ISTR Operations Monthly Progress Report

Reporting Period: **March 2021**

Operable Unit 3 VOC Source Area Remedy
Former Grumman Settling Ponds, Bethpage, NY
NYSDEC Site No. 130003A
April 27, 2021

In-Situ Thermal Remediation (ISTR) Operations Monthly Progress Report

NORTHROP GRUMMAN

Prepared per Section 8.2 of the OU3 Remedial Action Work Plan (RAWP) and DER-10, Section 5.7(b):

1. Remedy Progress / Performance Monitoring
2. Ambient Air
3. TVOC Confirmation Sampling
4. Significant Activities
5. Schedule / Proposed Modifications
6. Pending RAWP Modifications
7. Data Tables

Remedy Progress / Performance Monitoring March 2021

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ISTR Operations Summary

- Air emissions comply with effluent concentration limits specified in the RAWP
- No exceedances of NYSDEC Community Air Monitoring Plan (CAMP) PID action levels
- No validated ambient air monitoring results above target screening levels
- Liquid discharges comply with criteria specified in the RAWP

Reporting Period: March 2021

System Startup	8/26/2020
Days of Operation Since Startup	217
Estimated cumulative TVOC Mass Removed, lbs	899

Remedy Progress / Performance Monitoring
March 2021

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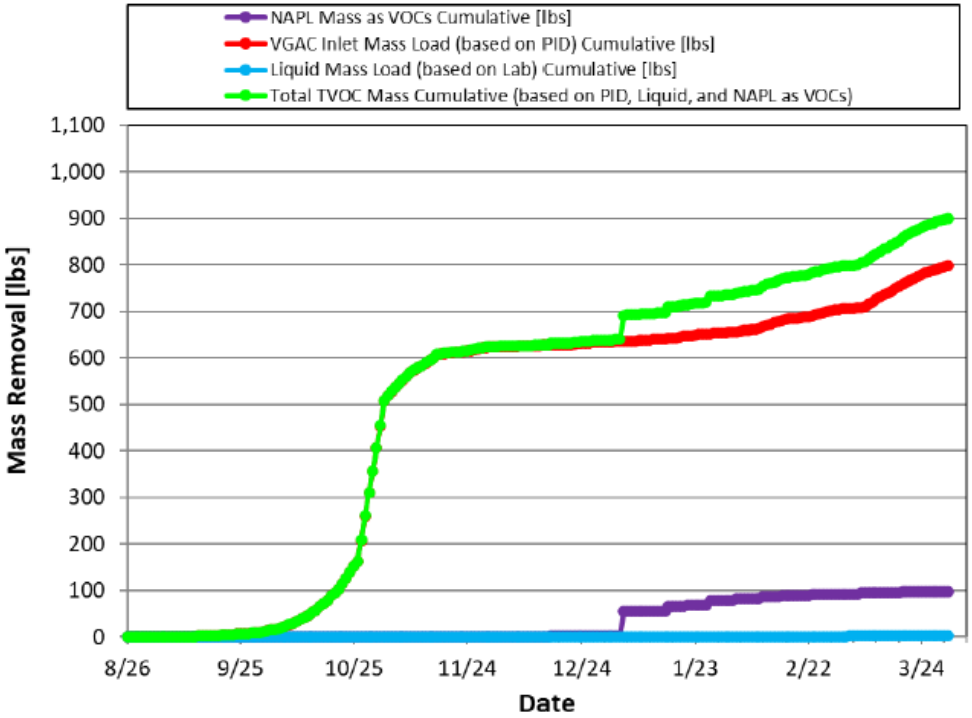
Cumulative TVOC Mass Removed



Estimated 899 lbs of total volatile organic compounds (TVOCs) removed through 3/31

Cumulative TVOC mass is the sum of the following:

- Photoionization detector (PID) TVOC vapor mass
- Liquid TVOC mass
- Condensed non-aqueous phase liquid (NAPL) TVOC mass (estimated NAPL accumulated through 3/31 is included)

Remedy Progress / Performance Monitoring March 2021

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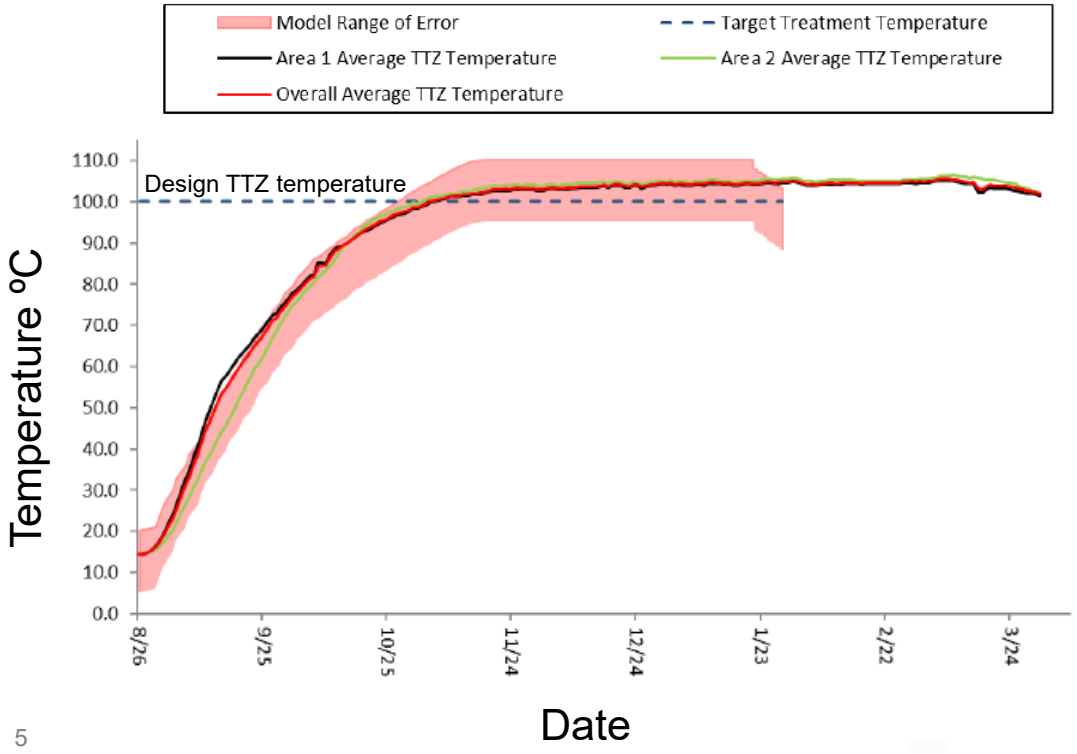
Cumulative Temperature Progression



Target treatment zone (TTZ) design temperature is 100ºC

Days of treatment at 100°C through March 31:

- Area 1 = 147 days
- Area 2 = 149 days

Remedy Progress / Performance Monitoring March 2021

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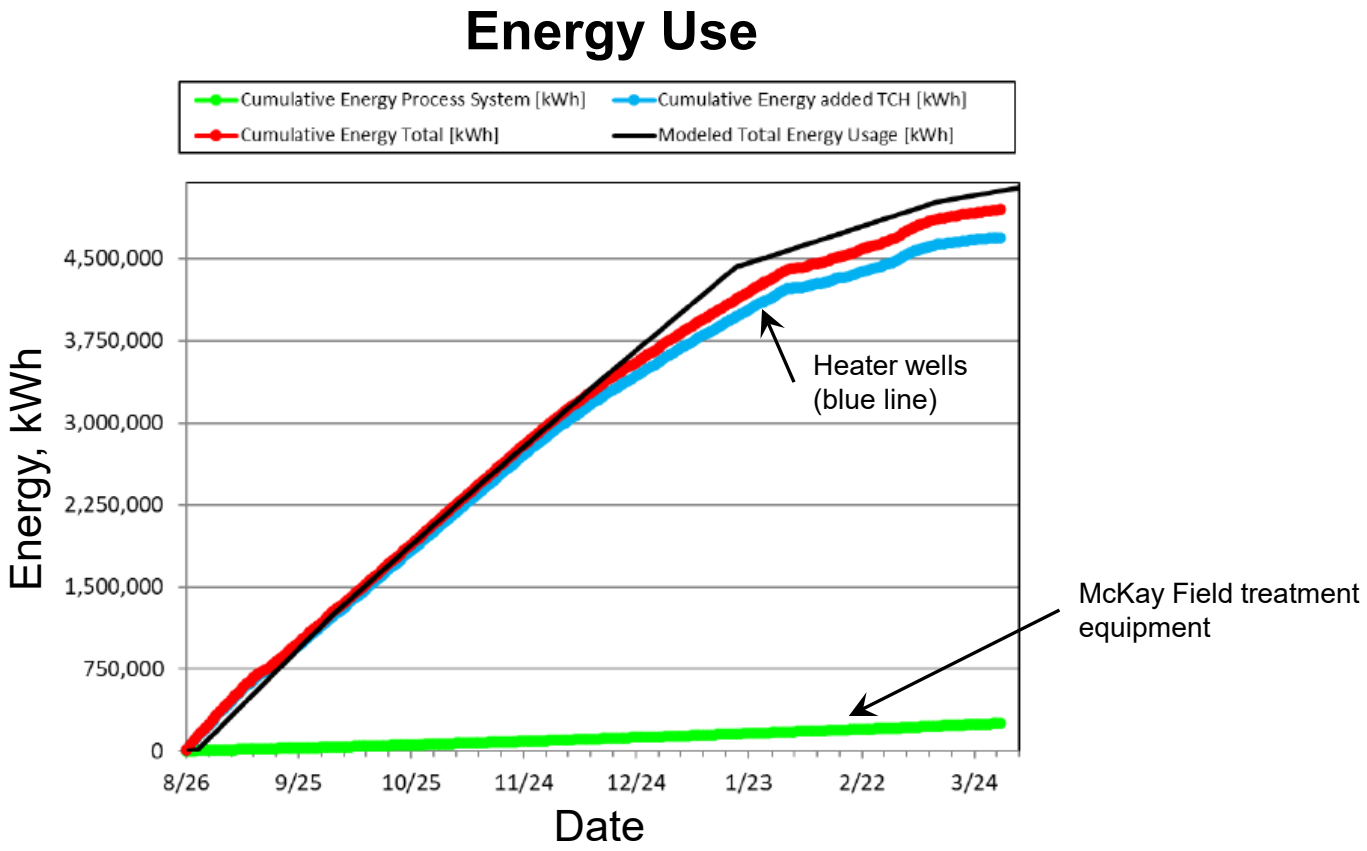

