method blanks had internal standard areas and retention times within QC criteria in all cases.

6. COMPOUND IDENTIFICATION

Volatile

The TCL compounds are identified on the GC/MS by using the analytes relative retention time (RRT) and ion spectra. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound, and have ion spectra which has a ratio of the primary and secondary ion intensities within 20% of that in the standard compound. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

All identification criteria were met. Therefore, no analytes were qualified for compound identification.

Volatile Tentatively Identified Compounds

Tentatively Identified Compounds (TICs) were reported by the laboratory and reviewed for quality assurance. For all TIC results where there is presumptive evidence of a match, being greater than or equal to an 85% match, the results are qualified "NJ", tentatively identified. If the non-target compound is reported as an unknown, the result is qualified "J", estimated. Likewise, if it is determined that the identification of a TIC is unacceptable, the tentative identification of the compound is changed to "unknown" and the result is qualified "J", estimated.

Tentatively identified compounds were not reported by the laboratory and were not evaluated for this program.

7. LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) is spiked with the same analytes at the same concentrations as the matrix spike. The LCS results are used to verify that the laboratory can perform the analysis in a clean matrix.

All LCS accuracy indicators were favorable with the following exceptions.

The observed recovery for isopropanol was lower than the lowest acceptance limit. All samples in this SDG are associated with the non-compliant LCS. Potential low bias is indicated. The results reported for isopropanol in the associated samples have been qualified "UJ" or "J", as appropriate on this basis.

8. **REPORTING**

No problems were found for this criterion.

9. OTHER QUALITY CONTROL DATA OUT OF SPECIFICATION

None.

10. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method, including sampling, analysis, and site heterogeneity.

No samples were submitted as a field duplicate pair in association with this SDG.

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

Clean canisters were used to transport air samples in this SDG. All criteria were met to ensure containers were appropriate for sample storage.

Overall, the laboratory data generated met the project goals and quality control criteria, with the exceptions identified in this report and as summarized in Table 1.

Table 1 **Review Elements Summary**

	Were acc	eptance crit	eria met?
	Yes	N	0
Volatiles		Major	Minor
Holding Time	х		
Method Blanks	х		
Storage Blanks	NA		
Trip Blanks	NA		
Field Blanks	NA		
Mass Spectrometer Tuning	х		
Calibration Response Factor	х		
Calibration Percent Relative Standard Deviation and Percent Difference			х
Internal Standards	х		
Compound Identification - Volatile	х		
Tentatively Identified Compounds - Volatile	NA		
Laboratory Control Sample			х
Reporting	х		
Other Quality Control Data out of Specification	Х		
Field Duplicate	NA		

Major= Major data quality issue identified resulting in rejection of data. Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations. NA = Not applicable

Data Qualifier	Definition
U	The analyte was analyzed for but was not detected above the level of the
	reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the
	approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been "tentatively
	identified" and the associated numerical value represents its approximate
	concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation
	limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious
	deficiencies in meeting Quality Control (QC) criteria. The analyte may or may
	not be present in the sample.

Table 2Data Validation Qualifiers



DATA USABILITY SUMMARY REPORT FOR VOLATILES

PROJECT: Owego Heat Site

CLIENT: EA Engineering, Science, and Technology, Inc.

LABORATORY: Con-Test, A Pace Analytical Laboratory

SAMPLE DELIVERY GROUPS: 23D2439

SAMPLE DATES: 04/17/2023 and 04/18/2023

The above sample delivery groups (SDGs) consist of the following samples:

Client Sample ID	Laboratory Sample ID	
754011-SS3-12-(0-2)-20230417	23D2439-01	
754011-SS3-12-(2-12)-20230417	23D2439-02	
754011-SS3-12-(12-24)-20230417	23D2439-03	
754011-SS3-19-(0-2)-20230417	23D2439-04	
754011-SS3-19-(2-12)-20230417	23D2439-05	
754011-SS3-19-(12-24)-20230417	23D2439-06	
754011-SS3-18-(0-2)-20230417	23D2439-07	
754011-SS3-18-(2-12)-20230417	23D2439-08	
754011-SS3-18-(12-24)-20230417	23D2439-09	
754011-SS3-20-(0-2)-20230417	23D2439-10	
754011-SS3-20-(2-12)-20230417	23D2439-11	
754011-SS3-20-(12-24)-20230417	23D2439-12	
754011-SS3-17-(0-2)-20230417	23D2439-13	
754011-SS3-17-(2-12)-20230417	23D2439-14	
754011-SS3-17-(12-24)-20230417	23D2439-15	
754011-SS3-16-(0-2)-20230417	23D2439-16	
754011-SS3-16-(2-12)-20230417	23D2439-17	
754011-SS3-16-(12-24)-20230417	23D2439-18	
754011-SS3-13-(0-2)-20230417	23D2439-19	
754011-SS3-13-(2-12)-20230417	23D2439-20	
754011-SS3-13-(12-24)-20230417	23D2439-21	
754011-FD-01-20230417	23D2439-22	
754011-SS2-7-(0-2)-20230418	23D2439-23	
754011-SS2-7-(2-12)-20230418	23D2439-24	
754011-SS2-4-(0-2)-20230418	23D2439-25	
754011-SS2-4-(2-12)-20230418	23D2439-26	
754011-SS2-5-(0-2)-20230418	23D2439-27	
754011-SS2-5-(2-12)-20230418	23D2439-28	
754011-SS2-3-(0-2)-20230418	23D2439-29	
754011-SS2-3-(2-12)-20230418	23D2439-30	
754011-SS2-6-(0-2)-20230418	23D2439-31	
754011-SS2-6-(2-12)-20230418	23D2439-32	
754011-SS2-1-(0-2)-20230418	23D2439-33	
754011-SS2-1-(2-12)-20230418	23D2439-34	
754011-SS2-2-(0-2)-20230418	23D2439-35	
754011-SS2-2-(2-12)-20230418	23D2439-36	
754011-SS3-11-(0-2)-20230418	23D2439-37	

Client Sample ID	Laboratory Sample ID
754011-SS3-11-(2-12)-20230418	23D2439-38
754011-SS3-11-(12-24)-20230418	23D2439-39
754011-SS2-10-(0-2)-20230418	23D2439-40
754011-SS2-10-(2-12)-20230418	23D2439-41
754011-SS2-9-(0-2)-20230418	23D2439-42
754011-SS2-9-(2-12)-20230417	23D2439-43
754011-FD-02-20230418	23D2439-44
754011-RB-01-20230417	23D2439-45
754011-RB-02-20230418	23D2439-46

The samples described above were analyzed via USEPA SW-846 8260C to determine the concentrations of low/medium volatile organic analytes (VOAs).

Project specific quality assurance (QA) objectives, as well as the USEPA Region II SOP, Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B & 8260C, SOP NO. HW-24 Revision 4, September 2014 have been considered during validation of this data and its usability.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R," rejected. Data validation qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

Per USEPA Region 2 Validation Guidance, "All data users should note two facts. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables even as a last resort. Second, no analyte concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error."

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Proper sample handling and preservation also play a role in the chemical stability of analytes in the sample matrix. If samples are not collected and stored using proper containers and/or preservatives, data may not be valid.

The samples in this SDG were received by the laboratory within the proper temperature range as specified in the validation guidance.

The samples in this SDG were prepared and analyzed within the holding time specified in the validation guidelines.

2. BLANK CONTAMINATION

Quality assurance blanks include method, storage, trip, field, or rinse blanks. Blanks are prepared to identify any contamination, which may have been introduced into the samples during preparation and analysis or field activity. Method and storage blanks measure laboratory contamination. Trip blanks measure cross contamination during shipment. Field and rinse blanks measure cross contamination during field operations.

Method Blanks

Method blanks were prepared and analyzed in association with the samples in these SDGs at the specified frequency. Upon examination of method blank data, no analyte was positively identified at a concentration equal to or above the method detection limit (MDL) in any associated method blank.

Storage Blanks

No storage blanks were submitted in association with these SDGs.

Trip Blanks

No sample was submitted as a trip blank in association with all samples in this SDG.

Field Blanks

Sample 754011-RB-01-20230417 was submitted as a rinse blank in association with the samples collected on 04/17/2023 in this SDG. Acetone was positively identified in the rinse blank. Positive sample results for acetone in the associated samples have been qualified per validation guidance.

