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

TIMOTHY W. GILLEN, PE, PP, CME
BRUCE M. KOCH, PE, PP, CME
LOUIS J. PLOSKONKA, PE, CME
TREVOR J. TAYLOR, PE, PP, CME
BEHRAM TURAN, PE, LSRP
LAURA J. NEUMANN, PE, PP
DOUGLAS ROHMEYER, PE, CFM, CME
ROBERT J. RUSSO, PE, PP, CME

August 22, 2017

Ms. Victoria Goldman
NJ Department of Environmental Protection
Bureau of Landfill and Hazardous Waste Permitting
Solid and Hazardous Waste Management Program
P.O. Box 414
401 East State Street
Trenton, New Jersey - 08625-04141

Ref: Quarterly Groundwater Monitoring Report – May 2017 Sampling Event
Overpeck County Park – Areas I, II, IIIA, IIIB and IV
PI# 131880

Dear Ms. Goldman:

On behalf of the County of Bergen, CME Associates (CME) has performed the second (2nd) quarterly groundwater sampling event for 2017 at the Overpeck County Park landfill. The sampling was completed in accordance with the Modified Closure and Post Closure Plan Approval – Areas I and IV, dated October 30, 2015, and Overpeck County Park's Landfill Operation and Maintenance Manual, dated June 2016. The referenced properties encompass an approximate extent of about 805 acres, contiguous over the Borough of Leonia, Borough of Palisades Park, Township of Teaneck and the Ridge Field Park. A map depicting the location of the Overpeck County Park is included as **Figure 1** – Site Location Map.

CME performed the groundwater sampling activities between May 1 and May 12, 2017, which included a total of twenty-five (25) monitoring wells located in Area I, Area II, Area III and Area IV. In addition, a pumping station/wet well (PS-1) in Area IIIA was sampled. A site plan showing the monitoring wells and the pump station is included as **Figure 2** – Site Plan.

Prior to the sampling activities, CME located all the wells, assessed their conditions and re-developed all the wells in Area I (MW-1 through MW-5), Area II (MW-1 through MW-6), Area IIIB (MW-18 and MW-19) and Area IV (PMW-21, PMW-22, PMW-23, PMW-24, PMW-25, PMW-27, and PMW-30).

Groundwater Sampling Activities

CME utilized a peristaltic pump to purge the shallow wells and a 2-inch diameter submersible pump to purge the deep wells. Each monitoring well was purged approximately three (3) to five (5) well volumes using dedicated disposable tubing. The purged water was directed to a portable carbon filter prior to discharge near the wellhead. The submersible pumps were decontaminated before each use in accordance with the NJDEP Field Sampling Procedures Manual, dated August 2005 (revised April 2011) (FSPM). Groundwater samples were collected with dedicated disposable bailers. Samples were placed directly into laboratory provided bottles. The sample bottles were kept in coolers with ice packs and submitted to a NJDEP certified lab (TestAmerica, NJDEP Lab. # 12028) following proper chain-of-custody protocols. A copy of the field sampling records is included in **Appendix 1**. A summary of the samples collected and related analytical tests are provided in **Table 1** – Sampling Summary Table. All groundwater sample results were compared to the current NJDEP Groundwater Quality Standards (GWQS) for Class II-A Aquifers (N.J.A.C. 7:9C). Samples collected from Area I through Area IV are presented on **Table 2** through **Table 5**, respectively. Laboratory analytical reports are included in **Appendix 2**.

Area I Wells

As shown in **Table 1** – Sampling Summary Table, samples from the six (6) monitoring wells located in this area were analyzed for Target Compound List plus 30 (TCL+30), Target Analyte List Metals (TAL Metals), Hexavalent Chromium (Cr^{+6}), Extractable Petroleum Hydrocarbons (EPH) and pH. A summary of the laboratory analytical results associated with samples collected from Area I are included in **Table 2** – Groundwater Analytical Results Summary – May 2017 – Area I.

The analytical results indicated the following:

- Aluminum was detected above the NJDEP GWQS of 200 µg/L in MW-2, MW-4, and MW-6, at concentrations of 667 µg/L, 895 µg/L, and 569 µg/L, respectively.
- Arsenic was detected above the NJDEP GWQS of 3 µg/L in MW-1 and MW-6, at concentrations of 5.5 µg/L and 3.7 µg/L, respectively.

- Iron was detected above the NJDEP GWQS of 300 µg/L in MW-1, MW-2, MW-4 and MW-6, at concentrations of 8,350 µg/L, 866 µg/L, 1,070 µg/L and 775 µg/L, respectively.
- Manganese was detected above the NJDEP GWQS of 50 µg/L in MW-1, and MW-2, at concentrations of 4,520 µg/L, and 144 µg/L, respectively.
- Sodium was detected above the NJDEP GWQS of 50,000 µg/L in MW-1 at a concentration of 82,400 µg/L.