Remedy Progress / Performance Monitoring March 2021

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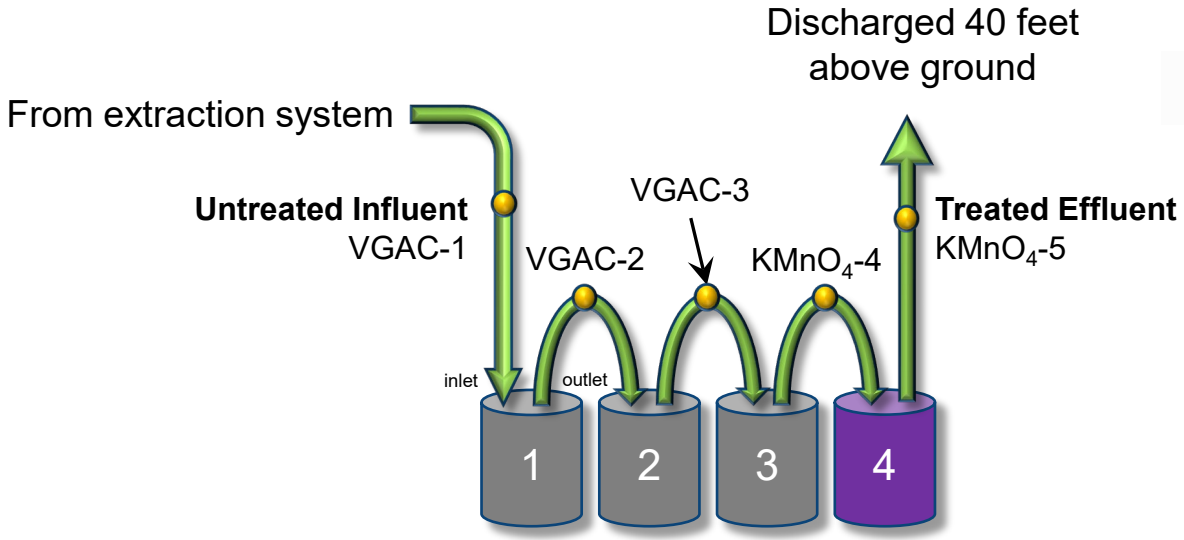
Vapor Treatment System



- Vapor Treatment System Sampling Locations

Remedy Progress / Performance Monitoring March 2021

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Vapor Treatment System

Air emissions meet treatment criteria in the RAWP:

- Stack concentrations less than 7.6 mg/m^3 for TCE and 1.9 mg/m^3 design limits for vinyl chloride throughout March except for a slight excursion of the design limit for vinyl chloride on 3/30 (1.96 mg/m^3).
- TCE and vinyl chloride concentrations in ambient air samples collected in March were all below target screening levels.

Vapor treatment system analytical results for March provided in Table 1

Remedy Progress / Performance Monitoring March 2021

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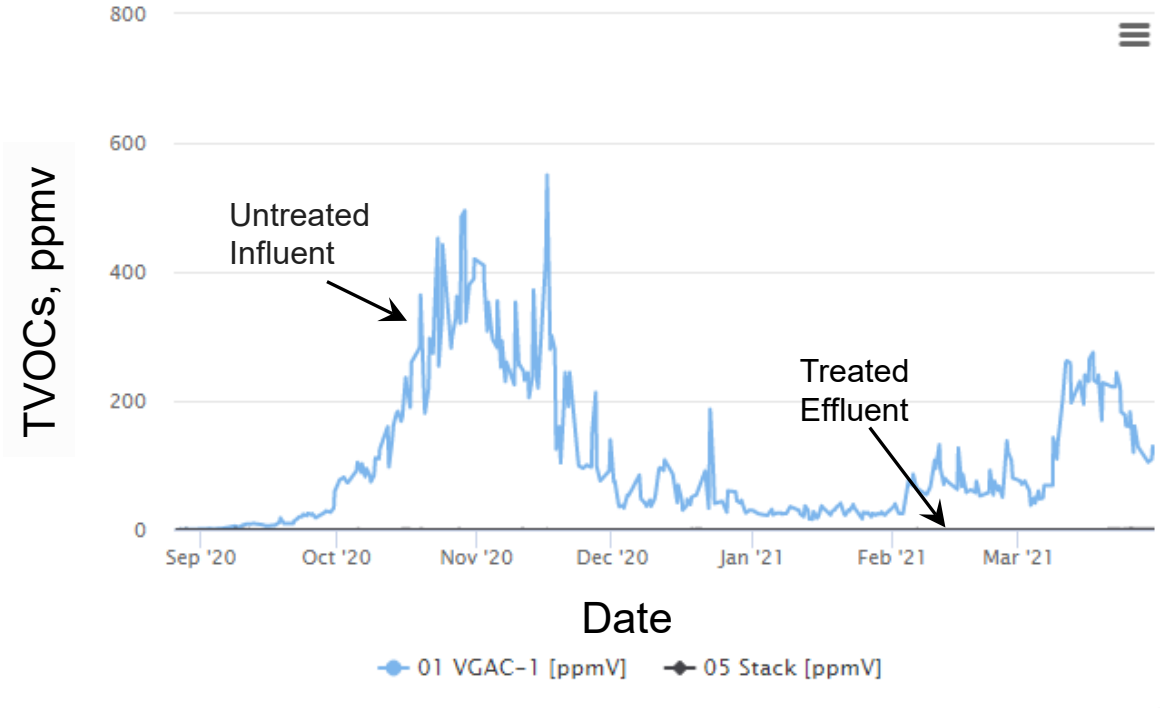
Vapor Treatment System (PID)



TVOC concentrations (PID) on March 31:

- Influent = 117.5 ppmv
- Effluent = 0.8 ppmv

Maximum TVOC concentrations (PID) during reporting period:

- Influent = 275 ppmv
- Effluent = max 1.3 ppmv

Remedy Progress / Performance Monitoring March 2021

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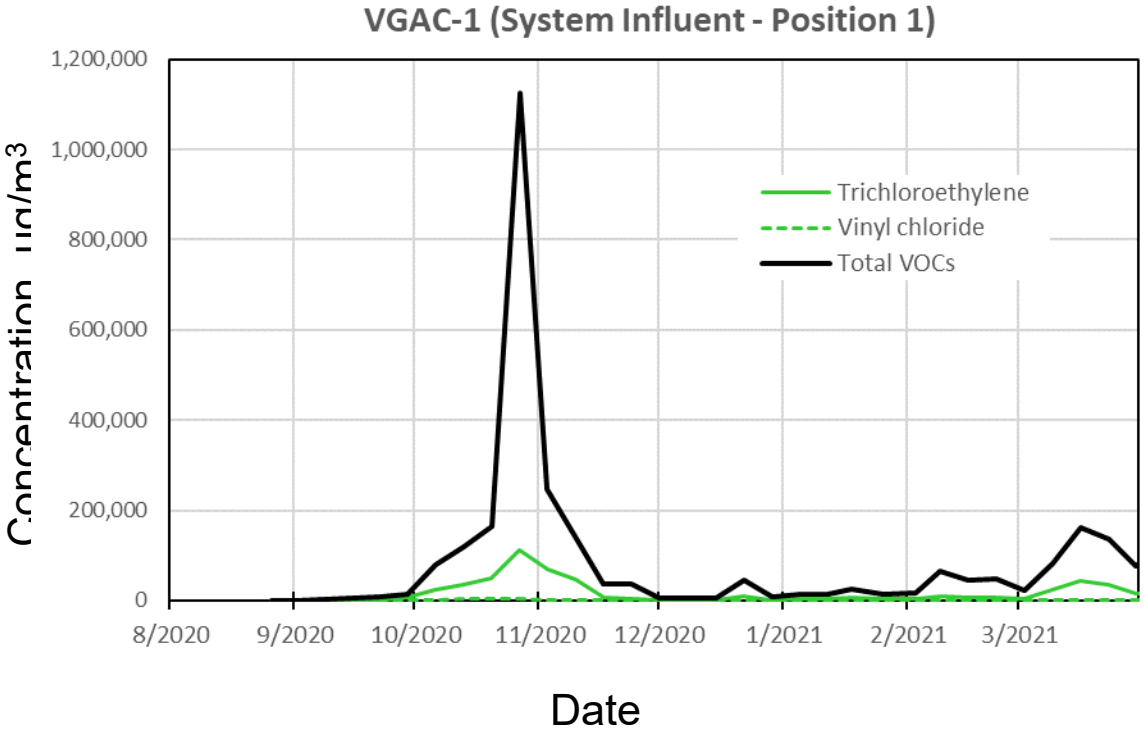
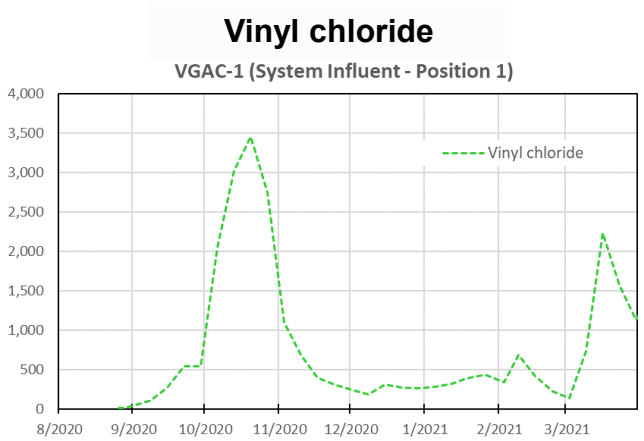
Vapor Treatment System Influent



Influent concentrations (Summa) on 3/30:

- TVOCs = 76,968 ug/m^3
- TCE = 14,800 ug/m^3
- Vinyl chloride = 1,130 ug/m^3



Remedy Progress / Performance Monitoring March 2021

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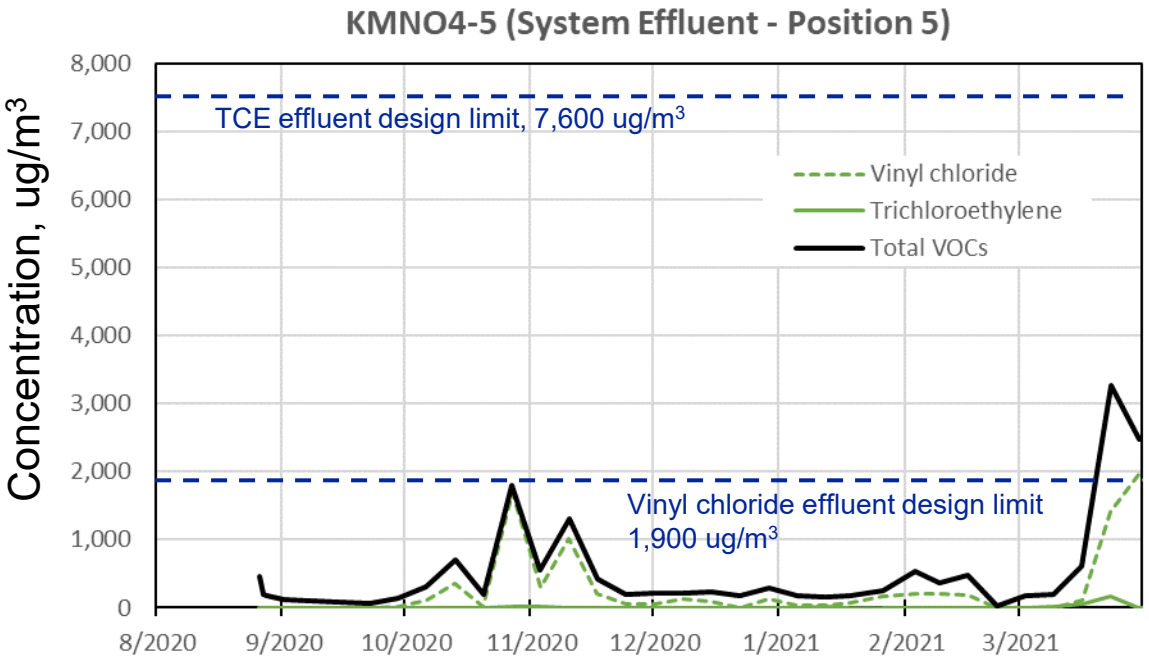
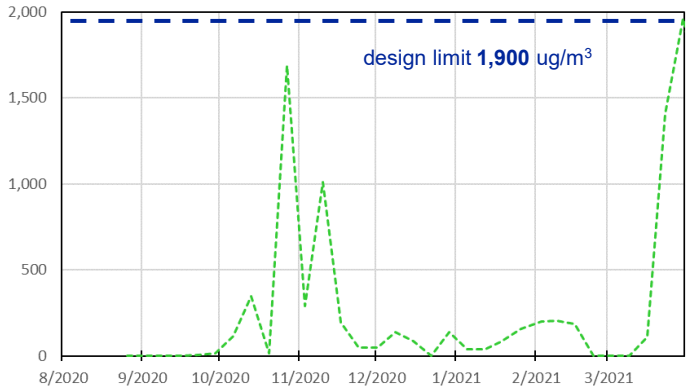
Vapor Treatment System Effluent