Sample 754011-RB-02-20230418 was submitted as a rinse blank in association with the samples collected on 04/18/2023 in this SDG. Acetone was positively identified in the rinse blank. Positive sample results for acetone in the associated samples have been qualified per validation guidance.

3. MASS SPECTROMETER TUNING

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances.

The tuning standard for volatiles is bromofluorobenzene (BFB). All tunes associated with these SDGs were fully compliant.

4. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative results. The initial calibration curve demonstrates that the instrument is capable of giving acceptable performance at the beginning of an analytical sequence. The continuing calibration verifies that the instrument is continuing to provide satisfactory daily performance. Additionally, a continuing calibration is analyzed at the end of each 12-hour analytical sequence, denoted as a "closing" calibration verification, and ascertains acceptable performance at the conclusion of the analytical sequence.

Response Factor

The relative response factor (RRF) measures the instruments responses to specific chemical compounds. The RRFs for the VOA target compound list (TCL) compounds must be greater than the RRFs listed in Region II validation guidelines. A value less than the respective criteria indicates serious detection and quantitation problems. If the mean RRF of the initial calibration or the continuing calibration RRF is below the specified limit for any analyte, those analytes detected in environmental samples will be qualified as estimated. All non-detects for those analytes will be rejected.

The RRF values in all initial and continuing calibrations for method 8260D were found to be acceptable with the following exception. The RRF for 1,4-dioxane was extremely low (<0.01). The 1,4-dioxane results in all the samples were not detected and have been qualified "R" on this basis.

Percent Relative Standard Deviation and Percent Deviation

Percent relative standard deviation (%RSD) is calculated from the initial calibration and is used to indicate stability of a specific compound over the calibration range. Percent deviation (%D) compares the response factor of the continuing calibration with the mean response factor of the initial calibration. Therefore, %D is a measure of the instrument's daily performance.

The following QC criteria have been applied for this project:

The %RSD of initial calibration must be ≤20%.

A %RSD value outside initial calibration limit indicates the potential for quantitation errors. For this reason, all positive results are qualified as estimated and non-detect results are qualified using professional judgement.

The %D for opening continuing calibration must be ≤30%

A value outside these limits indicates the potential for detection and quantitation errors. For these reasons, all positive results are qualified as "J," estimated, and non-detects are qualified with "UJ."

All initial calibration and continuing calibration %RSD and %D values were within defined QC criteria with the following exceptions.

The %D for dichlorodifluoromethane was outside of acceptance criteria in the continuing calibration verification (CCV) associated with the samples 754011-RB-01-20230417 and 754011-RB-02-

20230418 in this SDG. The results reported for the impacted analytes were all not detected and have been qualified "UJ" on this basis.

The %D for acetone, bromomethane, and dichlorodifluoromethane were outside of acceptance criteria in the initial calibration verification (ICV) and methyl acetate was outside of acceptance criteria in the CCV associated with the samples listed below in this SDG. The results reported for the impacted analytes have been qualified "J" or "UJ", as appropriate on this basis.

754011-SS3-11-(0-2)-	754011-SS2-10-(0-2)-	754011-SS2-9-(2-12)-
20230418	20230418	20230417
754011-SS3-11-(2-12)-	754011-SS2-10-(2-12)-	754011-FD-02-20230418
20230418	20230418	
754011-SS3-11-(12-24)-	754011-SS2-9-(0-2)-	
20230418	20230418	

The %D for carbon disulfide and dichlorodifluoromethane were outside of acceptance criteria in the ICV and bromomethane, chloroethane, and chloromethane were outside of acceptance criteria in one or more CCV's associated with the samples listed below in this SDG. The results reported for the impacted analytes were all not detected and have been gualified "UJ" on this basis.

754011-SS3-12-(0-2)-	754011-SS3-17-(0-2)-	754011-SS2-4-(0-2)-
20230417	20230417	20230418
754011-SS3-12-(2-12)-	754011-SS3-17-(2-12)-	754011-SS2-4-(2-12)-
20230417	20230417	20230418
754011-SS3-12-(12-24)-	754011-SS3-17-(12-24)-	754011-SS2-5-(0-2)-
20230417	20230417	20230418
754011-SS3-19-(0-2)-	754011-SS3-16-(0-2)-	754011-SS2-5-(2-12)-
20230417	20230417	20230418
754011-SS3-19-(2-12)-	754011-SS3-16-(2-12)-	754011-SS2-3-(0-2)-
20230417	20230417	20230418
754011-SS3-19-(12-24)-	754011-SS3-16-(12-24)-	754011-SS2-3-(2-12)-
20230417	20230417	20230418
754011-SS3-18-(0-2)-	754011-SS3-13-(0-2)-	754011-SS2-6-(0-2)-
20230417	20230417	20230418
754011-SS3-18-(2-12)-	754011-SS3-13-(2-12)-	754011-SS2-6-(2-12)-
20230417	20230417	20230418
754011-SS3-18-(12-24)-	754011-SS3-13-(12-24)-	754011-SS2-1-(0-2)-
20230417	20230417	20230418
754011-SS3-20-(0-2)-	754011-FD-01-20230417	754011-SS2-1-(2-12)-
20230417		20230418
754011-SS3-20-(2-12)-	754011-SS2-7-(0-2)-	754011-SS2-2-(0-2)-
20230417	20230418	20230418
754011-SS3-20-(12-24)-	754011-SS2-7-(2-12)-	754011-SS2-2-(2-12)-
20230417	20230418	20230418

Please note, the laboratory did not perform closing continuing calibration verifications. Therefore, those criteria were not evaluated during validation. No qualification was applied on this basis.

5. INTERNAL STANDARDS PERFORMANCE

Internal standard performance criteria are meant to ensure that the gas chromatography/mass spectrometry (GC/MS) sensitivity and response are stable during every experimental run.

The internal standard area count must not vary by more than a factor of two from the associated continuing calibration standard. The retention time of the internal standard must not vary by more than +/- 30 seconds from the associated continuing calibration standard. The area count must be within -50% to +200% range of the associated standard. If area count is >200%, non-detected results are not qualified while positive results associated with the non-compliant internal standard are qualified "J," estimated. However, when an observed area count is <50%, positive results associated with the non-compliant are qualified "J," estimated, while non-detected results are rejected.

Internal standard area counts are within acceptance criteria for all samples.

6. SURROGATES

All samples are spiked with surrogate compounds prior to sample preparation and analyses to evaluate overall laboratory performance and efficiency of the analytical technique. The observed recovery must be within laboratory limits as outlined in the project specific validation guidance.

The reported sample analyses had observed surrogate recoveries within the established acceptance limits in all cases.

7. COMPOUND IDENTIFICATION

Volatile

The project target analyte compounds are identified on the GC/MS by using the analytes relative retention time (RRT) and ion spectra. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have ion spectra which has a ratio of the primary and secondary ion intensities within 20% of that in the standard compound. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

All samples were evaluated, and all identification criteria were met. Therefore, no analytes were qualified for compound identification.

Volatile Tentatively Identified Compounds

Tentatively Identified Compounds (TICs) were reported by the laboratory and reviewed for quality assurance. For all TIC results where there is presumptive evidence of a match, being greater than or equal to 85% match, the results are qualified "NJ," tentatively identified. If the non-target compound is reported as an unknown, the result is qualified "J," estimated. Likewise, if it is determined that the identification of a TIC is unacceptable, the tentative identification of the compound is changed to "unknown" and the result is qualified "J," estimated.

Volatile TICs were not reported.

8. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The matrix spike and matrix spike duplicate (MS/MSD) are generated to determine the precision and accuracy of the analytical procedure in a given sample matrix.

Sample 754011-SS3-20-(12-24)-041723 was submitted for MS/MSD analyses in association with this SDG. Upon evaluation all precision and accuracy indictors were favorable or did not require qualification of sample results with the following exceptions.

The observed recoveries for chloromethane, methyl acetate, and 1,4-dioxane were lower than the lowest acceptance limits in both the MS and MSD. The results for the impacted analytes in the parent sample were all not detected and have been qualified "UJ" on this basis.