Area II Wells

Area II sampling included six shallow wells (MW-1 through MW-6). Groundwater samples were collected from these wells and analyzed for Target Compound List-Volatile Organic Compounds plus 15 including Selected Ion Monitoring (TCL VOA+15+SIM), Target Analyte List Metals (TAL Metals), Ammonia, Total Dissolved Solids (TDS), Nitrates, Nitrites, Total Kieldahl Nitrogen (TKN), TAL/TCL+30, Cr+6, EPH, and pH analyses. A summary of the laboratory analytical results associated with samples collected from Area II are included in **Table 3** – Groundwater Analytical Results Summary – May 2017 – Area II.

The analytical results indicated the following:

- Ammonia (as N) (mg/l) was detected above the NJDEP GWQS of 3.0 mg/L in MW-3, at a concentration of 7.1 mg/L.
- Total Dissolved Solids (mg/l) was detected above the NJDEP GWQS of 500 mg/L in wells MW-1, MW-2, MW-3, MW-5 and MW-6, at concentrations of 724 mg/L, 2,510 mg/L, 584 mg/L, 708 mg/L and 884 mg/L, respectively.
- 1,4-Dioxane was detected above the NJDEP GWQS of 0.4 µg/L in MW-3, at a concentration of 0.92 µg/L.
- Arsenic was detected above the NJDEP GWQS of 3 µg/L in MW-6, at a concentration of 4.9 µg/L.

- Iron was detected above the NJDEP GWQS of 300 µg/L in MW-1, MW-2, MW-3, MW-4, MW-5 and MW-6, at concentrations of 63,800 µg/L, 862 µg/L, 56,900 µg/L, 17,900 µg/L, 9,970 µg/L and 8,030 µg/L, respectively.
- Lead was detected above the NJDEP GWQS of 5 µg/L in MW-1, MW-3 and MW-4, at concentrations of 11.3 µg/L, 7.3 µg/L, and 8.3 µg/L, respectively.
- Manganese was detected above the NJDEP GWQS of 50 µg/L in MW-1, MW-2, MW-3, MW-4, MW-5 and MW-6, at concentrations of 650 µg/L, 670 µg/L, 748 µg/L, 431 µg/L, 3,180 µg/L and 2,460 µg/L, respectively.
- Sodium was detected above the NJDEP GWQS of 50,000 µg/L in wells MW-2, MW-4, and MW-6, at concentrations of 344,000 µg/L, 58,500 µg/L and 113,000 µg/L, respectively.

Area III Wells

Area III consisted of two sections (3A and 3B). Area IIIA included the deep wells MW-11D, MW-12D, MW-14D, MW-17D, and wet well, PS-1, associated with Pump Station #1. Area IIIB contained two shallow wells (MW-18 and MW-19). A third shallow well in Area IIIB (MW-20) was found damaged and could not be sampled. Groundwater samples from all the Area IIIA and Area IIIB wells were analyzed for TCL VOA+15+SIM, TAL Metals, Ammonia, TKN, TDS, Nitrates, Nitrites. A summary of the laboratory analytical results associated with samples collected from Area III are included in **Table 4** – Groundwater Analytical Results Summary – May 2017 – Area III.

The analytical results indicated the following:

Deep Monitoring Wells

- Total Dissolved Solids were detected above the NJDEP GWQS of 500 mg/L in well MW-12D, at a concentration of 864 mg/L.
- Aluminum was detected above the NJDEP GWQS of 200 µg/L in MW-12D, MW-14D, and MW-17D, at concentrations of 541 µg/L, 996 µg/L, and 9,410 µg/L, respectively.

- Arsenic was detected above the NJDEP GWQS of 3 µg/L in MW-11D, MW-12D, and MW-17D, at a concentration of 4.4 µg/L, 3.3 µg/L, and 6.1 µg/L, respectively.
- Iron was detected above the NJDEP GWQS of 300 µg/L in MW-12D, MW-14D, and MW-17D, at concentrations of 1,100 µg/L, 1,810 µg/L, and 12,600 µg/L, respectively.
- Lead was detected above the NJDEP GWQS of 5 µg/L in MW-14D, and MW-17D, at concentrations of 5.5 µg/L, and 8.5 µg/L, respectively
- Manganese was detected above the NJDEP GWQS of 50 µg/L in MW-12D, MW-14D, and MW-17D, at concentrations of 285 µg/L, 138 µg/L, and 509 µg/L, respectively.
- Sodium was detected above the NJDEP GWQS of 50,000 µg/L in well MW-12D, at a concentration of 53,300 µg/L.