Effluent concentrations (Summa) on 3/30:

- TVOCs = 2,476 ug/m^3
- TCE = 5.9 ug/m^3
- Vinyl chloride = 1,960 ug/m^3

Vinyl chloride



Remedy Progress / Performance Monitoring March 2021

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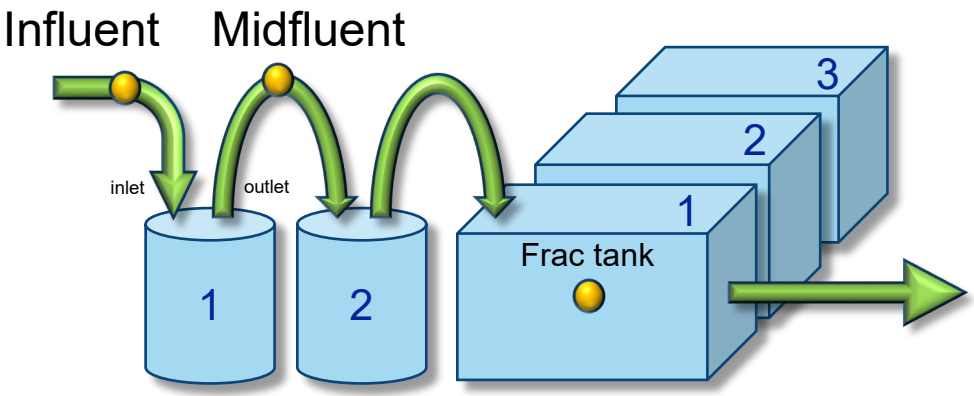
Liquid Treatment System

- Liquid Treatment System Sampling Locations



Activated Carbon Vessels

Treated Effluent Storage (~18,000-gallon batches)

Treated liquid pumped to OU3 Groundwater Treatment System

Remedy Progress / Performance Monitoring
March 2021

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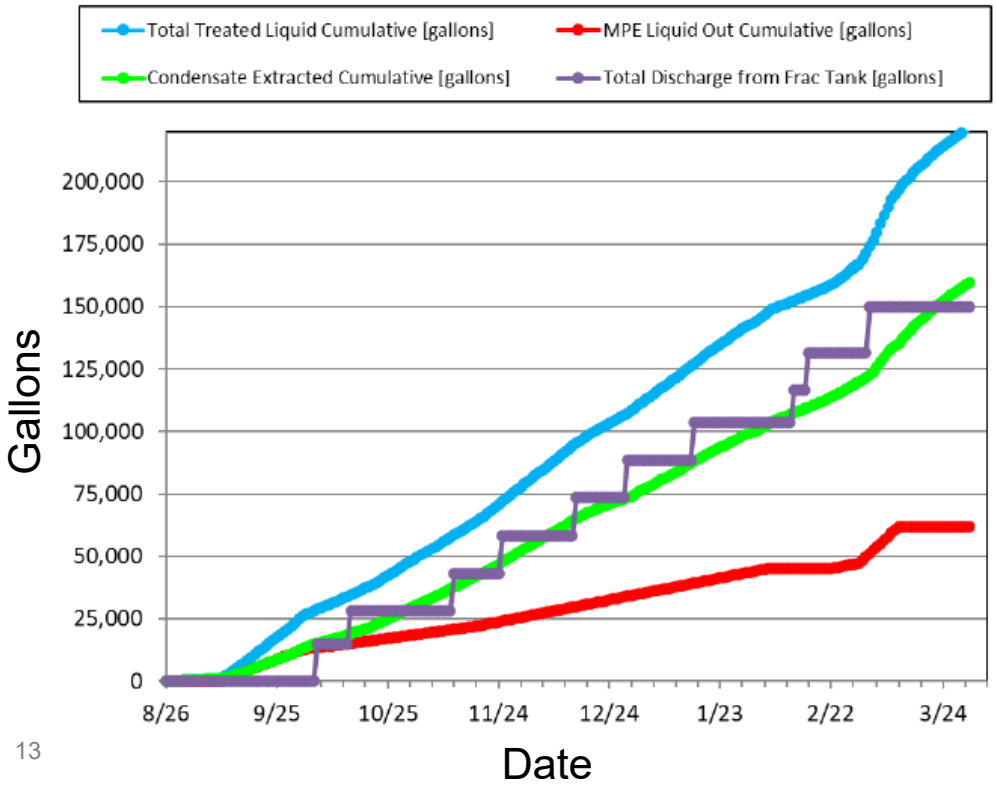
Cumulative Liquid Produced



220,000 total gallons extracted and treated through 3/30

149,790* total gallons treated water discharged to OU3 groundwater treatment system

Approximately 55,000 gallons stored onsite pending characterization and disposal

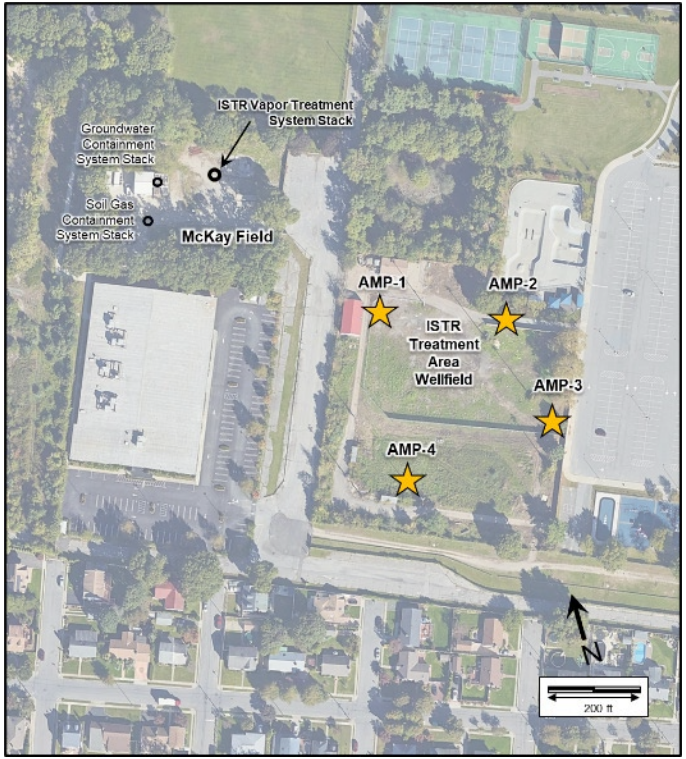
* between March 23-25, 14,989 gallons of treated water were removed by Clean Harbors

Liquid treatment system analytical results for March provided in Table 2

Ambient Air PID Monitoring

PID levels comply with Community Air Monitoring Plan (CAMP) criteria in the RAWP:

- PID readings recorded continuously at locations AMP-1 through 4
- Results emailed daily to the State and Town of Oyster Bay (Monday through Saturday)
- PID monitoring results did not exceed NYSDEC's CAMP action level (5 ppm TVOCs for a 15-minute average)

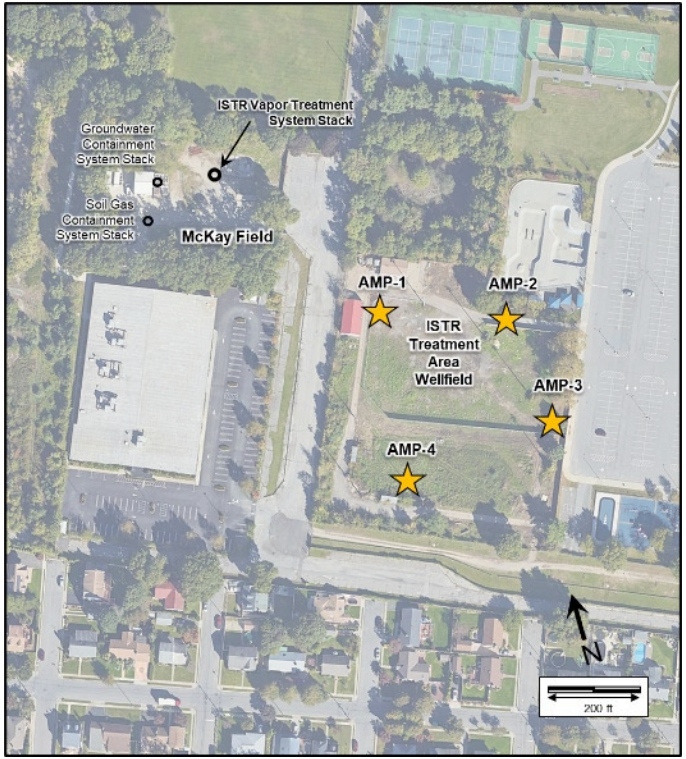


Ambient Air Summa Canister Monitoring

Summa canister levels comply with ambient air criteria in the RAWP:

- Summa canister samples collected 3/9, 3/16, 3/23, and 3/30
- Unvalidated results emailed to the State and Town of Oyster Bay
- Summa canister validated results for compounds of interest (COIs) lower than target screening levels in the CAMP
- Summa canister validated results for non-COIs also lower than target screening levels calculated using CAMP-specified protocol