Sample 754011-SS2-3-(2-12)-041823 was submitted for MS/MSD analyses in association with this SDG. Upon evaluation all precision and accuracy indictors were favorable or did not require qualification of sample results.

9. LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE

The Laboratory Control Sample (LCS) is spiked with the same analytes at the same concentrations as the matrix spike. The LCS results are used to verify that the laboratory can perform the analysis in a clean matrix.

LCS/LCS duplicate evaluations were processed at the proper frequency. . Upon evaluation all precision and accuracy indictors were favorable or did not require qualification of sample results with the following exceptions.

The observed recoveries for chloromethane in the LCS and LCSD associated with the samples listed below in this SDG were lower than the lowest acceptance limits. The results for the impacted analyte in the associated samples were all not detected and have been qualified "UJ" on this basis.

754011-SS3-19-(0-2)-	754011-SS3-18-(12-24)-	754011-SS3-17-(2-12)-
20230417	20230417	20230417
754011-SS3-19-(2-12)-	754011-SS3-20-(0-2)-	754011-SS3-17-(12-24)-
20230417	20230417	20230417
754011-SS3-19-(12-24)-	754011-SS3-20-(2-12)-	754011-SS3-16-(0-2)-
20230417	20230417	20230417
754011-SS3-18-(0-2)-	754011-SS3-20-(12-24)-	754011-SS3-16-(2-12)-
20230417	20230417	20230417
754011-SS3-18-(2-12)-	754011-SS3-17-(0-2)-	754011-SS3-16-(12-24)-
20230417	20230417	20230417
754011-SS3-13-(0-2)-	754011-SS2-4-(0-2)-	754011-SS2-6-(0-2)-
20230417	20230418	20230418
754011-SS3-13-(2-12)-	754011-SS2-4-(2-12)-	754011-SS2-6-(2-12)-
20230417	20230418	20230418
754011-SS3-13-(12-24)-	754011-SS2-5-(0-2)-	754011-SS2-1-(0-2)-
20230417	20230418	20230418
754011-FD-01-20230417	754011-SS2-5-(2-12)-	754011-SS2-1-(2-12)-
	20230418	20230418
754011-SS2-7-(0-2)-	754011-SS2-3-(0-2)-	754011-SS2-2-(0-2)-
20230418	20230418	20230418
754011-SS2-7-(2-12)-	754011-SS2-3-(2-12)-	754011-SS2-2-(2-12)-
20230418	20230418	20230418
The observed recoveries for methyl acetate in the LCS and LCSD associated with the samples listed below in this SDG were lower than the lowest acceptance limits. The results for the impacted analyte in the associated samples were all not detected and have been qualified "UJ" on this basis.

754011-SS3-11-(0-2)-	754011-SS2-10-(0-2)-	754011-SS2-9-(2-12)-
20230418	20230418	20230417
754011-SS3-11-(2-12)-	754011-SS2-10-(2-12)-	754011-FD-02-20230418
20230418	20230418	
754011-SS3-11-(12-24)-	754011-SS2-9-(0-2)-	
20230418	20230418	

10. REPORTING

No problems were found for this criterion.

11. OTHER QUALITY CONTROL DATA OUT OF SPECIFICATION

No problems were found for this criterion.

12. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method, including sampling, analysis, and site heterogeneity.

Samples 754011-SS3-20-(2-12)-20230417 and 754011-FD-01-041723 were submitted as a field duplicate pair in association with these SDGs. Adequate field precision was demonstrated.

Samples 754011-SS2-3-(2-12)-20230418 and 754011-FD-02-041823 were submitted as a field duplicate pair in association with these SDGs. Adequate field precision was demonstrated.

13. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

Overall, the laboratory data generated met the project goals and quality control criteria, with the exceptions identified in this report and as summarized in Table 1.

Table 1 **Review Elements Summary**

	Were acceptance criteria met?		
	Yes	N	0
Volatiles		Major	Minor
Holding Time	х		
Method Blanks	х		
Storage Blanks	NA		
Trip Blanks	NA		
Field/ Rinse Blanks			х
Mass Spectrometer Tuning	х		
Calibration Response Factor		х	
Calibration Percent Relative Standard Deviation and Percent Difference			х
Internal Standards	х		
Surrogates	х		
Compound Identification - Volatile	х		
Tentatively Identified Compounds - Volatile	NA		
Matrix Spike/Matrix Spike Duplicate			х
Laboratory Control Sample/Laboratory Control Sample Duplicate			х
Other Quality Control Data out of Specification	х		
Field Duplicate	х		

Major= Major data quality issue identified resulting in rejection of data. Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations. NA = Not applicable

Data Qualifier	Definition
U	The analyte was analyzed for but was not detected above the level of the
	reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the
	approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been "tentatively
	identified" and the associated numerical value represents its approximate
	concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation
	limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious
	deficiencies in meeting Quality Control (QC) criteria. The analyte may or may
	not be present in the sample.

Table 2Data Validation Qualifiers



DATA USABILITY SUMMARY REPORT FOR VOLATILES

PROJECT: Owego Heat Site

CLIENT: EA Engineering, Science, and Technology, Inc.

LABORATORY: Con-Test, A Pace Analytical Laboratory

SAMPLE DELIVERY GROUPS: 23D2490

SAMPLE DATES: 04/19/2023 - 04/20/2023

The above sample delivery groups (SDGs) consist of the following samples:

Client Sample ID	Laboratory Sample ID
754011-SS2-8-(0-2)-20230419	23D2490-01
754011-SS2-8-(2-12)-20230419	23D2490-02
754011-SS3-2-(0-2)-20230419	23D2490-03
754011-SS3-2-(2-12)-20230419	23D2490-04
754011-SS3-2-(12-24)-20230419	23D2490-05
754011-SS3-3-(0-2)-20230419	23D2490-06
754011-SS3-3-(2-12)-20230419	23D2490-07
754011-SS3-3-(12-24)-20230419	23D2490-08
754011-SS3-4-(0-2)-20230419	23D2490-09
754011-SS3-4-(2-12)-20230419	23D2490-10
754011-SS3-4-(12-24)-20230419	23D2490-11
754011-SS3-10-(0-2)-20230419	23D2490-12
754011-SS3-10-(2-12)-20230419	23D2490-13
754011-SS3-10-(12-24)-20230419	23D2490-14
754011-SS3-9-(0-2)-20230419	23D2490-15
754011-SS3-9-(2-12)-20230419	23D2490-16
754011-SS3-9-(12-24)-20230419	23D2490-17
754011-SS3-8-(0-2)-20230419	23D2490-18
754011-SS3-8-(2-12)-20230419	23D2490-19
754011-SS3-8-(12-24)-20230419	23D2490-20
754011-SS3-5-(0-2)-20230419	23D2490-21
754011-SS3-5-(2-12)-20230419	23D2490-22
754011-SS3-5-(12-24)-20230419	23D2490-23
754011-SS3-7-(0-2)-20230419	23D2490-24
754011-SS3-7-(2-12)-20230419	23D2490-25
754011-SS3-7-(12-24)-20230419	23D2490-26
754011-SS3-1-(0-2)-20230419	23D2490-27
754011-SS3-1-(2-12)-20230419	23D2490-28
754011-SS3-1-(12-24)-20230419	23D2490-29
754011-FD-03-20230419	23D2490-30
754011-RB-03-20230419	23D2490-31
754011-SS3-6-(0-2)-20230420	23D2490-32
754011-SS3-6-(2-12)-20230420	23D2490-33
754011-SS3-6-(12-24)-20230420	23D2490-34
754011-SS3-15-(0-2)-20230420	23D2490-35
754011-SS3-15-(2-12)-20230420	23D2490-36
754011-SS3-15-(12-24)-20230420	23D2490-37

Client Sample ID	Laboratory Sample ID
754011-SS3-14-(0-2)-20230420	23D2490-38
754011-SS3-14-(2-12)-20230420	23D2490-39
754011-SS3-14-(12-24)-20230420	23D2490-40
754011-FD-04-20230420	23D2490-41
754011-RB-04-20230420	23D2490-42

The samples described above were analyzed via USEPA SW-846 8260C to determine the concentrations of low/medium volatile organic analytes (VOAs).