Shallow Monitoring Wells (including Pump Station #1)

- Ammonia was detected above the NJDEP GWQS of 3 mg/L, in PS-1, MW-18, and MW-19, at concentrations of 32.7 mg/L, 105 mg/L, and 22 mg/L, respectively.
- Total Dissolved Solids were detected above the NJDEP GWQS of 500 mg/L, in PS-1, MW-18, and MW-19, at concentrations of 3,380 mg/L, 1,090 mg/L, and 1,480 mg/L, respectively.
- Benzene was detected above the NJDEP GWQS of 1 µg/L in PS-1, at a concentration of 3.2 µg/L.
- 1,4-Dioxane was detected above the NJDEP GWQS of 0.4 µg/L, in PS-1, MW-18, and MW-19, at concentrations of 16 µg/L, 2.5 µg/L, and 0.45 µg/L, respectively.
- Aluminum was detected above the NJDEP GWQS of 200 µg/L in PS-1, at a concentration of 417 µg/L.
- Arsenic was detected above the NJDEP GWQS of 3 µg/L in MW-19, at a concentration of 3.9 µg/L.
- Iron was detected above the NJDEP GWQS of 300 µg/L in PS-1, MW-18, and MW-19, at concentrations of 26,000 µg/L, 37,200 µg/L, and 41,900 µg/L, respectively.

- Lead was detected above the NJDEP GWQS of 5 µg/L in MW-19, at a concentration of 9.1 µg/L.
- Manganese was detected above the NJDEP GWQS of 50 µg/L in PS-1, MW-18, and MW-19, at concentrations of 1,140 µg/L, 1,070 µg/L, and 1,120 µg/L, respectively.
- Sodium was detected above the NJDEP GWQS of 50,000 µg/L in PS-1, MW-18, and MW-19, at concentrations of 70,000 µg/L, 80,600 µg/L and 50,800 µg/L, respectively.

Area IV Wells

Area IV was listed to have nine (9) shallow wells (PMW-21, PMW-22, PMW-23, PMW-24, PMW-25, PMW-26, PMW-27, PMW-29 and PMW-30). However, after an extensive site search utilizing all available information and known GPS locations, two (2) of the wells (PMW-26 and PMW-29) could not be located. The groundwater samples from the remaining seven (7) wells were analyzed for TAL/TCL+30, EPH, Cr^{+6}, and pH. A summary of the laboratory analytical results associated with samples collected from Area IV are included in **Table 5** – Groundwater Analytical Results Summary – May 2017 – Area IV.

The analytical results indicated the following:

- Benzene was detected above the NJDEP GWQS of 1 µg/L in PMW-27, at a concentration of 4.7 µg/L.
- Chlorobenzene was detected above the NJDEP GWQS of 50 µg/L in PMW-27, at a concentration of 52 µg/L.
- Aluminum was detected above the NJDEP GWQS of 200 µg/L in PMW-24, at a concentration of 227 µg/L.
- Arsenic was detected above the NJDEP GWQS of 3 µg/L in PMW-22, PMW-24, and PMW-25, at concentrations of 3.2 µg/L, 5.3 µg/L and 10.7 µg/L, respectively.
- Iron was detected above the NJDEP GWQS of 300 µg/L in PMW-21, PMW-23, PMW-24, PMW-25, PMW-27, and PMW-30, at concentrations of 11,000 µg/L, 335 µg/L, 4,780 µg/L, 8,700 µg/L, 18,500 µg/L, and 17,500µg/L, respectively.

- Lead was detected above the NJDEP GWQS of 5 µg/L in PMW-30, at a concentration of 6.8 µg/L.
- Manganese was detected above the NJDEP GWQS of 50 µg/L in PMW-21, PMW-22, PMW-23, PMW-24, PMW-25, PMW-27, and PMW-30, at concentrations of 681 µg/L, 169 µg/L, 218 µg/L, 651 µg/L, 147 µg/L, 65.9 µg/L, and 1,350 µg/L, respectively.
- Sodium was detected above the NJDEP GWQS of 50,000 µg/L in PMW-22, PMW-24, PMW-25, and PMW-27, at concentrations of 79,700 µg/L, 80,400 µg/L, 251,000 µg/L, and 93,900 µg/L, respectively.

The New Jersey Pollutant Discharge Elimination System Exceedance Report for Sanitary Landfills is included in **Appendix 3**.

Conclusions

The second 2017 quarterly groundwater sampling event showed ground water from the deeper zones is only impacted with metals and TDS at concentrations exceeding the applicable NJDEP GWQS. Shallow ground water is impacted with VOs, metals, ammonia, and TDS exceeding the applicable NJDEP GWQS.

Should you have any questions in this regard, please do not hesitate to contact us at (732) 951-2101.

Very truly yours,
CME Associates

Behram Turan, P.E., LSRP
Principal

TABLE 1: SAMPLING SUMMARY TABLE
Overpeck Park Landfill
Teaneck, NJ 07666
NJPDES Permit # NJG1086422, PI ID: 545650