Ambient air analytical results for March provided in Table 3



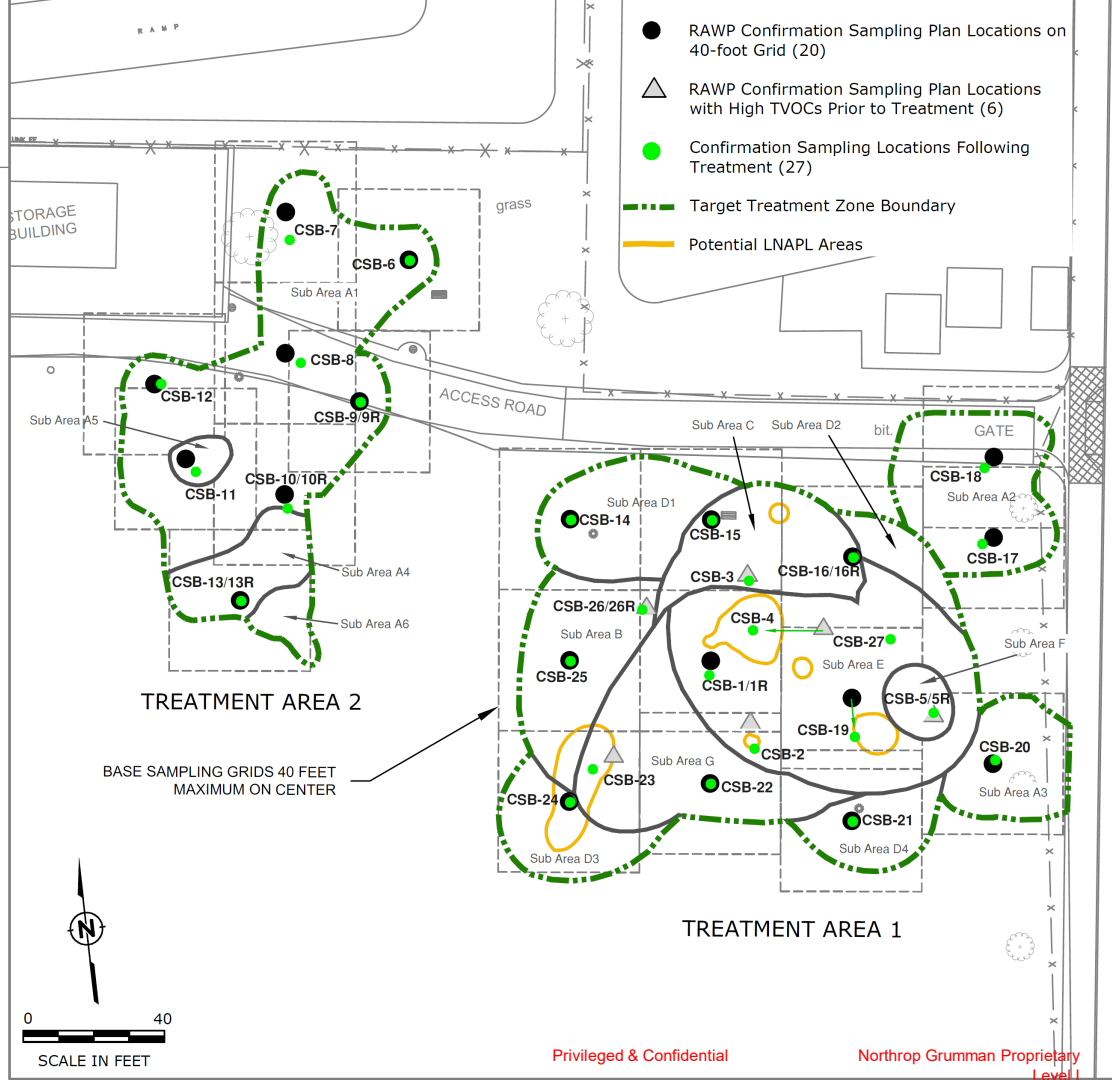
TVOC Confirmation Sampling

DRAFT

27 borings plus 2 repeat borings (176 samples) sampled 2/3-2/25:

6 repeat borings (11 samples) sampled 3/8-3/9:

- Resampled intervals missed in first borings due to poor sample recovery
- Delineated TVOCs vertically where > 10 mg/kg at top or bottom of original boring



TVOC Results
2/3-2/25 Event

Average TVOC concentration of 1.1 mg/kg

168 of 176 samples (95.5%) < 10 mg/kg

Legend: 0.021 TVOCs < 10 mg/kg; 17 TVOCs > 10 mg/kg; ***0.040*** Resample TVOCs; NS No sample recovery

Boring ID	Date Sampled	TVOC Concentration (mg/kg) — Sampling Interval (ft bgs)														
		32-34	34-36	36-38	38-40	40-42	42-44	44-46	46-48	48-50	50-52	52-54	54-56	56-58	58-60	60-62
Area 1																
CSB-1	2/8/21	0.021	0.036	0.0021	NS	NS	0.52	0.092	1.7	0.43	0.020	0.018	0.060			
CSB-1R	2/19/21				***0.40***	***0.17***										
CSB-2	2/5/21	0.0018	NS	0.011	0.034	NS	0.40	3.2	4.7	0.030	0.026	0.19	NS			
CSB-3	2/3/21		0.029	0.050	0.093	0.18	0	0	0	0.093	0.13					
CSB-4	2/4/21	0.085	NS	0.10	0.026	0.18	0.031	0.036	0.046	0.016	NS	0.074	0.034			
CSB-5	2/23/21		0.018	0.040	0.52	0.33	0.59	0.064	0.032	0.027	0.26	0.21	0.19	3.2	8.9	17
CSB-14	2/16/21						0.088	0.096	0.14	0.23						
CSB-15	2/17/21		0	NS	0.032	0.076	0.026	0.076	0.020	0	0.051					
CSB-16	2/4/21		0	0.034	0.34	6.0	0.33	0.037	NS	0.16	NS					
CSB-16R	2/22/21								***1.1***							
CSB-17	2/24/21			0.0081	0.051	0.045	0.041	2.0	4.1	0.22	NS					
CSB-18	2/25/21			0.0055	0.13	15	0.52	0.20	0.064	NS	0.063	0.039				
CSB-19	2/9/21	0.071	0.065	0.037	0.048	0.15	0.076	0.23	0.29	0.028	0.037	0.10	0.087			
CSB-20	2/23/21							0.50	0.14	0.20	0.039					
CSB-21	2/22/21						0.070	10	4.8	0.65	0.35					
CSB-22	2/19/21				0.0057	0.054	0.092	0.24	0.24	0.15						
CSB-23	2/10/21				0.10	0.023	0.037	1.5	0.16	0.074						
CSB-24	2/17/21						0.22	0.21	0.14							
CSB-25	2/17/21					0.096	0.18	0.038								
CSB-26	2/19/21					11	0.074	0.33								
CSB-27	2/24/21	0.0074	NS	0.044	0.025	NS	0.22	13	0.32	0.67	0.51	0.13	0.11			
Area 2																
CSB-6	2/16/21							1.2	0.48	0.051	0.34					
CSB-7	2/15/21							0.34	0.41	0.10	0.18					
CSB-8	2/15/21							0.15	0.011	0.073	0.010					
CSB-9	2/15/21							30	0.71	0.31	0.11					
CSB-10	2/12/21						0.010	0.083	0.0089	0.26	15					
CSB-11	2/10/21						0.44	0.014	0.055	0.22	0.60	NS				
CSB-12	2/10/21							0.22	0.033	0	0.025					
CSB-13	2/12/21						0.022	0.25	0.020	0.38	21					

Focused Treatment after 2/25

Enhanced remediation applied in intervals where TVOCs > 10 mg/kg at top or bottom of borings:

- Temporarily increased energy input to nearby heater wells to raise temperatures.
- Bailed or pumped down nearby vertical extraction well (VEW) wells to remove high perched water and expose more well screen for improved vapor extraction.
- Installed additional VEW screens to enhance vapor capture above perched water.
- Temporarily increased MPE well pumping rate to lower water table and expose more VEW well screen.

TVOC Results
3/8-3/9 Event

Average TVOC concentration of 0.63 mg/kg (previously 1.1 mg/kg)

179 of 183 samples (98%) < 10 mg/kg (previously 95.5%)

Legend: 0.021 TVOCs < 10 mg/kg; 15 TVOCs > 10 mg/kg; 17 TVOCs treated < 10 mg/kg; 0.040 Resample TVOCs; NS No sample recovery

Boring ID	Date Sampled	TVOC Concentration (mg/kg)															
		Sampling Interval (ft bgs)															
		32-34	34-36	36-38	38-40	40-42	42-44	44-46	46-48	48-50	50-52	52-54	54-56	56-58	58-60	60-62	62-64
Area 1																	
CSB-1	2/8/21	0.021	0.036	0.0021	NS	NS	0.52	0.092	1.7	0.43	0.020	0.018	0.060				
CSB-1R	2/19/21				***0.40***	***0.17***											
CSB-2	2/5/21	0.0018	NS	0.011	0.034	NS	0.40	3.2	4.7	0.030	0.026	0.19	NS				
CSB-3	2/3/21		0.029	0.050	0.093	0.18	0	0	0	0.093	0.13						
CSB-4	2/4/21	0.085	NS	0.10	0.026	0.18	0.031	0.036	0.046	0.016	NS	0.074	0.034				
CSB-5	2/23/21		0.018	0.040	0.52	0.33	0.59	0.064	0.032	0.027	0.26	0.21	0.19	3.2	8.9	17	
CSB-5R	3/8/21															0.012	0.0065
CSB-14	2/16/21						0.088	0.096	0.14	0.23							
CSB-15	2/17/21		0	NS	0.032	0.076	0.026	0.076	0.020	0	0.051						
CSB-16	2/4/21		0	0.034	0.34	6.0	0.33	0.037	NS	0.16	NS						
CSB-16R	2/22/21								***1.1***								
CSB-16R1	3/8/21										0.030	0.033					
CSB-17	2/24/21			0.0081	0.051	0.045	0.041	2.0	4.1	0.22	NS						
CSB-18	2/25/21			0.0055	0.13	15	0.52	0.20	0.064	NS	0.063	0.039					
CSB-19	2/9/21	0.071	0.065	0.037	0.048	0.15	0.076	0.23	0.29	0.028	0.037	0.10	0.087				
CSB-20	2/23/21							0.50	0.14	0.20	0.039						
CSB-21	2/22/21						0.070	10	4.8	0.65	0.35						
CSB-22	2/19/21				0.0057	0.054	0.092	0.24	0.24	0.15							
CSB-23	2/10/21				0.10	0.023	0.037	1.5	0.16	0.074							
CSB-24	2/17/21						0.22	0.21	0.14								
CSB-25	2/17/21					0.096	0.18	0.038									
CSB-26	2/19/21					11	0.074	0.33									
CSB-26R	3/8/21				0.038	NS											
CSB-27	2/24/21	0.0074	NS	0.044	0.025	NS	0.22	13	0.32	0.67	0.51	0.13	0.11				
Area 2																	
CSB-6	2/16/21							1.2	0.48	0.051	0.34						
CSB-7	2/15/21							0.34	0.41	0.10	0.18						
CSB-8	2/15/21							0.15	0.011	0.073	0.010						
CSB-9	2/15/21							30	0.71	0.31	0.11						
CSB-9R	3/9/21						0.035	***0.35***									
CSB-10	2/12/21						0.010	0.083	0.0089	0.26	15						
CSB-10R	3/9/21										0.015	0.010					
CSB-11	2/10/21						0.44	0.014	0.055	0.22	0.60	NS					
CSB-12	2/10/21							0.22	0.033	0	0.025						
CSB-13	2/12/21						0.022	0.25	0.020	0.38	21						
CSB-13R	3/9/21										0.043	0.018					

Side-by-Side Comparison of TVOC Pretreatment and Confirmation Results

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Pre-Treatment Boring ID	Confirmation Sample Boring	Sampled Depth (ft bls)	Pretreatment Concentration (mg/kg)	Confirmation Concentration (mg/kg)
nN-9-14	CSB-1/1R	40-42	1,383	0.17
		42-44	78	0.52
		44-46	not sampled	0.092
		46-48	2,517	1.7
LIF-HPT-19SB	CSB-1/1R	43-45	7,735	0.52
				0.092
nM-11-14	CSB-23	40-42	374	0.023
		42-44	605	0.037
		46-48	106	0.16
LIF-HPT-1SB	CSB-3	44-46	750	0
		46-48	1,800	0
		48-50	39	0.093
VP-27-14	CSB-2	36-38	22	0.011
		42-44	95	0.40
		46-48	4,814	4.7
		48-50	29	0.030
LIF-HPT-8	CSB-2	44-46	3,524	3.2

Significant Activities

Major equipment repairs and significant downtime:

- No major equipment repairs.