Project specific quality assurance (QA) objectives, as well as the USEPA Region II SOP, Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B & 8260C, SOP No. HW-24 Revision 4, September 2014 have been considered during validation of this data and its usability.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R," rejected. Data validation qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

Per USEPA Region 2 Validation Guidance, "All data users should note two facts. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables even as a last resort. Second, no analyte concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error."

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Proper sample handling and preservation also play a role in the chemical stability of analytes in the sample matrix. If samples are not collected and stored using proper containers and/or preservatives, data may not be valid.

The samples in this sample delivery group (SDG) were received by the laboratory within the proper temperature range as specified in the validation guidance.

The samples in this SDG were prepared and analyzed within the holding time specified in the validation guidelines.

2. BLANK CONTAMINATION

Quality assurance blanks include method, storage, trip, field, or rinse blanks. Blanks are prepared to identify any contamination, which may have been introduced into the samples during preparation and analysis or field activity. Method and storage blanks measure laboratory contamination. Trip blanks measure cross contamination during shipment. Field and rinse blanks measure cross contamination during field operations.

Method Blanks

Method blanks were prepared and analyzed in association with the samples in these SDGs at the specified frequency. Upon examination of method blank data, no analyte was positively identified at a concentration equal to or above the method detection limit (MDL) in any associated method blank.

Storage Blanks

No storage blanks were submitted in association with these SDGs.

Trip Blanks

No sample was submitted as a trip blank in association with all samples in this SDG.

Field Blanks

Sample 754011-RB-03-20230419 was submitted as a rinse blank in association with the samples collected on 04/19/2023 in this SDG. Acetone was positively identified in the rinse blank. Positive sample results for acetone in the associated samples have been evaluated and qualified per validation guidance.

Sample 754011-RB-04-20230420 was submitted as a rinse blank in association with the samples collected on 04/20/2023 in this SDG. Acetone was positively identified in the rinse blank. Positive sample results for acetone in the associated samples have been evaluated and qualified per validation guidance.

3. MASS SPECTROMETER TUNING

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances.

The tuning standard for volatiles is bromofluorobenzene (BFB). All tunes associated with these SDGs were fully compliant.

4. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative results. The initial calibration curve demonstrates that the instrument is capable of giving acceptable performance at the beginning of an analytical sequence. The continuing calibration verifies that the instrument is continuing to provide satisfactory daily performance. Additionally, a continuing calibration is analyzed at the end of each 12-hour analytical sequence, denoted as a "closing" calibration verification, and ascertains acceptable performance at the conclusion of the analytical sequence.

Response Factor

The relative response factor (RRF) measures the instruments responses to specific chemical compounds. The RRFs for the VOA target compound list (TCL) compounds must be greater than the RRFs listed in Region II validation guidelines. A value less than the respective criteria indicates serious detection and quantitation problems. If the mean RRF of the initial calibration or the continuing calibration RRF is below the specified limit for any analyte, those analytes detected in environmental samples will be qualified as estimated. All non-detects for those analytes will be rejected.

The RRF values in all initial and continuing calibrations for method 8260 were found to be acceptable with the following exception. The RRF for 1,4-dioxane was extremely low (<0.01). The 1,4-dioxane results in all the samples were not detected and have been qualified "R" on this basis.

Percent Relative Standard Deviation and Percent Deviation

Percent relative standard deviation (%RSD) is calculated from the initial calibration and is used to indicate stability of a specific compound over the calibration range. Percent deviation (%D) compares the response factor of the continuing calibration with the mean response factor of the initial calibration. Therefore, %D is a measure of the instrument's daily performance.

The following QC criteria have been applied for this project:

The %RSD of initial calibration must be ≤20%.

A %RSD value outside initial calibration limit indicates the potential for quantitation errors. For this reason, all positive results are qualified as estimated and non-detect results are qualified using professional judgement.

The %D for opening continuing calibration must be \leq 30%

A value outside these limits indicates the potential for detection and quantitation errors. For these reasons, all positive results are qualified as "J," estimated, and non-detects are qualified with "UJ."

All initial calibration and continuing calibration %RSD and %D values were within defined quality control criteria with the following exceptions.

The %Ds for bromomethane and vinyl chloride were outside of acceptance criteria in the continuing calibration verification (CCV) associated with the samples 754011-RB-03-20230419 and 754011-RB-04-20230420 in this SDG. The results reported for the impacted analytes were all not detected and have been qualified "UJ" on this basis.

The %D for acetone, bromomethane, and dichlorodifluoromethane were outside of acceptance criteria in the initial calibration verification (ICV) and dichlorodifluoromethane was outside of acceptance criteria in the CCV's associated with the samples listed below in this SDG. The results reported for the impacted analytes in the associated samples have been qualified "J" or "UJ", as appropriate on this basis.

754011-SS2-8-(0-2)-	754011-SS3-10-(0-2)-	754011-SS3-5-(12-24)-
20230419	20230419	20230419
754011-SS2-8-(2-12)-	754011-SS3-10-(2-12)-	754011-SS3-7-(0-2)-
20230419	20230419	20230419
754011-SS3-2-(0-2)-	754011-SS3-10-(12-24)-	754011-SS3-7-(2-12)-
20230419	20230419	20230419
754011-SS3-2-(2-12)-	754011-SS3-9-(0-2)-	754011-SS3-7-(12-24)-
20230419	20230419	20230419
754011-SS3-2-(12-24)-	754011-SS3-9-(2-12)-	754011-SS3-1-(0-2)-
20230419	20230419	20230419
754011-SS3-3-(0-2)-	754011-SS3-9-(12-24)-	754011-SS3-1-(2-12)-
20230419	20230419	20230419
754011-SS3-3-(2-12)-	754011-SS3-8-(0-2)-	754011-SS3-1-(12-24)-
20230419	20230419	20230419
754011-SS3-3-(12-24)-	754011-SS3-8-(2-12)-	754011-FD-03-20230419
20230419	20230419	
754011-SS3-4-(0-2)-	754011-SS3-8-(12-24)-	754011-SS3-6-(0-2)-
20230419	20230419	20230420
754011-SS3-4-(2-12)-	754011-SS3-5-(0-2)-	754011-SS3-6-(2-12)-
20230419	20230419	20230420
754011-SS3-4-(12-24)-	754011-SS3-5-(2-12)-	
20230419	20230419	

The %D for carbon disulfide and dichlorodifluoromethane were outside of acceptance criteria in the ICV and bromomethane and chloroethane was outside of acceptance criteria in the CCV associated with the samples listed below in this SDG. The results reported for the impacted analytes in the associated samples were all not detected and have been gualified "UJ" on this basis.

754011-SS3-6-(12-24)-	754011-SS3-15-(12-24)-	754011-SS3-14-(12-24)-
20230420	20230420	20230420
754011-SS3-15-(0-2)-	754011-SS3-14-(0-2)-	754011-FD-04-20230420
20230420	20230420	
754011-SS3-15-(2-12)-	754011-SS3-14-(2-12)-	
20230420	20230420	

Please note, the laboratory did not perform closing continuing calibration verifications. Therefore, those criteria were not evaluated during validation. No qualification was applied on this basis.

5. INTERNAL STANDARDS PERFORMANCE

Internal standard performance criteria are meant to ensure that the gas chromatography/mass spectrometry (GC/MS) sensitivity and response are stable during every experimental run.

The internal standard area count must not vary by more than a factor of two from the associated continuing calibration standard. The retention time of the internal standard must not vary by more than +/- 30 seconds from the associated continuing calibration standard. The area count must be within -50% to +200% range of the associated standard. If area count is >200%, non-detected results are not qualified while positive results associated with the non-compliant internal standard are qualified "J," estimated. However, when an observed area count is <50%, positive results associated with the non-compliant are qualified "J," estimated, while non-detected results are rejected.

Internal standard area counts are within acceptance criteria for all samples.

6. SURROGATES

All samples are spiked with surrogate compounds prior to sample preparation and analyses to evaluate overall laboratory performance and efficiency of the analytical technique. The observed recovery must be within laboratory limits as outlined in the project specific validation guidance.

The reported sample analyses had observed surrogate recoveries within the established acceptance limits in all cases.