Sample ID	Sampling Date	Media	MW Diameter (inch)	Sampling Depth (ft)*	Analysis	Sampling Method
Area I						
MW1	5/8/2017	Groundwater	4	22 (4.27)	TCL+30, TAL Metals, Cr^{+6}, EPH, pH.	Disposable Bailer
MW2	5/8/2017	Groundwater	2	23.2 (5.02)	TCL+30, TAL Metals, Cr^{+6}, EPH, pH.	Disposable Bailer
MW3	5/8/2017	Groundwater	4	22.4 (1.86)	TCL+30, TAL Metals, Cr^{+6}, EPH, pH.	Disposable Bailer
MW4	5/8/2017	Groundwater	4	21.35 (0.88)	TCL+30, TAL Metals, Cr^{+6}, EPH, pH.	Disposable Bailer
MW5	5/8/2017	Groundwater	4	21.1 (3.4)	TCL+30, TAL Metals, Cr^{+6}, EPH, pH.	Disposable Bailer
MW6	5/12/2017	Groundwater	4	19.37 (2.95)	TCL+30, TAL Metals, Cr^{+6}, EPH, pH.	Disposable Bailer
Area II						
MW-1	5/4 & 5/25/2017	Groundwater	4	16 (3.9)	TCL+30, TAL Metals, 1,4-Dioxane, Cr^{+6}, EPH, pH, Ammonia, TKN, TDS, Nitrates, Nitrites	Disposable Bailer
MW-2	5/4 & 5/25/2017	Groundwater	4	15.46 (4.15)	TCL+30, TAL Metals, 1,4-Dioxane, Cr^{+6}, EPH, pH, Ammonia, TKN, TDS, Nitrates, Nitrites	Disposable Bailer
MW-3	5/2 & 5/4/2017	Groundwater	4	11.6 (7.53)	TCL+30**, TAL Metals w/Hg, Cr+6, EPH, pH, Ammonia, TKN, TDS, Nitrates, Nitrites	Disposable Bailer
MW-4	5/1 & 5/4/2017	Groundwater	4	7.53 (4.55)	TCL+30**, TAL Metals w/Hg, Cr+6, EPH, pH, Ammonia, TKN, TDS, Nitrates, Nitrites	Disposable Bailer
MW-5	5/1 & 5/4/2017	Groundwater	4	15.2 (4.35)	TCL+30**, TAL Metals w/Hg, Cr+6, EPH, pH, Ammonia, TKN, TDS, Nitrates, Nitrites	Disposable Bailer
MW-6	5/1 & 5/4/2017	Groundwater	4	21.1 (7.15)	TCL+30**, TAL Metals w/Hg, Cr+6, EPH, pH, Ammonia, TKN, TDS, Nitrates, Nitrites	Disposable Bailer
Area IIIA						
MW-11D	5/9/2017	Groundwater	4	105 (5.3)	TCL VO+10+SIM, TAL Metals w/Hg, Ammonia, TKN, TDS, Nitrates, Nitrites	Disposable Bailer
MW-12D	5/9/2017	Groundwater	4	122 (11.08)	TCL VO+10+SIM, TAL Metals w/Hg, Ammonia, TKN, TDS, Nitrates, Nitrites	Disposable Bailer
MW-14D	5/9/2017	Groundwater	4	54.65 (15.1)	TCL VO+10+SIM, TAL Metals w/Hg, Ammonia, TKN, TDS, Nitrates, Nitrites	Disposable Bailer
MW-17D	5/9/2017	Groundwater	4	103 (3.47)	TCL VO+10+SIM, TAL Metals w/Hg, Ammonia, TKN, TDS, Nitrates, Nitrites	Disposable Bailer

TABLE 1: SAMPLING SUMMARY TABLE
Overpeck Park Landfill
Teaneck, NJ 07666
NJPDES Permit # NJG1086422, PI ID: 545650

Sample ID	Sampling Date	Media	MW Diameter (inch)	Sampling Depth (ft)*	Analysis	Sampling Method
Area IIIB (Aerodrome)						
PS-1	5/9/2017	Groundwater	36"	____	TCL VO+10+SIM, TAL Metals w/Hg, Ammonia, TKN, TDS, Nitrates, Nitrites	Disposable Bailer
(MW- 18)	5/2/2017	Groundwater	4	22.6 (7.85)	TCL VO+10+SIM, TAL Metals w/Hg, Ammonia, TKN, TDS, Nitrates, Nitrites	Disposable Bailer
(MW-19)	5/2/2017	Groundwater	4	21 (11)	TCL VO+10+SIM, TAL Metals w/Hg, Ammonia, TKN, TDS, Nitrates, Nitrites	Disposable Bailer
Area IV						
PMW-21	5/3/2017	Groundwater	4	18.6 (8.6)	TCL+30, TAL Metals, Cr^{+6}, EPH, pH.	Disposable Bailer
PMW-22	5/5/2017	Groundwater	4	24 (4.1)	TCL+30, TAL Metals, Cr^{+6}, EPH, pH.	Disposable Bailer
PMW-23	5/5/2017	Groundwater	4	24.5 (5.95)	TCL+30, TAL Metals, Cr^{+6}, EPH, pH.	Disposable Bailer
PMW-24	5/5/2017	Groundwater	4	21.5 (5.2)	TCL+30, TAL Metals, Cr^{+6}, EPH, pH.	Disposable Bailer
PMW-25	5/3/2017	Groundwater	4	26.15 (8.4)	TCL+30, TAL Metals, Cr^{+6}, EPH, pH.	Disposable Bailer
PMW-27	5/4/2017	Groundwater	4	23.08 (9.24)	TCL+30, TAL Metals, Cr^{+6}, EPH, pH.	Disposable Bailer
PMW-30	5/3/2017	Groundwater	4	21.1 (7.1)	TCL+30, TAL Metals, Cr^{+6}, EPH, pH.	Disposable Bailer