Other significant activities:

- Installed and began operating in early March at new shallow VEW wells at selected locations screened above perched water.
- Completed confirmation sampling 3/9.
- Reduced power input to heaters 3/12 and 3/26.
- Discontinued groundwater extraction from MPE wells 3/12.

Planned Significant Activities During Next Two Months

Maintain system operations, monitoring, and maintenance in preparation for system shutdown.

Schedule

Activity	RAWP Schedule	Current Status
Remedial System Operation	Q3/20 – Q1/21	Continuing into Q2
Post-Treatment Confirmation Sampling	Q1/21	Complete
Remedy Cool-down	Q1/21-Q2-21	On schedule
Equipment Removal & Site Restoration	Q2/21	On schedule

Remedial system operation continues to address vapor treatment system influent concentrations.

No significant schedule modifications anticipated.

Pending RAWP Modifications

None

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Table 1. Vapor Treatment System Air Sampling Results
Routine Monitoring - March 2021

Compound (ug/m^3) / Sample ID: / Lab Sample ID: / Date Sampled:	VGAC-1 JD21030-1 3/2/2021	VGAC-3 JD21030-2 3/2/2021	KMNO4-5 JD21030-3 3/2/2021	DUPLICATE JD21030-4 3/2/2021	Percent Removed
1,1,1-Trichloroethane	< 7.1	< 0.71	< 0.71	< 0.71	
1,1-Dichloroethane	**14 J**	< 0.19	< 0.19	< 0.19	
1,1-Dichloroethylene	**40**	< 0.27	< 0.27	< 0.27	
1,2,4-Trimethylbenzene	< 6.4	< 0.64	< 0.64	< 0.64	
1,2-Dibromoethane	< 5.5	< 0.55	< 0.55	< 0.55	
1,3,5-Trimethylbenzene	< 6.4	< 0.64	< 0.64	< 0.64	
1,4-Dioxane*	< 7.6	< 0.76	< 0.76	< 0.76	
2,2,4-Trimethylpentane	**78.5**	< 0.41	< 0.41	< 0.41	
2-Hexanone	< 6.1	< 0.61	< 0.61	< 0.61	
4-Ethyltoluene	< 5.9	< 0.59	< 0.59	< 0.59	
Acetone*	**2,970**	**2.6**	**18**	**6.7**	
Benzene	**43.1**	< 0.15	< 0.15	< 0.15	
Bromoform	< 16	< 1.6	< 1.6	< 1.6	
Carbon disulfide	**62.6**	< 0.29	< 0.29	< 0.29	
Carbon tetrachloride	< 5.9	< 0.59	< 0.59	< 0.59	
Chloroethane	< 5.0	< 0.50	< 0.50	< 0.50	
Chloroform	< 3.9	< 0.39	< 0.39	< 0.39	
Chloromethane*	**12 J**	< 0.13	**1.1 J**	< 0.13	
cis-1,2-Dichloroethylene	**3,630**	**2.8 J**	**5.2**	**4.8**	
Cyclohexane	**16 J**	< 0.30	< 0.30	< 0.30	
Dichlorodifluoromethane	< 3.3	< 0.33	< 0.33	< 0.33	
Ethanol	**149**	**7.7**	**123**	**207**	
Ethyl acetate	< 5.4	< 0.54	< 0.54	< 0.54	
Ethylbenzene	**118**	< 0.26	< 0.26	< 0.26	
Heptane	**279**	< 0.29	< 0.29	< 0.29	
Hexane	**14 J**	< 0.15	< 0.15	< 0.15	
Isopropyl alcohol*	**31.2**	< 0.64	< 0.64	**2.3**	
m,p-Xylene	**292**	< 0.61	**3.4 J**	< 0.61	
m-Dichlorobenzene	< 4.6	< 0.46	< 0.46	< 0.46	
Methyl ethyl ketone	**513**	< 0.50	**3.2**	< 0.50	
Methyl isobutyl ketone	**19 J**	< 0.57	< 0.57	< 0.57	
Methylene chloride*	< 2.0	< 0.20	< 0.20	< 0.20	
o-Dichlorobenzene	< 5.2	< 0.52	< 0.52	< 0.52	
o-Xylene	**83.4**	< 0.30	< 0.30	< 0.30	
Propylene*	**97.6**	**57.7**	**7.2**	**15**	
Styrene	< 3.2	< 0.32	< 0.32	< 0.32	
Tertiary butyl alcohol	< 1.7	< 0.17	< 0.17	< 0.17	
Tetrachloroethylene	**16**	< 0.81	< 0.81	< 0.81	
Tetrahydrofuran	< 5.9	< 0.59	< 0.59	< 0.59	
Toluene	**8,100**	**3.4**	**17**	**2.2 J**	
trans-1,2-Dichloroethylene	**111**	< 0.11	< 0.11	< 0.11	
Trichloroethylene	**4,300**	**2.7**	**5.4**	**1.7**	37%
Trichlorofluoromethane	< 6.2	< 0.62	< 0.62	< 0.62	
Vinyl acetate	< 4.9	< 0.49	< 0.49	< 0.49	
Vinyl chloride*	**139**	< 0.23	< 0.23	< 0.23	
Xylenes (total)	**376**	< 0.30	**3.4 J**	< 0.30	
TVOCs	**21,129**	**76.9**	**184**	**240**	
TVOCs less poor adsorbers*	**17,900**	**0**	**200**	**200**	

Footnotes:

ug/mg^3 micrograms per cubic meter

* Compound is poorly adsorbed by activated carbon.

< Compound was not detected at or above the indicated value.

J Detected concentration is less than the quantitation limit.

TVOCs Total volatile organic compounds

Detections are highlighted.

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Table 1. Vapor Treatment System Air Sampling Results
Routine Monitoring - March 2021

Compound (ug/m^3)	Sample ID:	VGAC-1		VGAC-3		KMNO4-5		Percent Removed
	Lab Sample ID:	JD21409-1		JD21409-2		JD21409-3		
	Date Sampled:	3/9/2021		3/9/2021		3/9/2021		
1,1,1-Trichloroethane		< 31		**1.2**	J	< 0.71		
1,1-Dichloroethane		**132**	J	< 0.19		< 0.19		
1,1-Dichloroethylene		**144**		< 0.27		< 0.27		
1,2,4-Trimethylbenzene		< 28		< 0.64		< 0.64		
1,2-Dibromoethane		< 23		< 0.55		< 0.55		
1,3,5-Trimethylbenzene		< 28		< 0.64		< 0.64		
1,4-Dioxane*		< 32		< 0.76		< 0.76		
2,2,4-Trimethylpentane		**215**		< 0.41		< 0.41		
2-Hexanone		< 25		< 0.61		< 0.61		
4-Ethyltoluene		< 25		< 0.59		< 0.59		
Acetone*		**4,870**		**34.4**		**21**		
Benzene		**123**		**0.86**	J	< 0.15		
Bromoform		< 66		< 1.6		< 1.6		
Carbon disulfide		**79.7**	J	< 0.29		< 0.29		
Carbon tetrachloride		< 25		< 0.59		< 0.59		
Chloroethane		< 22		**1.3**	J	< 0.50		
Chloroform		**82.5**	J	< 0.39		< 0.39		
Chloromethane*		< 5.4		**20**		**24.4**		
cis-1,2-Dichloroethylene		**14,900**		**73.3**		**5.2**		
Cyclohexane		**67.8**	J	< 0.30		< 0.30		
Dichlorodifluoromethane		< 14		**3.0**	J	< 0.33		
Ethanol		**271**		**24.5**		**15**		
Ethyl acetate		< 23		**7.9**		**4.0**		
Ethylbenzene		**877**		**4.0**		**1.9**	J	
Heptane		**377**		< 0.29		< 0.29		
Hexane		**1,000**		< 0.15		< 0.15		
Isopropyl alcohol*		**4,820**		**17**		**17**		
m,p-Xylene		**2,190**		**12**		**6.1**		
m-Dichlorobenzene		< 19		< 0.46		< 0.46		
Methyl ethyl ketone		**846**		**7.4**		**1.6**	J	
Methyl isobutyl ketone		< 25		< 0.57		< 0.57		
Methylene chloride*		**180**		< 0.20		< 0.20		
o-Dichlorobenzene		< 22		< 0.52		< 0.52		
o-Xylene		**539**		**2.6**	J	**1.7**	J	
Propylene*		< 4.6		**198**		**56.7**		
Styrene		< 14		< 0.32		< 0.32		
Tertiary butyl alcohol		**58.5**	J	< 0.17		< 0.17		
Tetrachloroethylene		**125**		**6.4**		**0.95**	J	
Tetrahydrofuran		< 25		**2.6**		**1.6**	J	
Toluene		**25,100**		**137**		**17**		
trans-1,2-Dichloroethylene		**416**		**1.3**	J	< 0.11		
Trichloroethylene		**23,200**		**83.3**		**11**		100%
Trichlorofluoromethane		< 27		< 0.62		< 0.62		
Vinyl acetate		< 20		< 0.49		< 0.49		
Vinyl chloride*		**734**		**276**		**1.4**	J	
Xylenes (total)		**2,730**		**15**		**7.8**		
TVOCs		**81,300**		**914**		**187**		
TVOCs less poor adsorbers*		**70,700**		**400**		**100**		

Footnotes:

ug/mg^3 micrograms per cubic meter

* Compound is poorly adsorbed by activated carbon.

< Compound was not detected at or above the indicated value.

J Detected concentration is less than the quantitation limit.

TVOCs Total volatile organic compounds

Detections are highlighted.