7. COMPOUND IDENTIFICATION

Volatile

The project target analyte compounds are identified on the GC/MS by using the analytes relative retention time (RRT) and ion spectra. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have ion spectra which has a ratio of the primary and secondary ion intensities within 20% of that in the standard compound. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

All samples were evaluated, and all identification criteria were met. Therefore, no analytes were qualified for compound identification.

Volatile Tentatively Identified Compounds

Tentatively Identified Compounds (TICs) were reported by the laboratory and reviewed for quality assurance. For all TIC results where there is presumptive evidence of a match, being greater than or equal to 85% match, the results are qualified "NJ," tentatively identified. If the non-target compound is reported as an unknown, the result is qualified "J," estimated. Likewise, if it is determined that the identification of a TIC is unacceptable, the tentative identification of the compound is changed to "unknown" and the result is qualified "J," estimated.

Volatile TICs were not reported.

8. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The matrix spike and matrix spike duplicate (MS/MSD) are generated to determine the precision and accuracy of the analytical procedure in a given sample matrix.

Sample 754011-SS3-14-(12-24)-042023 was submitted for MS/MSD analyses in association with this SDG. Upon evaluation all precision and accuracy indictors were favorable or did not require qualification of sample results with the following exceptions.

The observed recoveries for acetone were higher than the highest acceptance limits in the MS and lower than the lowest acceptance limits in the MSD. The precision between the MS and MSD was also outside acceptance limits. The results for the impacted analyte in the parent sample have been qualified "J" on this basis.

Sample 754011-SS3-2-(2-12)-20230419 was submitted for MS/MSD analyses in association with this SDG. Upon evaluation all precision and accuracy indictors were favorable or did not require qualification of sample results.

9. LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE

The Laboratory Control Sample (LCS) is spiked with the same analytes at the same concentrations as the matrix spike. The LCS results are used to verify that the laboratory can perform the analysis in a clean matrix.

LCS/LCS duplicate evaluations were processed at the proper frequency. . Upon evaluation all precision and accuracy indictors were favorable or did not require qualification of sample results with the following exceptions.

The observed recoveries for acetone in the LCS and LCSD associated with the samples listed below in this SDG were lower than the lowest acceptance limits. The results for the impacted analyte in the associated samples were all not detected and have been qualified "UJ" on this basis.

754011-SS2-8-(0-2)-	754011-SS3-3-(12-24)-	754011-SS3-10-(12-24)-
20230419	20230419	20230419
754011-SS2-8-(2-12)-	754011-SS3-4-(0-2)-	754011-SS3-9-(0-2)-
20230419	20230419	20230419
754011-SS3-2-(0-2)-	754011-SS3-4-(2-12)-	754011-SS3-9-(2-12)-
20230419	20230419	20230419
754011-SS3-2-(2-12)-	754011-SS3-4-(12-24)-	754011-SS3-9-(12-24)-
20230419	20230419	20230419
754011-SS3-2-(12-24)-	754011-SS3-10-(0-2)-	754011-SS3-8-(0-2)-
20230419	20230419	20230419
754011-SS3-3-(0-2)-	754011-SS3-10-(2-12)-	754011-SS3-8-(2-12)-
20230419	20230419	20230419
754011-SS3-3-(2-12)-		
20230419		

10. REPORTING

No problems were found for this criterion.

11. OTHER QUALITY CONTROL DATA OUT OF SPECIFICATION

No problems were found for this criterion.

12. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method, including sampling, analysis, and site heterogeneity.

Samples 754011-SS2-8-(2-12)-20230419 and 754011-FD-03-20230419 were submitted as a field duplicate pair in association with these SDGs. Adequate field precision was demonstrated.

Samples 754011-SS3-14-(2-12)-20230420 and 754011-FD-04-20230420 were submitted as a field duplicate pair in association with these SDGs. Adequate field precision was demonstrated.

13. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

Overall, the laboratory data generated met the project goals and quality control criteria, with the exceptions identified in this report and as summarized in Table 1.

Table 1 **Review Elements Summary**

	Were acceptance criteria met?		
	Yes	N	0
Volatiles		Major	Minor
Holding Time	х		
Method Blanks	х		
Storage Blanks	NA		
Trip Blanks	NA		
Field/ Rinse Blanks			х
Mass Spectrometer Tuning	х		
Calibration Response Factor		х	
Calibration Percent Relative Standard Deviation and Percent Difference			х
Internal Standards	х		
Surrogates	х		
Compound Identification - Volatile	х		
Tentatively Identified Compounds - Volatile	NA		
Matrix Spike/Matrix Spike Duplicate			х
Laboratory Control Sample/Laboratory Control Sample Duplicate			х
Other Quality Control Data out of Specification	х		
Field Duplicate	х		

Major= Major data quality issue identified resulting in rejection of data. Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations. NA = Not applicable

Data Qualifier	Definition
U	The analyte was analyzed for but was not detected above the level of the
	reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the
	approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been "tentatively
	identified" and the associated numerical value represents its approximate
	concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation
	limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious
	deficiencies in meeting Quality Control (QC) criteria. The analyte may or may
	not be present in the sample.

Table 2Data Validation Qualifiers



DATA USABILITY SUMMARY REPORT FOR VOLATILES

PROJECT: Owego Heat Site

CLIENT: EA Engineering, Science, and Technology, Inc.

LABORATORY: Con-Test, A Pace Analytical Laboratory

SAMPLE DELIVERY GROUPS: 23F0349

SAMPLE DATES: 06/01/2023 - 06/02/2023

The above sample delivery groups (SDGs) consist of the following samples:

Client Sample ID	Laboratory Sample ID
754011-RESIDENCE-01-060223	23F0349-01
754011-RESIDENCE-02-060123	23F0349-02
754011-SS3-18-(2-12)-060223	23F0349-09

The samples described above were analyzed via USEPA SW-846 8260C to determine the concentrations of low/medium volatile organic analytes (VOAs).

Project specific quality assurance (QA) objectives, as well as the USEPA Region II SOP, Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B & 8260C, SOP NO. HW-24 Revision 4, September 2014 have been considered during validation of this data and its usability.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R," rejected. Data validation qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

Per USEPA Region 2 Validation Guidance, "All data users should note two facts. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables even as a last resort. Second, no analyte concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error."

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Proper sample handling and preservation also play a role in the chemical stability of analytes in the sample matrix. If samples are not collected and stored using proper containers and/or preservatives, data may not be valid.

The samples in this sample delivery group (SDG) were received by the laboratory within the proper temperature range as specified in the validation guidance.

The samples in this SDG were prepared and analyzed within the holding time specified in the validation guidelines.

2. BLANK CONTAMINATION

Quality assurance blanks include method, storage, trip, field, or rinse blanks. Blanks are prepared to identify any contamination, which may have been introduced into the samples during preparation and analysis or field activity. Method and storage blanks measure laboratory contamination. Trip blanks measure cross contamination during shipment. Field and rinse blanks measure cross contamination during field operations.

Method Blanks

Method blanks were prepared and analyzed in association with the samples in these SDGs at the specified frequency. Upon examination of method blank data, no analyte was positively identified at a concentration equal to or above the method detection limit (MDL) in any associated method blank.

Storage Blanks

No storage blanks were submitted in association with these SDGs.

Trip Blanks

No sample was submitted as a trip blank in association with all samples in this SDG.

Field Blanks

No sample was submitted as a rinse blank in association with the samples in this SDG.

3. MASS SPECTROMETER TUNING

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances.

The tuning standard for volatiles is bromofluorobenzene (BFB). All tunes associated with these SDGs were fully compliant.

4. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative results. The initial calibration curve demonstrates that the instrument is capable of giving acceptable performance at the beginning of an analytical

sequence. The continuing calibration verifies that the instrument is continuing to provide satisfactory daily performance. Additionally, a continuing calibration is analyzed at the end of each 12-hour analytical sequence, denoted as a "closing" calibration verification, and ascertains acceptable performance at the conclusion of the analytical sequence.

Response Factor

The relative response factor (RRF) measures the instruments responses to specific chemical compounds. The RRFs for the VOA target compound list (TCL) compounds must be greater than the RRFs listed in Region II validation guidelines. A value less than the respective criteria indicates serious detection and quantitation problems. If the mean RRF of the initial calibration or the continuing calibration RRF is below the specified limit for any analyte, those analytes detected in environmental samples will be qualified as estimated. All non-detects for those analytes will be rejected.