TKN - Total Kieldahl NItrogen

SIM - Selected Ion Monitoring

TDS - Total Dissolved Solids

Cr+6 =Hexavalent Chromiun

*Depth to water measurement in parantheses

**Volatile organic samples were also analyzed using SIM

TABLE 2: GROUNDWATER ANALYTICAL RESULTS SUMMARY - MAY 2017 - AREA I

Overpeck Park Landfill
Teaneck, NJ 07666
NJDES Permit # NJG1086422, PI ID: 545650

	Client ID	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
	Lab Sample ID	460-133022-1	460-133022-2	460-133022-3	460-133022-4	460-133022-5	460-133379-1
	Sampling Date	5/8/2017	5/8/2017	5/8/2017	5/8/2017	5/8/2017	5/12/2017
	Matrix	Water	Water	Water	Water	Water	Water
	Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
	GWQS	Result	Result	Result	Result	Result	Result
WETCHEM							
Chromium (hexavalent) (ug/l)	NA	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7
Cyanide, Total (mg/l)	0.1	0.0021	<0.002	<0.002	<0.002	<0.002	<0.002
pH (su)	NA	7.5	8.0	8.2	8.4	8.3	8.4
METALS							
Aluminum	200	23.2	[redacted]	24.7	[redacted]	24.8	[redacted]
Arsenic	3	[redacted]	0.99	2.1	1.5	2.6	[redacted]
Iron	300	[redacted]	[redacted]	<42.4	[redacted]	<42.4	[redacted]
Manganese	50	[redacted]	[redacted]	<2.5	27.1	<2.5	46.4
Sodium	50000	[redacted]	49900	30800	16800	24200	14200
Hg	2	0.17	0.17	0.17	0.17	0.17	0.17
VOA-8260C							
		<GWQS	<GWQS	<GWQS	<GWQS	<GWQS	<GWQS
SVOA-8270D SIM							
		<GWQS	<GWQS	<GWQS	<GWQS	<GWQS	<GWQS
SVOA-8270D							
		<GWQS	<GWQS	<GWQS	<GWQS	<GWQS	<GWQS
GCSVOA-8081B-PESTICIDES							
		<GWQS	<GWQS	<GWQS	<GWQS	<GWQS	<GWQS
GCSVOA-8082A-PCBs							
	0.5	<GWQS	<GWQS	<GWQS	<GWQS	<GWQS	<GWQS
GCSVOA-NJDEP EPH							
Total EPH (C9-C40)	NA	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

GWQS - Ground Water Quality Standard
ND - Indicates the analyte was tested for but not detected.
NA - No criterion derived for this contaminant.

[redacted] Result exceeds criterion
Positive result detected below criterion

TABLE 3: GROUNDWATER ANALYTICAL RESULTS SUMMARY - MAY 2017 - AREA II

Overpeck Park Landfill

Teaneck, NJ 07666

NJDES Permit # NJG1086422, PI ID: 545650

	Client ID	Area2-1 (MW-1)	Area2-2 (MW-2)	Area 2-3 (MW-3)	Area2-4 (MW-4)	Area2-5 (MW-5)	Area2-6 (MW-6)
	Lab Sample ID	460-132852-6	460-132962-4	460-132852-5	460-132852-4	460-132852-3	460-132852-2
	Sampling Date	5/4/2017	5/5/2017	5/4/2017	5/4/2017	5/4/2017	5/4/2017
	Matrix	Water	Water	Water	Water	Water	Water
	Dilution Factor	1	1	1	1	1	1
	Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
	GWQS	Result	Result	Result	Result	Result	Result
WETCHEM							
Kjeldahl Nitrogen as N (mg/l)	NA	2.0****	0.62****	6.3**	2.8**	3.4**	0.83**
Ammonia (as N) (mg/l)	3	1.9****	0.15****		2.4	3	0.96
Chromium (hexavalent) (ug/l)	NA	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7
Cyanide, Total (mg/l)	0.1	0.0068	0.0088	0.0062	0.0078	0.0033	0.0027
pH (su)	NA	6.7	7.3	7.2	7.1	7.3	7.6
Total Dissolved Solids (mg/l)	500				397**		
Nitrite as N (mg/l)	1	0.045****	0.029****	0.0068	0.047	0.071	0.048
Nitrate as N (mg/l)	10	0.018****	0.5****	<0.010	0.013	0.69	0.021
Nitrogen, Total (mg/l)	NA	2.1****	1.2****	6.3**	2.9**	4.2**	0.90**
METALS							
Arsenic	3	0.66	<0.64	0.65	<0.64	0.85	
Iron	300						
Lead	5		1.1			2.1	<0.38
Manganese	50						
Sodium	50000	47900		47900		44600	
Hg	2	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
VOA-8260C SIM							
1,4-Dioxane	0.4	<0.2****	<0.2****		<0.2***	0.29***	<0.2***
VOA-8260C							
		<GWQS	<GWQS	<GWQS	<GWQS	<GWQS	<GWQS
SVOA-8270D							
		<GWQS	<GWQS	<GWQS	<GWQS	<GWQS	<GWQS
GCSVOA-8081B-PESTICIDES							
		<GWQS	<GWQS	<GWQS	<GWQS	<GWQS	<GWQS