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Table 1. Vapor Treatment System Air Sampling Results
Routine Monitoring - March 2021

Compound (ug/m^3) / Sample ID: / Lab Sample ID: / Date Sampled:	VGAC-1 JD21807-1 3/16/2021	VGAC-3 JD21807-2 3/16/2021	KMNO4-5 JD21807-3 3/16/2021	Percent Removed
1,1,1-Trichloroethane	< 110	< 0.71	< 0.71	
1,1-Dichloroethane	**326 J**	< 0.19	< 0.19	
1,1-Dichloroethylene	**308 J**	< 0.27	< 0.27	
1,2,4-Trimethylbenzene	< 98	**5.4**	< 0.64	
1,2-Dibromoethane	< 85	< 0.55	< 0.55	
1,3,5-Trimethylbenzene	< 98	**3.5 J**	< 0.64	
1,4-Dioxane*	< 110	< 0.76	< 0.76	
2,2,4-Trimethylpentane	**306 J**	< 0.41	< 0.41	
2-Hexanone	< 90	< 0.61	< 0.61	
4-Ethyltoluene	< 88	< 0.59	< 0.59	
Acetone*	**7,600**	**24.0**	**19**	
Benzene	**222 J**	**1.2 J**	**0.77 J**	
Bromoform	< 230	< 1.6	< 1.6	
Carbon disulfide	< 44	< 0.29	< 0.29	
Carbon tetrachloride	**248 J**	< 0.59	< 0.59	
Chloroethane	< 77	< 0.50	**1.2 J**	
Chloroform	**370 J**	< 0.39	< 0.39	
Chloromethane*	< 19	**6.2**	**14**	
cis-1,2-Dichloroethylene	**29,800**	**63.0**	**27**	
Cyclohexane	< 45	< 0.30	< 0.30	
Dichlorodifluoromethane	< 49	< 0.33	< 0.33	
Ethanol	**810**	**148**	**164**	
Ethyl acetate	< 83	**4.7**	**4.7**	
Ethylbenzene	**2,930**	**28**	**7.8**	
Heptane	**586**	**1.8 J**	< 0.29	
Hexane	**2,190**	< 0.15	< 0.15	
Isopropyl alcohol*	**5,110**	**3.9**	**6.9**	
m,p-Xylene	**8,170**	**97.3**	**27**	
m-Dichlorobenzene	< 66	< 0.46	< 0.46	
Methyl ethyl ketone	**1,390**	**3.8**	**2.0 J**	
Methyl isobutyl ketone	< 90	< 0.57	< 0.57	
Methylene chloride*	**848**	< 0.20	< 0.20	
o-Dichlorobenzene	< 78	< 0.52	< 0.52	
o-Xylene	**2,550**	**35**	**9.1**	
Propylene*	**423 J**	**139**	**95.0**	
Styrene	< 47	< 0.32	< 0.32	
Tertiary butyl alcohol	< 25	< 0.17	< 0.17	
Tetrachloroethylene	**431**	< 0.81	< 0.81	
Tetrahydrofuran	< 88	< 0.59	< 0.59	
Toluene	**51,600**	**202**	**67.8**	
trans-1,2-Dichloroethylene	**948**	**1.6 J**	**0.87 J**	
Trichloroethylene	**43,200**	**117**	**46**	100%
Trichlorofluoromethane	< 96	< 0.62	< 0.62	
Vinyl acetate	< 74	< 0.49	< 0.49	
Vinyl chloride*	**2,230**	**155**	**111**	
Xylenes (total)	**10,700**	**132**	**36**	
TVOCs	**162,600**	**1,040**	**604**	
TVOCs less poor adsorbers*	**146,400**	**700**	**400**	

Footnotes:

ug/mg^3 micrograms per cubic meter

* Compound is poorly adsorbed by activated carbon.

< Compound was not detected at or above the indicated value.

J Detected concentration is less than the quantitation limit.

TVOCs Total volatile organic compounds

Detections are highlighted.

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Table 1. Vapor Treatment System Air Sampling Results
Routine Monitoring - March 2021

Compound (ug/m^3)	Sample ID: / Lab Sample ID: / Date Sampled:	VGAC-1 JD22585-1 3/30/2021	VGAC-3 JD22585-2 3/30/2021	KMNO4-5 JD25585-3 3/30/2021	Percent Removed
1,1,1-Trichloroethane		< 53	< 3.6	< 3.6	
1,1-Dichloroethane		**141** J	< 0.93	< 0.93	
1,1-Dichloroethylene		**116** J	< 1.3	< 1.3	
1,2,4-Trimethylbenzene		< 48	< 3.2	< 3.2	
1,2-Dibromoethane		< 41	< 2.8	< 2.8	
1,3,5-Trimethylbenzene		< 49	< 3.3	< 3.3	
1,4-Dioxane*		< 54	< 3.6	< 3.6	
2,2,4-Trimethylpentane		**251** J	< 2.1	< 2.1	
2-Hexanone		< 45	< 3.0	< 3.0	
4-Ethyltoluene		< 43	< 2.9	< 2.9	
Acetone*		**12,400**	**29.0**	**17**	
Benzene		**124** J	< 0.77	< 0.77	
Bromoform		< 110	< 7.8	< 7.8	
Carbon disulfide		**352**	< 1.5	< 1.5	
Carbon tetrachloride		< 43	< 3.0	< 3.0	
Chloroethane		< 37	**13**	< 2.6	
Chloroform		< 29	< 2.0	< 2.0	
Chloromethane*		< 9.3	**30.6**	**24.0**	
cis-1,2-Dichloroethylene		**12,900**	**9.1** J	**6.7** J	
Cyclohexane		< 22	< 1.5	< 1.5	
Dichlorodifluoromethane		< 24	< 1.6	< 1.6	
Ethanol		**492**	**12** J	**11** J	
Ethyl acetate		< 40	< 2.7	< 2.7	
Ethylbenzene		**808**	< 1.3	< 1.3	
Heptane		**717**	< 1.4	< 1.4	
Hexane		**1,290**	< 0.74	< 0.74	
Isopropyl alcohol*		**4,030**	**19**	**25.6**	
m,p-Xylene		**2,230**	< 3.0	**13** J	
m-Dichlorobenzene		< 34	< 2.3	< 2.3	
Methyl ethyl ketone		**2,700**	< 2.5	< 2.5	
Methyl isobutyl ketone		**170** J	< 3.0	< 3.0	
Methylene chloride*		< 15	< 1.0	< 1.0	
o-Dichlorobenzene		< 38	< 2.6	< 2.6	
o-Xylene		**756**	< 1.5	< 1.5	
Propylene*		**675**	**704**	**399**	
Styrene		< 24	< 1.6	< 1.6	
Tertiary butyl alcohol		< 12	< 0.85	< 0.85	
Tetrachloroethylene		**107**	< 4.2	< 4.2	
Tetrahydrofuran		< 44	< 2.9	< 2.9	
Toluene		**20,400**	< 1.1	**14** J	
trans-1,2-Dichloroethylene		**375**	< 0.59	< 0.59	
Trichloroethylene		**14,800**	< 2.0	**5.9**	100%
Trichlorofluoromethane		< 47	< 3.1	< 3.1	
Vinyl acetate		< 35	< 2.4	< 2.4	
Vinyl chloride*		**1,130**	**1,610**	**1,960**	
Xylenes (total)		**2,990**	< 1.5	**13** J	
TVOCs		**77,000**	**2,430**	**2,480**	
TVOCs less poor adsorbers*		**58,800**	**0**	**100**	

Footnotes:

ug/mg^3 micrograms per cubic meter

* Compound is poorly adsorbed by activated carbon.

< Compound was not detected at or above the indicated value.

J Detected concentration is less than the quantitation limit.

TVOCs Total volatile organic compounds

Detections are highlighted.

Table 2. Liquid Treatment System Sampling Results - March 2021

Analyte	Sample ID:	FRAC2-A4272-20210311	TANK1	TANK1	TANK2	TANK2
	Lab Sample ID:	JD21582-1 / 1A	JD22032-1	JD22032-1F (filtered)	JD22032-2	JD22032-2F (filtered)
	Date Sampled:	3/11/2021	3/18/2021	3/18/2021	3/18/2021	3/18/2021
Volatile Organic Compounds (ug/L):						
2-Butanone (MEK)		< 6.9	-	-	-	-
2-Hexanone		< 2.0	-	-	-	-
4-Methyl-2-pentanone (MIBK)		< 1.9	-	-	-	-
Acetone*		< 6.0	-	-	-	-
cis-1,2-Dichloroethene		< 0.51	-	-	-	-
Ethylbenzene		< 0.60	-	-	-	-
m,p-Xylene		< 0.78	-	-	-	-
Methyl Acetate		< 0.80	-	-	-	-
o-Xylene		< 0.59	-	-	-	-
Styrene		< 0.49	-	-	-	-
Toluene		< 0.53	-	-	-	-
Trichloroethene		< 0.53	-	-	-	-
Xylene (total)		< 0.59	-	-	-	-
TVOCs		0				
TVOCs less poor adsorbers*		0				
Semivolatile Organic Compounds (ug/L):						
1,1'-Biphenyl		< 0.22	-	-	-	-
1,4-Dioxane		< 0.67	-	-	-	-
2,4-Dimethylphenol		< 2.5	-	-	-	-
2-Methylnaphthalene		< 0.22	-	-	-	-
2-Methylphenol		< 0.91	-	-	-	-
3&4-Methylphenol		< 0.90	-	-	-	-
Acenaphthene		< 0.20	-	-	-	-
Acetophenone		< 0.21	-	-	-	-
Anthracene		< 0.22	-	-	-	-
Benzaldehyde		< 0.30	-	-	-	-
Carbazole		< 0.23	-	-	-	-
Dibenzofuran		< 0.23	-	-	-	-
Dimethyl phthalate		< 0.22	-	-	-	-
Fluoranthene		< 0.17	-	-	-	-
Fluorene		< 0.18	-	-	-	-
Naphthalene		< 0.24	-	-	-	-
Phenanthrene		< 0.18	-	-	-	-
Phenol		< 0.40	-	-	-	-
Pyrene		< 0.22	-	-	-	-
Semivolatile Organic Compounds (SIM) (ug/L):						
1,4-Dioxane		< 0.051	-	-	-	-
Polychlorinated Biphenyls (ug/L):						
Aroclor 1016		< 0.10	-	-	-	-
Aroclor 1221		< 0.22	-	-	-	-
Aroclor 1232		< 0.14	-	-	-	-
Aroclor 1242		< 0.12	-	-	-	-
Aroclor 1248		< 0.066	-	-	-	-
Aroclor 1254		< 0.22	-	-	-	-
Aroclor 1260		< 0.080	-	-	-	-
Aroclor 1262		< 0.10	-	-	-	-
Aroclor 1268		< 0.091	-	-	-	-
Metals (mg/L):						
Cadmium		< 3.0	-	-	-	-
Chromium		< 10	-	-	-	-
Iron		**3,000**	**550**	< 100	**269**	< 100
Manganese		**296**	-	-	-	-
Mercury		< 0.20	-	-	-	-
General Chemistry (mg/L):						
Nitrogen, Nitrate		**0.25**	-	-	-	-
Nitrogen, Nitrate + Nitrite		**0.25**	-	-	-	-
Nitrogen, Nitrite		< 0.010	-	-	-	-
Nitrogen, Total Kjeldahl		**2.2**	-	-	-	-

Footnotes:

ug/L	micrograms per liter
mg/L	milligrams per liter
*	Poorly adsorbed on activated carbon.
**	Generated by Method 6010D; all other metals results generated by Method 200.7.
<	Analyte was not detected at or above the indicated value.
J	Detected concentration is less than the laboratory quantitation limit.
J1	Low recovery reported for the matrix spike duplicate.
TVOCs	Total volatile organic compounds