The RRF values in all initial and continuing calibrations for method 8260D were found to be acceptable with the following exception. The RRF for 1,4-dioxane was extremely low (<0.01). The 1,4-dioxane results in all the samples were not detected and have been qualified "R" on this basis.

Percent Relative Standard Deviation and Percent Deviation

Percent relative standard deviation (%RSD) is calculated from the initial calibration and is used to indicate stability of a specific compound over the calibration range. Percent deviation (%D) compares the response factor of the continuing calibration with the mean response factor of the initial calibration. Therefore, %D is a measure of the instrument's daily performance.

The following QC criteria have been applied for this project:

The %RSD of initial calibration must be ≤20%.

A %RSD value outside initial calibration limit indicates the potential for quantitation errors. For this reason, all positive results are qualified as estimated and non-detect results are qualified using professional judgement.

The %D for opening continuing calibration must be ≤30%

A value outside these limits indicates the potential for detection and quantitation errors. For these reasons, all positive results are qualified as "J," estimated, and non-detects are qualified with "UJ."

All initial calibration and continuing calibration %RSD and %D values were within defined QC criteria with the following exceptions.

The %Ds for carbon disulfide and dichlorodifluoromethane were outside of acceptance criteria in the initial calibration verification (ICV) and bromomethane, chloromethane, and chloroethane were outside of acceptance criteria in the CCV associated with sample 754011-SS3-18-(2-12)-060223 in this SDG. The results reported for the impacted analytes in the associated sample have been qualified "UJ" on this basis.

Please note, the laboratory did not perform closing continuing calibration verifications. Therefore, those criteria were not evaluated during validation. No qualification was applied on this basis.

5. INTERNAL STANDARDS PERFORMANCE

Internal standard performance criteria are meant to ensure that the gas chromatography/mass spectrometry (GC/MS) sensitivity and response are stable during every experimental run.

The internal standard area count must not vary by more than a factor of two from the associated continuing calibration standard. The retention time of the internal standard must not vary by more than +/- 30 seconds from the associated continuing calibration standard. The area count must be within -50% to +200% range of the associated standard. If area count is >200%, non-detected results are not qualified while positive results associated with the non-compliant internal standard are qualified "J," estimated. However, when an observed area count is <50%, positive results associated with the non-compliant are qualified "J," estimated, while non-detected results are rejected.

Internal standard area counts are within acceptance criteria for all samples.

6. SURROGATES

All samples are spiked with surrogate compounds prior to sample preparation and analyses to evaluate overall laboratory performance and efficiency of the analytical technique. The observed recovery must be within laboratory limits as outlined in the project specific validation guidance.

The reported sample analyses had observed surrogate recoveries within the established acceptance limits in all cases.

7. COMPOUND IDENTIFICATION

Volatile

The project target analyte compounds are identified on the GC/MS by using the analytes relative retention time (RRT) and ion spectra. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have ion spectra which has a ratio of the primary and secondary ion intensities within 20% of that in the standard compound. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

All samples were evaluated, and all identification criteria were met. Therefore, no analytes were qualified for compound identification.

Volatile Tentatively Identified Compounds

Tentatively Identified Compounds (TICs) were reported by the laboratory and reviewed for quality assurance. For all TIC results where there is presumptive evidence of a match, being greater than or equal to 85% match, the results are qualified "NJ," tentatively identified. If the non-target compound is reported as an unknown, the result is qualified "J," estimated. Likewise, if it is determined that the identification of a TIC is unacceptable, the tentative identification of the compound is changed to "unknown" and the result is qualified "J," estimated.

Volatile TICs were not reported.

8. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The matrix spike and matrix spike duplicate (MS/MSD) are generated to determine the precision and accuracy of the analytical procedure in a given sample matrix.

No sample was submitted for MS/MSD analyses in association with this SDG.

9. LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE

The Laboratory Control Sample (LCS) is spiked with the same analytes at the same concentrations as the matrix spike. The LCS results are used to verify that the laboratory can perform the analysis in a clean matrix.

LCS/LCS duplicate evaluations were processed at the proper frequency. Upon evaluation all precision and accuracy indictors were favorable or did not require qualification of sample results with the following exceptions.

The observed recoveries for chloromethane in the LCS and LCSD associated with sample 754011-SS3-18-(2-12)-060223 in this SDG were lower than the lowest acceptance limits. The result reported for the impacted analyte in the associated sample has been qualified "UJ" on this basis.

10. REPORTING

No problems were found for this criterion.

11. OTHER QUALITY CONTROL DATA OUT OF SPECIFICATION

No problems were found for this criterion.

12. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method, including sampling, analysis, and site heterogeneity.

No samples were submitted as a field duplicate pair in association with these SDGs.

13. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

Overall, the laboratory data generated met the project goals and quality control criteria, with the exceptions identified in this report and as summarized in Table 1.

Table 1 **Review Elements Summary**

	Were acceptance criteria met?		
	Yes	N	0
Volatiles		Major	Minor
Holding Time	х		
Method Blanks	х		
Storage Blanks	NA		
Trip Blanks	NA		
Field/ Rinse Blanks	NA		
Mass Spectrometer Tuning	х		
Calibration Response Factor		х	
Calibration Percent Relative Standard Deviation and Percent Difference			х
Internal Standards	х		
Surrogates	х		
Compound Identification - Volatile	х		
Tentatively Identified Compounds - Volatile	NA		
Matrix Spike/Matrix Spike Duplicate	NA		
Laboratory Control Sample/Laboratory Control Sample Duplicate			х
Other Quality Control Data out of Specification	х		
Field Duplicate	NA		

Major= Major data quality issue identified resulting in rejection of data. Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations. NA = Not applicable

Data Qualifier	Definition
U	The analyte was analyzed for but was not detected above the level of the
	reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the
	approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been "tentatively
	identified" and the associated numerical value represents its approximate
	concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation
	limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious
	deficiencies in meeting Quality Control (QC) criteria. The analyte may or may
	not be present in the sample.

Table 2Data Validation Qualifiers



DATA VALIDATION REPORT

Owego Heat Site

SDGs: 23F0366, 23G0753 and 23G0805

Chemical Analyses Performed by:

Con-Test, A Pace Analytical Laboratory

Prepared by

ENVIRONMENTAL DATA SERVICES, LTD.

Prepared for

EA Engineering, Science and Technology, Inc.

November 1, 2023

5 Brilliant Avenue, Pittsburgh, PA 15215 412.408.3288 I www.eds-pa.com



DATA USABILITY SUMMARY REPORT FOR VOLATILES

PROJECT: Owego Heat Site

CLIENT: EA Engineering, Science and Technology, Inc.

LABORATORY: Con-Test, Pace Analytical Laboratory

SAMPLE DELIVERY GROUP: 23F0366

SAMPLE DATES: 06/01/2023

This sample delivery group consist of the following samples:

Sample Identification	Laboratory Identification
754011-SGP-03-060123	23F0366-01
754011-SGP-02-060123	23F0366-02
754011-SGP-01-060123	23F0366-03
754011-SGP-06-060123	23F0366-04
754011-SGP-04-060123	23F0366-05
754011-SGP-05-060123	23F0366-06
754011-SGP-FD-060123	23F0366-07

The samples described above were analyzed via methods USEPA TO-15 and/or USEPA TO-15 SIM to determine the concentrations of trace volatile organic analytes (VOAs) in air samples.

Project specific quality assurance (QA) objectives, as well as the USEPA Region II SOP, Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15 Data Validation, HW-31, Rev. 6, June 2014 have been considered during validation of this data and its usability.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R", rejected. Data validation qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

Per USEPA Region 2 Validation Guidance, "All data users should note two facts. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables even as a last resort. The second, no analyte concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error."

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Proper sample handling and preservation also play a role in the chemical stability of analytes in the sample matrix. If samples are not collected and stored using proper containers and/or preservatives, data may not be valid.

The samples in this delivery group were prepared and analyzed within the holding time specified in the validation guidelines.

2. BLANK CONTAMINATION

Quality assurance blanks include method, storage, trip, field, or rinse blanks. Blanks are prepared to identify any contamination, which may have been introduced into the samples during preparation and analysis or field activity. Method and storage blanks measure laboratory contamination. Trip blanks measure cross contamination during shipment. Field and rinse blanks measure cross contaminations.