TABLE 3: GROUNDWATER ANALYTICAL RESULTS SUMMARY - MAY 2017 - AREA II

Overpeck Park Landfill
Teaneck, NJ 07666
NJDES Permit # NJG1086422, PI ID: 545650

	Client ID	Area2-1 (MW-1)	Area2-2 (MW-2)	Area 2-3 (MW-3)	Area2-4 (MW-4)	Area2-5 (MW-5)	Area2-6 (MW-6)
	Lab Sample ID	460-132852-6	460-132962-4	460-132852-5	460-132852-4	460-132852-3	460-132852-2
	Sampling Date	5/4/2017	5/5/2017	5/4/2017	5/4/2017	5/4/2017	5/4/2017
	Matrix	Water	Water	Water	Water	Water	Water
	Dilution Factor	1	1	1	1	1	1
	Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
	GWQS	Result	Result	Result	Result	Result	Result
GCSVOA-8082A-PCBs							
Total PCBs	0.5	<GWQS	<GWQS	<GWQS	<GWQS	<GWQS	<GWQS
GCSVOA-NJDEP EPH							
Total EPH (C9-C40)	NA	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

* - Results without SIM Analysis, analyte was listed as non-detect at MDL>GWQS
** - For wells 3, 4, 5 &6, 1,4-Dioxane, SIM results are from samples collected on May 1, & May 2, 2017
*** - Wet Chemistry analyses were performed on samples collected May 1 and May 2, 2017
**** - For wells 1 & 2, 1,4-Dioxane and Wet Chemistry analyses results are from samples collected on May 25, 201
GWQS - Ground Water Quality Standard
J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
ND - Indicates the analyte was analyzed for but not detected.
NR - Not Analyzed
NA - No criterion for this contaminant

[redacted] Results exceeds criterion
Positive result detected below criterion

TABLE 4: GROUNDWATER ANALYTICAL RESULTS SUMMARY - MAY 2017 - AREA III
Overpeck Park Landfill
Teaneck, NJ 07666
NJDES Permit # NJG1086422, PI ID: 545650

	Client ID	MW-17D	MW-14D	MW-12D	MW-11D	PS-1	MW-18	MW-19
	Lab Sample ID	460-133169-1	460-133169-2	460-133169-3	460-133169-4	460-133169-5	460-132742-2	460-132742-3
	Sampling Date	5/9/2017	5/9/2017	5/9/2017	5/9/2017	05/09/2017 13:30:00	5/2/2017	5/2/2017
	Matrix	Water	Water	Water	Water	Water	Water	Water
	Dilution Factor	1	1	1	1	1	1	1
	Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
	GWQS	Result	Result	Result	Result	Result	Result	Result
WETCHEM								
Kjeldahl Nitrogen as N (mg/l)	NA	0.16	0.43	0.64	0.18	96.6	72.2	20.9
Ammonia (as N) (mg/l)	3	<0.072	<0.072	0.081	<0.072			
Total Dissolved Solids (mg/l)	500	145	387		134			
Nitrite as N (mg/l)	1	0.0074	0.0053	0.008	0.0063	<0.0042	<0.0042	<0.0042
Nitrate as N (mg/l)	10	1.1	0.061	2.9	0.024	<0.010	<0.010	<0.010
Nitrogen, Total (mg/l)	NA	1.1	0.43	3.1	0.18	96.6	72.2	20.9
METALS								
Aluminum	200				<18.2		31.4	21.8
Arsenic	3		2.1			1.4	0.95	
Iron	300				<42.4			
Lead	5			0.48	<0.38	0.43	1.3	
Manganese	50				39.4			
Sodium	50000	11000	36900		15800			
Hg	2	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
VOA-8260C								
Benzene	1	<0.090	<0.090	<0.090	<0.090		0.35	0.25
VOA-8260C & SIM								
1,4-Dioxane	0.4	<0.2	0.31	<0.2	<0.2			

GWQS - Ground Water Quality Standard
ND - Indicates the analyte was analyzed for but not detected.
NA - No criterion derived for this contaminant.