Table 2. Liquid Treatment System Sampling Results - March 2021

Analyte	Sample ID:	LGAC-INF-20210323	LGAC-MID-20210323	FRAC3-A191-20210323	LGAC-INF-20210323	LGAC-MID-20210323	FRAC3-A191-20210323
	Lab Sample ID:	JD22168-1 / 1A	JD22168-2 / 2A	JD22168-3 / 3A	JD22335-1	JD22335-2	JD22335-3
	Date Sampled:	3/23/2021	3/23/2021	3/23/2021	3/23/2021	3/23/2021	3/23/2021
Volatile Organic Compounds (ug/L):							
2-Butanone (MEK)		**494**	< 6.9	< 6.9	-	-	-
2-Hexanone		**16.7**	< 2.0	< 2.0	-	-	-
4-Methyl-2-pentanone (MIBK)		**7.7**	< 1.9	< 1.9	-	-	-
Acetone*		**2,630**	**1,850**	**8.9** J	-	-	-
cis-1,2-Dichloroethene		**17.4**	< 0.51	< 0.51	-	-	-
Ethylbenzene		**1.9**	< 0.60	< 0.60	-	-	-
m,p-Xylene		**7.4**	< 0.78	< 0.78	-	-	-
Methyl Acetate		**1.2** J	< 0.80	< 0.80	-	-	-
o-Xylene		**5.0**	< 0.59	< 0.59	-	-	-
Styrene		**1.7**	< 0.49	< 0.49	-	-	-
Toluene		**20.9**	< 0.53	< 0.53	-	-	-
Trichloroethene		**4.7**	< 0.53	< 0.53	-	-	-
Xylene (total)		**12.4**	< 0.59	< 0.59	-	-	-
TVOCs		**3,209**	**1,850**	**8.9**			
TVOCs less poor adsorbers*		**579**	**0**	**0**			
Semivolatile Organic Compounds (ug/L):							
1,1'-Biphenyl		**2.4**	< 0.21	< 0.21	-	-	-
1,4-Dioxane		**6.4**	< 0.64	< 0.66	-	-	-
2,4-Dimethylphenol		**242**	< 2.4	< 2.4	-	-	-
2-Methylnaphthalene		**2.8**	< 0.20	< 0.21	-	-	-
2-Methylphenol		**112**	< 0.87	< 0.89	-	-	-
3&4-Methylphenol		**606**	< 0.86	< 0.88	-	-	-
Acenaphthene		**0.70** J	< 0.19	< 0.19	-	-	-
Acetophenone		**45.2**	< 0.20	< 0.21	-	-	-
Anthracene		**0.58** J	< 0.21	< 0.21	-	-	-
Benzaldehyde		**159**	< 0.28	< 0.29	-	-	-
Carbazole		**1.4**	< 0.22	< 0.23	-	-	-
Dibenzofuran		**1.0** J	< 0.21	< 0.22	-	-	-
Dimethyl phthalate		**15.7**	< 0.21	< 0.22	-	-	-
Fluoranthene		**1.1**	< 0.17	< 0.17	-	-	-
Fluorene		**1.3**	< 0.17	< 0.17	-	-	-
Naphthalene		**1.6**	< 0.23	< 0.23	-	-	-
Phenanthrene		**5.3**	< 0.17	< 0.18	-	-	-
Phenol		**198**	< 0.38	< 0.39	-	-	-
Pyrene		**0.82** J	< 0.21	< 0.22	-	-	-
Semivolatile Organic Compounds (SIM) (ug/L):							
1,4-Dioxane		**8.23**	**0.730**	< 0.050	-	-	-
Polychlorinated Biphenyls (ug/L):							
Aroclor 1016		< 0.13	< 0.13	< 0.13	-	-	-
Aroclor 1221		< 0.27	< 0.28	< 0.27	-	-	-
Aroclor 1232		< 0.17	< 0.17	< 0.17	-	-	-
Aroclor 1242		< 0.15	< 0.15	< 0.15	-	-	-
Aroclor 1248		< 0.081	< 0.084	< 0.081	-	-	-
Aroclor 1254		**6.8**	< 0.28	< 0.27	-	-	-
Aroclor 1260		< 0.098	< 0.10	< 0.098	-	-	-
Aroclor 1262		< 0.12	< 0.13	< 0.12	-	-	-
Aroclor 1268		< 0.11	< 0.12	< 0.11	-	-	-
Metals (mg/L):							
Cadmium		< 3.0	< 3.0	< 3.0	-	-	-
Chromium		< 10	< 10	< 10	-	-	-
Iron		**1,420**	**2,940**	**2,200**	**10,500**	**2,820**	**1,980**
Manganese		**208**	**194**	**195**	**104**	**202**	**191**
Mercury		< 0.20	< 0.20	< 0.20	-	-	-
General Chemistry (mg/L):							
Nitrogen, Nitrate		< 0.11	< 0.11	< 0.11	-	-	-
Nitrogen, Nitrate + Nitrite		< 0.10	< 0.10	< 0.10	-	-	-
Nitrogen, Nitrite		**0.014**	**0.014**	**0.012**	-	-	-
Nitrogen, Total Kjeldahl		**11.4**	**4.9**	**3.8**	-	-	-

Footnotes:

ug/L	micrograms per liter
mg/L	milligrams per liter
*	Poorly adsorbed on activated carl
**	Generated by Method 6010D; all
<	Analyte was not detected at or ab
J	Detected concentration is less tha
J1	Low recovery reported for the ma
TVOCs	Total volatile organic compounds

Footnotes:

ug/L	micrograms per liter
mg/L	milligrams per liter
*	Poorly adsorbed on activated carbon.
**	Generated by Method 6010D; all other metals results generated by Method 200.7.
<	Analyte was not detected at or above the indicated value.
J	Detected concentration is less than the laboratory quantitation limit.
J1	Low recovery reported for the matrix spike duplicate.
TVOCs	Total volatile organic compounds

Geosyntec consultants

Table 3: Ambient Air Laboratory Results (2021-03-02 through 2021-03-09)

Analyte	Target Screening Level (µg/m³)[1,3]	95% of Concentration Distribution NYSDOH Background Air (µg/m³)[2]	Ambient Air Concentration (µg/m³)				
			Sample Location				
			AMP-01	AMP-02	AMP-03	AMP-04*	AMP-03-DUP
Site-specific Compounds of Interest[1]							
1,1,1-Trichloroethane	520	0.7	< 0.35	< 0.44	< 0.36	< 0.16	< 0.35
1,1-Dichloroethane	45	< 0.25	< 0.26	< 0.32	< 0.27	< 0.12	< 0.26
1,1-Dichloroethene	8	<0.25	< 0.13	< 0.16	< 0.13	< 0.057	< 0.13
1,2-Dichloroethane	3	< 0.25	< 0.26	< 0.32	< 0.27	< 0.12	< 0.26
Benzene	8	5.8	< 0.52	< 0.64	< 0.53	**0.48**	< 0.52
Ethyl-benzene	29	1.9	< 0.28	< 0.35	< 0.29	< 0.12	< 0.28
m,p-Xylene	10	3.1	< 0.56	< 0.70	< 0.58	**0.34**	< 0.56
o-Xylene	10	2.3	< 0.28	< 0.35	< 0.29	**0.13**	< 0.28
Tetrachloroethene	30	1.6	< 0.44	< 0.54	< 0.45	< 0.20	< 0.44
Toluene	521	21	< 0.61	< 0.76	< 0.62	**0.63**	< 0.61
trans-1,2-Dichloroethene	82	NA2	< 1.3	< 1.6	< 1.3	< 0.57	< 1.3
Trichloroethene	2	0.5	< 0.35	< 0.43	< 0.36	< 0.16	< 0.35
Vinyl Chloride	8	< 0.25	< 0.082	< 0.10	< 0.085	< 0.037	< 0.083
Other Compounds[3]							
1,1,2,2-Tetrachloroethane	1.3	< 0.25	< 0.44	< 0.55	< 0.46	< 0.20	< 0.44
1,1,2-Trichloroethane	0.21	< 0.25	< 0.35	< 0.44	< 0.36	< 0.16	< 0.35
1,2-Dibromoethane (EDB)	0.12	< 0.25	< 0.50	< 0.62	< 0.51	< 0.22	< 0.50
1,4-Dichlorobenzene	7	0.8	< 0.39	< 0.48	< 0.40	< 0.17	< 0.39
Carbon Tetrachloride	12	1	**0.44**	**0.54**	**0.75**	**0.46**	**0.46**
Chloroethane	417	0.4	< 0.43	< 0.53	< 0.44	< 0.19	< 0.43
Chloroform	3	0.5	< 0.32	< 0.39	< 0.32	< 0.14	< 0.32
Chloromethane	310	4.6	< 3.3	< 4.2	< 3.4	< 1.5	< 3.3
cis-1,2-Dichloroethene	NA1	< 0.25	< 0.26	< 0.32	< 0.26	< 0.11	< 0.26
Freon 114	NA1	1.3	< 0.45	< 0.56	< 0.46	< 0.20	< 0.45
Freon 12	100	11	**2.2**	**2.6**	**2.2**	**2.3**	**2.2**
Methyl tert-butyl ether	260	NA2	< 1.2	< 1.4	< 1.2	< 0.52	< 1.2

Notes: µg/m³ - micrograms per cubic meter

< - indicates not detected at or above the indicated value

Bold - indicates detections

J - indicates sample result is estimated

R - rejected after data validation

NA1 - no criteria given in the EPA RSL Calculator

NA2 - NYSDOH did not include this compound in the guidance document[2]

* - Sample closed after 3 days due to low vacuum

[1] Target Screening Levels for site-specific compounds of interest provided in Bethpage Ambient Air Monitoring Plan and are based on a one-year exposure duration (B&B Engineers & Geologists of New York, P.C., May 2020)

[2] NYSDOH Outdoor Air Background Values from Appendix C (Table C1) of Guidance for Evaluating Soil Vapor Intrusion in the State of New York (2006)

[3] Target Screening Levels for other compounds calculated using the EPA RSL calculator with the same inputs as described in the Bethpage Ambient Air Monitoring Plan

Table 3: Ambient Air Laboratory Results (2021-03-09 through 2021-03-16)