Method Blanks

Method blanks were prepared and analyzed in association with the samples in this delivery group at the specified frequency. Upon examination of method blank data, no analyte was positively identified at a concentration equal to or above the method detection limit (MDL).

Storage Blanks

No storage blanks were required for this sample delivery group (SDG).

Trip Blanks

No trip blanks were submitted in association with this SDG.

Field Blanks

No field blanks were submitted in association with this SDG.

3. MASS SPECTROMETER TUNING

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances.

The tuning standard for volatiles is bromofluorobenzene (BFB).

All tunes associated with this SDG were fully compliant.

4. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative results. The initial calibration curve demonstrates that the instrument is capable of giving acceptable performance at the beginning of an analytical sequence. The continuing calibration verifies that the instrument is continuing to provide satisfactory daily performance. Additionally, a continuing calibration is analyzed at the end of each 24-hour analytical sequence, denoted as a "closing" calibration verification and ascertains acceptable performance at the conclusion of the analytical sequence.

Note, no closing continuing calibration verifications were performed in association with this SDG.

Response Factor

The relative response factor (RRF) measures the instruments responses to specific chemical compounds. The RRFs for the volatile organic analysis (VOA) target compound list (TCL) must be ≥ 0.05 in both the initial and continuing calibrations with exception of poor response compounds, where RRFs must be ≥ 0.01 . Additionally, the RRF in the closing continuing calibration must be ≥ 0.01 . A value less than the respective criteria indicates serious detection and quantitation problems. If the mean RRF of the initial calibration or the continuing calibration RRF is <0.05, or <0.01 for poor response compounds, or the RRF for the closing continuing calibration is <0.01 for any analyte, those analytes detected in environmental samples will be qualified as estimated. All non-detects for those analytes will be rejected.

The RRF values in all initial and continuing calibrations were found to be acceptable in all cases.

Percent Relative Standard Deviation and Percent Deviation

Percent relative standard deviation (%RSD) is calculated from the initial calibration and is used to indicate stability of a specific compound over the calibration range. Percent deviation (%D) compares the response factor of the continuing calibration with the mean response factor of the initial calibration. Therefore, %D is a measure of the instrument's daily performance.

The following QC criteria have been applied for this project:

The %RSD of initial calibration must be <30%.

An RSD value outside initial calibration limit indicates the potential for quantitation errors. For this reason, all positive results are qualified as estimated. Severe performance failures (RSD >90%) require qualification of non-detected results as well.

The %D for continuing calibration must be <30%.

A value outside these limits indicates the potential for detection and quantitation errors. For these reasons, all positive results are qualified as estimated, and non-detects are qualified with "UJ".

All initial calibration and continuing calibration %RSD and %D values were within defined QC criteria with the following exceptions.

The %D values for chloroethane, dichlorodifluoromethane, and vinyl chloride were outside of acceptance limits for the continuing calibration verification CCV associated with all samples in this SDG. The results reported for the impacted analytes have been qualified "J" or "UJ", as appropriate on this basis.

5. INTERNAL STANDARDS PERFORMANCE

Internal standard performance criteria are meant to ensure that the gas chromatography/mass spectrometry (GC/MS) sensitivity and response are stable during every experimental run.

The internal standard area count must not vary by more than a factor of two from the associated continuing calibration standard. The retention time of the internal standard must not vary by more than +/- 20 seconds from the associated continuing calibration standard. The area count must be within -60% to +140% range of the associated standard. If area count is >140% non-detected results are not qualified while positive results are qualified "J", estimated. However, when an observed area count is <60%, positive results are qualified "J" estimated while non-detected results are rejected.

The reported analysis for all samples, lab control sample, and associated method blanks had internal standard areas and retention times within QC criteria in all cases.

6. COMPOUND IDENTIFICATION

Volatile

The TCL compounds are identified on the GC/MS by using the analytes relative retention time (RRT) and ion spectra. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound, and have ion spectra which has a ratio of the primary and secondary ion intensities within 20% of that in the standard compound. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

All identification criteria were met. Therefore, no analytes were qualified for compound identification.

Volatile Tentatively Identified Compounds

Tentatively Identified Compounds (TICs) were reported by the laboratory and reviewed for quality assurance. For all TIC results where there is presumptive evidence of a match, being greater than or equal to an 85% match, the results are qualified "NJ", tentatively identified. If the non-target compound is reported as an unknown, the result is qualified "J", estimated. Likewise, if it is determined that the identification of a TIC is unacceptable, the tentative identification of the compound is changed to "unknown" and the result is qualified "J", estimated.

Tentatively identified compounds were not reported by the laboratory and were not evaluated for this program.

7. LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) is spiked with the same analytes at the same concentrations as the matrix spike. The LCS results are used to verify that the laboratory can perform the analysis in a clean matrix.

All LCS accuracy indicators were favorable with the following exceptions.

The observed recoveries for naphthalene and 1,2,4-trichlorobenzene were lower than the lowest acceptance limits. All samples in this SDG are associated with the non-compliant LCS. Potential low bias is indicated. The results reported for the impacted analytes have been qualified "J" or "UJ", as appropriate on this basis.

8. **REPORTING**

No problems were found for this criterion.

9. OTHER QUALITY CONTROL DATA OUT OF SPECIFICATION

None.

10. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method, including sampling, analysis, and site heterogeneity.

Samples 754011-SGP-05-060123 and 754011-SGP-FD-060123 were submitted as a field duplicate pair in association with this SDG. Adequate field precision was demonstrated with the exception of the analytes listed below. The results reported for the impacted analytes in the field duplicate samples have been qualified "J" or "UJ", as appropriate on this basis.

acetone	cis-1,2-dichloroethylene	ethyl acetate
tetrachloroethylene	trichloroethylene	

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

Clean canisters were used to transport air samples in this SDG. All criteria were met to ensure containers were appropriate for sample storage.

Overall, the laboratory data generated met the project goals and quality control criteria, with the exceptions identified in this report and as summarized in Table 1.

Table 1 **Review Elements Summary**

	Were acceptance criteria met?		
	Yes	N	0
Volatiles		Major	Minor
Holding Time	х		
Method Blanks	х		
Storage Blanks	NA		
Trip Blanks	NA		
Field Blanks	NA		
Mass Spectrometer Tuning			
Calibration Response Factor			
Calibration Percent Relative Standard Deviation and Percent Difference			х
Internal Standards			
Compound Identification - Volatile			
Tentatively Identified Compounds - Volatile			
Laboratory Control Sample			х
Reporting			
Other Quality Control Data out of Specification			
Field Duplicate			х

Major= Major data quality issue identified resulting in rejection of data. Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations. NA = Not applicable

Data Qualifier	Definition
U	The analyte was analyzed for but was not detected above the level of the
	reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the
	approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been "tentatively
	identified" and the associated numerical value represents its approximate
	concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation
	limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious
	deficiencies in meeting Quality Control (QC) criteria. The analyte may or may
	not be present in the sample.

Table 2Data Validation Qualifiers



DATA USABILITY SUMMARY REPORT FOR VOLATILES

PROJECT: Owego Heat Site

CLIENT: EA Engineering, Science and Technology, Inc.

LABORATORY: Con-Test, Pace Analytical Laboratory

SAMPLE DELIVERY GROUP: 23G0805

SAMPLE DATES: 07/06/2023

This sample delivery group consist of the following samples:

Sample Identification	Laboratory Identification
754011-SGP-05	23G0805-01
754011-SGP-DUP	23G0805-02

The samples described above were analyzed via methods USEPA TO-15 and/or USEPA TO-15 SIM to determine the concentrations of trace volatile organic analytes (VOAs) in air samples.

Project specific quality assurance (QA) objectives, as well as the USEPA Region II SOP, Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15 Data Validation, HW-31, Rev. 6, June 2014 have been considered during validation of this data and its usability.

Table 1 provides a summary of major and minor data quality issues identified for this data set. All data are acceptable except those results which have been qualified with "R", rejected. Data validation qualifiers along with associated descriptions are provided in Table 2. All data qualification related to this group of samples is detailed on the attached sheets.