Result exceeds criterion
Positive result detected below criterion

TABLE 5: GROUNDWATER ANALYTICAL RESULTS SUMMARY - MAY 2017 - AREA IV

Overpeck Park Landfill
Teaneck, NJ 07666
NJDES Permit # NJG1086422, PI ID: 545650

	Client ID	PMW-22	PMW-24	PMW-23	PMW-27	PMW-21	PMW-25	PMW-30
	Lab Sample ID	460-132962-1	460-132962-2	460-132962-3	460-132852-1	460-132742-4	460-132742-5	460-132742-6
	Sampling Date	5/5/2017	5/5/2017	5/5/2017	5/4/2017	5/3/2017	5/3/2017	5/3/2017
	Matrix	Water	Water	Water	Water	Water	Water	Water
	Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
	GWQS	Result	Result	Result	Result	Result	Result	Result
WETCHEM								
Chromium (hexavalent) (ug/l)	NA	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	6.2
Cyanide, Total (mg/l)	0.1	<0.002	0.0024	0.002	0.0041	<0.002	0.0038	<0.002
pH (su)	NA	8.3	7.1	8.3	7.1	7.0	7.5	7.0
METALS								
Aluminum	200	38.5	[redacted]	24.7	28.6	<18.2	44.7	22.7
Arsenic	3	[redacted]	[redacted]	1.7	0.67	0.64	[redacted]	1.0
Iron	300	272	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Lead	5	<0.38	1.2	<0.38	0.77	0.91	<0.38	[redacted]
Manganese	50	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Sodium	50000	[redacted]	[redacted]	16200	[redacted]	43500	[redacted]	33700
Hg	2	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
VOA-8260C								
Benzene	1	<0.090	<0.090	<0.090	[redacted]	<0.090	0.12	0.45
Chlorobenzene	50	<0.24	<0.24	<0.24	[redacted]	6.1	<0.24	2.6
SVOA-8270D								
		<GWQS	<GWQS	<GWQS	<GWQS	<GWQS	<GWQS	<GWQS
GCSVOA-8081B-PESTICIDES								
		<GWQS	<GWQS	<GWQS	<GWQS	<GWQS	<GWQS	<GWQS
GCSVOA-8082A-PCBs								
	0.5	<GWQS	<GWQS	<GWQS	<GWQS	<GWQS	<GWQS	<GWQS
GCSVOA-NJDEP EPH								
Total EPH (C9-C40)	NA	<0.2	<0.2	<0.2	1.1	0.56	0.94	0.49

GWQS - Ground Water Quality Standard
ND - Indicates the analyte was tested for but not detected.
NA - No criterion derived for this contaminant.

[redacted] Result exceeds criterion
Positive result detected below criterion

TABLE 6: GROUNDWATER ANALYTICAL RESULTS SUMMARY - MAY 2017 - FIELD & TRIP BLANKS

Overpeck Park Landfill
Teaneck, NJ 07666
NJDES Permit # NJG1086422, PI ID: 545650

	Client ID	FB050117	TB050117	FB050317	TB0500317	FB050417	FB050517	TB	FB050817
	Lab Sample ID	460-132587-3	460-132587-5	460-132742-7	460-132742-8	460-132852-7	460-1329625	460-1329626	460-133022-6
	Sampling Date	5/1/2017	5/1/2017	5/3/2017	5/3/2017	5/4/2017	5/5/2017	5/5/2017	5/8/2017
	Matrix	Water	Water	Water	Water	Water	Water	Water	Water
	Dilution Factor	1	1	1	1	1	1	1	1
	Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
	GWQS	Result	Result	Result	Result	Result	Result	Result	Result
WETCHEM									
Kjeldahl Nitrogen as N (mg/l)	NA	<0.14	NR	NR	NR	NR	NR	NR	NR
Ammonia (as N) (mg/l)	3	<0.072	NR	NR	NR	NR	NR	NR	NR
Chromium (hexavalent) (ug/l)	NA	NR	NR	<2.7	NR	<2.7	<2.7	NR	<2.7
Cyanide, Total (mg/l)	0.1	NR	NR	<0.002	NR	<0.002	0.0025	NR	<0.002
pH (su)	NA	NR	NR	5.9	NR	8.6	6.2	NR	6.1
Total Dissolved Solids (mg/l)	500	<10	NR	NR	NR	NR	NR	NR	NR
Nitrite as N (mg/l)	1	NR	NR	NR	NR	NR	NR	NR	NR
Nitrate as N (mg/l)	10	NR	NR	NR	NR	NR	NR	NR	NR
Nitrogen, Total (mg/l)	NA	<0.10	NR	NR	NR	NR	NR	NR	NR
METALS									
Aluminum	200	NR	NR	<18.2	NR	141	<18.2	NR	<18.2
Barium	6000	<1.2	NR	<1.2	NR	2	1.2	NR	<1.2
Calcium	NA	<60.5	NR	<60.5	NR	1220	181	NR	<60.5
Copper	1300	<1.4	NR	<1.4	NR	<1.4	2.7	NR	<1.4
Iron	300	<42.4	NR	<42.4	NR	147	276	NR	<42.4
Lead	5	<0.38	NR	<0.38	NR	<0.38	2.8	NR	<0.38
Sodium	5000	<69.0	NR	110	NR	2270	73.2	NR	<69.0
Hg	2	<0.17	NR	<0.17	NR	<0.17	<0.17	NR	<0.17
VOA-8260C									
Acetone	6000	<1.1	<1.1	5.2	5.4	<1.1	4.5	5.3	<1.1
Methylene chloride	3	0.63	<0.21	<0.21	<0.21		0.35	0.49	0.64
VOA-8260C SIM									
1,4-Dioxane		<0.2	<0.2	NR	<0.2	NR	NR	NR	NR
SVOA-8270D									
		NR	NR	<GWQS	NR	<GWQS	<GWQS	NR	<GWQS
SVOA-8270D SIM									
		NR	NR	<GWQS	NR	<GWQS	NR	NR	<GWQS
GCSVOA-8081B-PESTICIDES									
		NR	NR	<GWQS	NR	<GWQS	<GWQS	NR	<GWQS