Analyte	Target Screening Level (µg/m³)[1,3]	95% of Concentration Distribution NYSDOH Background Air (µg/m³)[2]	Ambient Air Concentration (µg/m³)				
			Sample Location				
			AMP-01	AMP-02	AMP-03	AMP-04	AMP-04-DUP
Site-specific Compounds of Interest[1]							
1,1,1-Trichloroethane	520	0.7	< 0.33	< 0.35	< 0.12	< 0.34	< 0.35
1,1-Dichloroethane	45	< 0.25	< 0.25	< 0.26	< 0.086	< 0.25	< 0.26
1,1-Dichloroethene	8	<0.25	< 0.12	< 0.13	< 0.042	< 0.12	< 0.13
1,2-Dichloroethane	3	< 0.25	< 0.25	< 0.26	< 0.086	< 0.25	< 0.26
Benzene	8	5.8	**0.49**	< 0.51	**0.33**	< 0.5	< 0.51
Ethyl-benzene	29	1.9	< 0.26	< 0.28	< 0.092	< 0.27	< 0.28
m,p-Xylene	10	3.1	< 0.53	< 0.55	< 0.18	< 0.54	< 0.55
o-Xylene	10	2.3	< 0.26	< 0.28	< 0.092	< 0.27	< 0.28
Tetrachloroethene	30	1.6	< 0.42	< 0.43	< 0.14	< 0.42	< 0.43
Toluene	521	21	**0.86**	**0.75**	**0.4**	**3.7 J**	**0.6 J**
trans-1,2-Dichloroethene	82	NA2	< 1.2	< 1.3	< 0.42	< 1.2	< 1.3
Trichloroethene	2	0.5	< 0.33	< 0.34	< 0.11	< 0.34	< 0.34
Vinyl Chloride	8	< 0.25	< 0.078	< 0.082	< 0.027	< 0.08	< 0.082
Other Compounds[3]							
1,1,2,2-Tetrachloroethane	1.3	< 0.25	< 0.42	< 0.44	< 0.14	< 0.43	< 0.44
1,1,2-Trichloroethane	0.21	< 0.25	< 0.33	< 0.35	< 0.12	< 0.34	< 0.35
1,2-Dibromoethane (EDB)	0.12	< 0.25	< 0.47	< 0.49	< 0.16	< 0.48	< 0.49
1,4-Dichlorobenzene	7	0.8	< 0.37	< 0.38	< 0.13	< 0.38	< 0.38
Carbon Tetrachloride	12	1	**0.5**	**0.49**	**0.54**	**0.51**	**0.53**
Chloroethane	417	0.4	< 0.4	< 0.42	< 0.14	< 0.41	< 0.42
Chloroform	3	0.5	< 0.3	< 0.31	< 0.1	< 0.3	< 0.31
Chloromethane	310	4.6	< 3.2	< 3.3	< 1.1	< 3.2	< 3.3
cis-1,2-Dichloroethene	NA1	< 0.25	< 0.24	< 0.25	< 0.084	< 0.25	< 0.25
Freon 114	NA1	1.3	< 0.43	< 0.45	< 0.15	< 0.44	< 0.45
Freon 12	100	11	**2.5**	**2.4**	**2.5**	**2.4**	**2.5**
Methyl tert-butyl ether	260	NA2	< 1.1	< 1.2	< 0.38	< 1.1	< 1.2

Notes:

µg/m³ - micrograms per cubic meter

Bold - indicates detections

R - rejected after data validation

< - indicates not detected at or above the indicated value

NA1 - no criteria given in the EPA RSL Calculator

J - indicates sample result is estimated

NA2 - NYSDOH did not include this compound in the guidance document[2]

[1] Target Screening Levels for site-specific compounds of interest provided in Bethpage Ambient Air Monitoring Plan and are based on a one-year exposure duration (B&B Engineers & Geologists of New York, P.C., May 2020)

[2] NYSDOH Outdoor Air Background Values from Appendix C (Table C1) of Guidance for Evaluating Soil Vapor Intrusion in the State of New York (2006)

[3] Target Screening Levels for other compounds calculated using the EPA RSL calculator with the same inputs as described in the Bethpage Ambient Air Monitoring Plan

Geosyntec consultants

Table 3: Ambient Air Laboratory Results (2021-03-16 through 2021-03-23)

Analyte	Target Screening Level (µg/m³)[1,3]	95% of Concentration Distribution NYSDOH Background Air (µg/m³)[2]	Ambient Air Concentration (µg/m³)				
			Sample Location				
			AMP-01	AMP-02	AMP-03	AMP-04	NS
Site-specific Compounds of Interest[1]							
1,1,1-Trichloroethane	520	0.7	< 0.37	< 0.38	< 0.36	< 0.37	--
1,1-Dichloroethane	45	< 0.25	< 0.28	< 0.28	< 0.27	< 0.28	--
1,1-Dichloroethene	8	<0.25	< 0.14	< 0.14	< 0.13	< 0.14	--
1,2-Dichloroethane	3	< 0.25	< 0.28	< 0.28	< 0.27	< 0.28	--
Benzene	8	5.8	**0.64**	**0.60**	**0.63**	**0.63**	--
Ethyl-benzene	29	1.9	< 0.30	< 0.30	< 0.29	< 0.30	--
m,p-Xylene	10	3.1	**0.61**	< 0.60	< 0.57	**0.86**	--
o-Xylene	10	2.3	< 0.30	< 0.30	< 0.29	**0.31**	--
Tetrachloroethene	30	1.6	< 0.46	< 0.47	< 0.45	< 0.46	--
Toluene	521	21	**1.2**	**0.80**	**0.86**	**1.5**	--
trans-1,2-Dichloroethene	82	NA2	< 1.4	< 1.4	< 1.3	< 1.4	--
Trichloroethene	2	0.5	< 0.37	< 0.37	< 0.36	< 0.37	--
Vinyl Chloride	8	< 0.25	< 0.087	< 0.088	< 0.085	< 0.087	--
Other Compounds[3]							
1,1,2,2-Tetrachloroethane	1.3	< 0.25	< 0.47	< 0.47	< 0.45	< 0.47	--
1,1,2-Trichloroethane	0.21	< 0.25	< 0.37	< 0.38	< 0.36	< 0.37	--
1,2-Dibromoethane (EDB)	0.12	< 0.25	< 0.52	< 0.53	< 0.51	< 0.52	--
1,4-Dichlorobenzene	7	0.8	< 0.41	< 0.41	< 0.40	**0.60**	--
Carbon Tetrachloride	12	1	**0.52**	**0.49**	**0.51**	**0.48**	--
Chloroethane	417	0.4	< 0.45	< 0.45	< 0.44	< 0.45	--
Chloroform	3	0.5	< 0.33	< 0.34	< 0.32	< 0.33	--
Chloromethane	310	4.6	< 3.5	< 3.6	< 3.4	< 3.5	--
cis-1,2-Dichloroethene	NA1	< 0.25	< 0.27	< 0.27	< 0.26	< 0.27	--
Freon 114	NA1	1.3	< 0.48	< 0.48	< 0.46	< 0.48	--
Freon 12	100	11	**2.5**	**2.6**	**2.5**	**2.6**	--
Methyl tert-butyl ether	260	NA2	< 1.2	< 1.2	< 1.2	< 1.2	--

Notes:

µg/m³ - micrograms per cubic meter

Bold - indicates detections

< - indicates not detected at or above the indicated value

J - indicates sample result is estimated

R - rejected after data validation

NA1 - no criteria given in the EPA RSL Calculator

NA2 - NYSDOH did not include this compound in the guidance document[2]

NS - No duplicate collected due to shipment error from laboratory

[1] Target Screening Levels for site-specific compounds of interest provided in Bethpage Ambient Air Monitoring Plan and are based on a one-year exposure duration (B&B Engineers & Geologists of New York, P.C., May 2020)

[2] NYSDOH Outdoor Air Background Values from Appendix C (Table C1) of Guidance for Evaluating Soil Vapor Intrusion in the State of New York (2006)

[3] Target Screening Levels for other compounds calculated using the EPA RSL calculator with the same inputs as described in the Bethpage Ambient Air Monitoring Plan

Table 3: Ambient Air Laboratory Results (2021-03-23 through 2021-03-30)

Analyte	Target Screening Level (µg/m³)[1,3]	95% of Concentration Distribution NYSDOH Background Air (µg/m³)[2]	Ambient Air Concentration (µg/m³)				
			Sample Location				
			AMP-01	AMP-02	AMP-03	AMP-04	AMP-01-DUP
Site-specific Compounds of Interest[1]							
1,1,1-Trichloroethane	520	0.7	< 0.32	< 0.32	< 0.34	< 0.34	< 0.34
1,1-Dichloroethane	45	< 0.25	< 0.24	< 0.24	< 0.25	< 0.25	< 0.25
1,1-Dichloroethene	8	<0.25	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12
1,2-Dichloroethane	3	< 0.25	< 0.24	< 0.24	< 0.25	< 0.25	< 0.25
Benzene	8	5.8	< 0.47	< 0.47	< 0.50	< 0.50	**0.64**
Ethyl-benzene	29	1.9	< 0.26	< 0.26	< 0.27	< 0.27	< 0.27
m,p-Xylene	10	3.1	< 0.51	< 0.51	< 0.54	< 0.54	< 0.54
o-Xylene	10	2.3	< 0.26	< 0.26	< 0.27	< 0.27	< 0.27
Tetrachloroethene	30	1.6	< 0.40	< 0.40	< 0.42	< 0.42	< 0.42
Toluene	521	21	**0.79**	**1.8**	**0.75**	**1.2**	**1.2**
trans-1,2-Dichloroethene	82	NA2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Trichloroethene	2	0.5	< 0.32	< 0.32	< 0.33	< 0.33	< 0.33
Vinyl Chloride	8	< 0.25	< 0.076	< 0.076	< 0.079	< 0.079	< 0.079
Other Compounds[3]							
1,1,2,2-Tetrachloroethane	1.3	< 0.25	< 0.41	< 0.41	< 0.42	< 0.42	< 0.42
1,1,2-Trichloroethane	0.21	< 0.25	< 0.32	< 0.32	< 0.34	< 0.34	< 0.34
1,2-Dibromoethane (EDB)	0.12	< 0.25	< 0.45	< 0.45	< 0.48	< 0.48	< 0.48
1,4-Dichlorobenzene	7	0.8	< 0.36	< 0.36	< 0.37	< 0.37	< 0.37
Carbon Tetrachloride	12	1	**0.44**	**0.43**	**0.45**	**0.44**	**0.48**
Chloroethane	417	0.4	< 0.39	< 0.39	< 0.41	< 0.41	< 0.41
Chloroform	3	0.5	< 0.29	< 0.29	< 0.30	< 0.30	< 0.30
Chloromethane	310	4.6	< 3.0	< 3.0	< 3.2	< 3.2	< 3.2
cis-1,2-Dichloroethene	NA1	< 0.25	< 0.23	< 0.23	< 0.24	< 0.24	< 0.24
Freon 114	NA1	1.3	< 0.41	< 0.41	< 0.43	< 0.43	< 0.43
Freon 12	100	11	**2.5**	**2.4**	**2.4**	**2.5**	**2.8**
Methyl tert-butyl ether	260	NA2	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1

Notes:

µg/m³ - micrograms per cubic meter

Bold - indicates detections

R - rejected after data validation

< - indicates not detected at or above the indicated value

NA1 - no criteria given in the EPA RSL Calculator

J - indicates sample result is estimated

NA2 - NYSDOH did not include this compound in the guidance document[2]

[1] Target Screening Levels for site-specific compounds of interest provided in Bethpage Ambient Air Monitoring Plan and are based on a one-year exposure duration (B&B Engineers & Geologists of New York, P.C., May 2020)

[2] NYSDOH Outdoor Air Background Values from Appendix C (Table C1) of Guidance for Evaluating Soil Vapor Intrusion in the State of New York (2006)

[3] Target Screening Levels for other compounds calculated using the EPA RSL calculator with the same inputs as described in the Bethpage Ambient Air Monitoring Plan