Per USEPA Region 2 Validation Guidance, "All data users should note two facts. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables even as a last resort. Second, no analyte concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error."

1. HOLDING TIME/SAMPLE HANDLING

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Proper sample handling and preservation also play a role in the chemical stability of analytes in the sample matrix. If samples are not collected and stored using proper containers and/or preservatives, data may not be valid.

The samples in this delivery group were prepared and analyzed within the holding time specified in the validation guidelines.

2. BLANK CONTAMINATION

Quality assurance blanks include method, storage, trip, field, or rinse blanks. Blanks are prepared to identify any contamination, which may have been introduced into the samples during preparation and analysis or field activity. Method and storage blanks measure laboratory contamination. Trip blanks measure cross contamination during shipment. Field and rinse blanks measure cross contaminations.

Method Blanks

Method blanks were prepared and analyzed in association with the samples in this delivery group at the specified frequency. Upon examination of method blank data, no analyte was positively identified at a concentration equal to or above the method detection limit (MDL).

Storage Blanks

No storage blanks were required for this sample delivery group (SDG).

Trip Blanks

No trip blanks were submitted in association with this SDG.

Field Blanks

No field blanks were submitted in association with this SDG.

3. MASS SPECTROMETER TUNING

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances.

The tuning standard for volatiles is bromofluorobenzene (BFB).

All tunes associated with this SDG were fully compliant.

4. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative results. The initial calibration curve demonstrates that the instrument is capable of giving acceptable performance at the beginning of an analytical sequence. The continuing calibration verifies that the instrument is continuing to provide satisfactory daily performance. Additionally, a continuing calibration is analyzed at the end of each 24-hour analytical sequence, denoted as a "closing" calibration verification and ascertains acceptable performance at the conclusion of the analytical sequence.

Note, no closing continuing calibration verifications were performed in association with this SDG.

Response Factor

The relative response factor (RRF) measures the instruments responses to specific chemical compounds. The RRFs for the volatile organic analysis (VOA) target compound list (TCL) must be ≥ 0.05 in both the initial and continuing calibrations with exception of poor response compounds, where RRFs must be ≥ 0.01 . Additionally, the RRF in the closing continuing calibration must be ≥ 0.01 . A value less than the respective criteria indicates serious detection and quantitation problems. If the mean RRF of the initial calibration or the continuing calibration RRF is <0.05, or <0.01 for poor response compounds, or the RRF for the closing continuing calibration is <0.01 for any analyte, those analytes detected in environmental samples will be qualified as estimated. All non-detects for those analytes will be rejected.

The RRF values in all initial and continuing calibrations were found to be acceptable in all cases.

Percent Relative Standard Deviation and Percent Deviation

Percent relative standard deviation (%RSD) is calculated from the initial calibration and is used to indicate stability of a specific compound over the calibration range. Percent deviation (%D) compares the response factor of the continuing calibration with the mean response factor of the initial calibration. Therefore, %D is a measure of the instrument's daily performance.

The following QC criteria have been applied for this project:

The %RSD of initial calibration must be <30%.

An RSD value outside initial calibration limit indicates the potential for quantitation errors. For this reason, all positive results are qualified as estimated. Severe performance failures (RSD >90%) require qualification of non-detected results as well.

The %D for continuing calibration must be <30%.

A value outside these limits indicates the potential for detection and quantitation errors. For these reasons, all positive results are qualified as estimated, and non-detects are qualified with "UJ".

All initial calibration and continuing calibration %RSD and %D values were within defined QC criteria with the following exceptions.

The %D value for carbon tetrachloride was outside of acceptance limits for the continuing calibration verification (CCV) associated with all samples in this SDG. The results reported for carbon tetrachloride have been qualified "UJ" on this basis.

5. INTERNAL STANDARDS PERFORMANCE

Internal standard performance criteria are meant to ensure that the gas chromatography/mass spectrometry (GC/MS) sensitivity and response are stable during every experimental run.

The internal standard area count must not vary by more than a factor of two from the associated continuing calibration standard. The retention time of the internal standard must not vary by more than +/- 20 seconds from the associated continuing calibration standard. The area count must be within -60% to +140% range of the associated standard. If area count is >140% non-detected results are not qualified while positive results are qualified "J", estimated. However, when an observed area count is <60%, positive results are qualified "J" estimated while non-detected results are rejected.

The reported analysis for all samples, lab control sample, and associated method blanks had internal standard areas and retention times within QC criteria in all cases.

6. COMPOUND IDENTIFICATION

Volatile

The TCL compounds are identified on the GC/MS by using the analytes relative retention time (RRT) and ion spectra. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound, and have ion spectra which has a ratio of the primary and secondary ion intensities within 20% of that in the standard compound. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

All identification criteria were met. Therefore, no analytes were qualified for compound identification.

Volatile Tentatively Identified Compounds

Tentatively Identified Compounds (TICs) were reported by the laboratory and reviewed for quality assurance. For all TIC results where there is presumptive evidence of a match, being greater than or equal to an 85% match, the results are qualified "NJ", tentatively identified. If the non-target compound is reported as an unknown, the result is qualified "J", estimated. Likewise, if it is determined that the identification of a TIC is unacceptable, the tentative identification of the compound is changed to "unknown" and the result is qualified "J", estimated.

Tentatively identified compounds were not reported by the laboratory and were not evaluated for this program.

7. LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) is spiked with the same analytes at the same concentrations as the matrix spike. The LCS results are used to verify that the laboratory can perform the analysis in a clean matrix.

All LCS accuracy indicators were favorable with the following exceptions.

The observed recovery for naphthalene was higher than the highest acceptance limit. All samples in this SDG are associated with the non-compliant LCS. Potential high bias is indicated. The results reported for naphthalene have been qualified "J" on this basis.

8. **REPORTING**

No problems were found for this criterion.

9. OTHER QUALITY CONTROL DATA OUT OF SPECIFICATION

The laboratory analyzed a matrix duplicate on sample 754011-SGP-DUP. Adequate laboratory precision was demonstrated.

Ethanol exceeds the upper calibration limit of the instrument for samples 754011-SGP-05 and 754011-SGP-DUP. The ethanol results in the impacted samples have been qualified "J" on this basis.

10. FIELD DUPLICATE

Field duplicates are two (or more) field samples collected at the same time in the same location. Each of the samples represents the same population and is carried through all steps of the sampling and analytical procedures in an identical manner. Field duplicate results are used to assess precision of the total method, including sampling, analysis, and site heterogeneity.

Samples 754011-SGP-05 and 754011-SGP-DUP were submitted as a field duplicate pair in association with this SDG. Adequate field precision was demonstrated with the exception of the carbon disulfide. Carbon disulfide results reported in the field duplicate samples have been qualified "J" or "UJ", as appropriate on this basis.

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

Clean canisters were used to transport air samples in this SDG. All criteria were met to ensure containers were appropriate for sample storage.

Overall, the laboratory data generated met the project goals and quality control criteria, with the exceptions identified in this report and as summarized in Table 1.

Table 1 **Review Elements Summary**

		Were acceptance criteria met?	
		No	
Volatiles		Major	Minor
Holding Time	х		
Method Blanks	х		
Storage Blanks	NA		
Trip Blanks	NA		
Field Blanks	NA		
Mass Spectrometer Tuning			
Calibration Response Factor			
Calibration Percent Relative Standard Deviation and Percent Difference			х
Internal Standards			
Compound Identification - Volatile			
Tentatively Identified Compounds - Volatile			
Laboratory Control Sample			х
Reporting			
Other Quality Control Data out of Specification			х
Field Duplicate			х

Major= Major data quality issue identified resulting in rejection of data. Minor= Minor data quality issue identified resulting in the qualification of data. Data qualification should be used to inform the data users of data limitations. NA = Not applicable

Data Qualifier	Definition
U	The analyte was analyzed for but was not detected above the level of the
	reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the
	approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis indicates the presence of an analyte that has been "tentatively
	identified" and the associated numerical value represents its approximate
	concentration.
UJ	The analyte was analyzed for but was not detected. The reported quantitation
	limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious
	deficiencies in meeting Quality Control (QC) criteria. The analyte may or may
	not be present in the sample.

Table 2Data Validation Qualifiers

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