TABLE 6: GROUNDWATER ANALYTICAL RESULTS SUMMARY - MAY 2017 - FIELD & TRIP BLANKS

Overpeck Park Landfill
Teaneck, NJ 07666
NJDES Permit # NJG1086422, PI ID: 545650

	Client ID	FB050117	TB050117	FB050317	TB0500317	FB050417	FB050517	TB	FB050817
	Lab Sample ID	460-132587-3	460-132587-5	460-132742-7	460-132742-8	460-132852-7	460-1329625	460-1329626	460-133022-6
	Sampling Date	5/1/2017	5/1/2017	5/3/2017	5/3/2017	5/4/2017	5/5/2017	5/5/2017	5/8/2017
	Matrix	Water	Water	Water	Water	Water	Water	Water	Water
	Dilution Factor	1	1	1	1	1	1	1	1
	Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
	GWQS	Result	Result	Result	Result	Result	Result	Result	Result
GCSVOA-8082A-PCBS									
Total PCBs	0.5	NR	NR	<GWQS	NR	<GWQS	<GWQS	NR	<GWQS
GCSVOA-NJDEP EPH									
Total EPH (C9-C40)	NA	NR	NR	<0.2	NR	<0.2	<0.2	NR	<0.2

GWQS - Ground Water Quality Standard
ND - Indicates the analyte was analyzed for but not detected.
NA - No criterion derived for this contaminant.

Result exceeds criterion
Positive result detected below criterion

TABLE 6: GROUNDWATER ANALYTICAL RESULTS SUMMARY - MAY 2017 - FIELD & TRIP BLANKS
Overpeck Park Landfill
Teaneck, NJ 07666
NJDES Permit # NJG1086422, PI ID: 545650

	Client ID	Trip Blank	FB050917	TB050917	FB051217	TB051217	FB052517	TB052517
	Lab Sample ID	460-133022-7	460-133169-6	460-133169-7	460-133379-2	460-133379-3	460-134025-3	460-134025-4
	Sampling Date	5/8/2017	5/9/2017	5/9/2017	5/12/2017	5/12/2017	5/25/2017	5/25/2017
	Matrix	Water	Water	Water	Water	Water	Water	Water
	Dilution Factor	1	1	1	1	1	1	1
	Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
	GWQS	Result	Result	Result	Result	Result	Result	Result
WETCHEM								
Kjeldahl Nitrogen as N (mg/l)	NA	NR	<0.14	NR	NR	NR	0.15	NR
Ammonia (as N) (mg/l)	3	NR	<0.072	NR	NR	NR	<0.072	NR
Chromium (hexavalent) (ug/l)	NA	NR	NR	NR	<2.7	NR	NR	NR
Cyanide, Total (mg/l)	0.1	NR	NR	NR	<0.002	NR	NR	NR
pH (su)	NA	NR	NR	NR	6	NR	NR	NR
Total Dissolved Solids (mg/l)	500	NR	<10.0	NR	NR	NR	<10.0	NR
Nitrite as N (mg/l)	1	NR	0.018	NR	NR	NR	<0.003	NR
Nitrate as N (mg/l)	10	NR	<0.010	NR	NR	NR	<0.010	NR
Nitrogen, Total (mg/l)	NA	NR	<0.10	NR	NR	NR	<0.20	NR
METALS								
Aluminum	200	NR	<18.2	NR	<18.2	NR	NR	NR
Barium	6000	NR	<1.2	NR	<1.2	NR	NR	NR
Calcium	NA	NR	<60.5	NR	<60.5	NR	NR	NR
Copper	1300	NR	<1.4	NR	<1.4	NR	NR	NR
Iron	300	NR	<42.4	NR	<42.4	NR	NR	NR
Lead	5	NR	<0.38	NR	<0.38	NR	NR	NR
Sodium	5000	NR	535	NR	<69.0	NR	NR	NR
Hg	2	NR	<0.17	NR	<0.17	NR	NR	NR
VOA-8260C								
Acetone	6000	<1.1	<1.1	<1.1	4.5	4.1	NR	NR
Methylene chloride	3	0.51	<0.21	[redacted]	0.39	<0.21	NR	NR
VOA-8260C SIM								
1,4-Dioxane		NR	<0.2	<0.2	NR	NR	<0.2	<0.2
SVOA-8270D								
		NR	NR	NR	<GWQS	NR	NR	NR
SVOA-8270D SIM								
		NR	NR	NR	<GWQS	NR	NR	NR
GCSVOA-8081B-PESTICIDES								
		NR	NR	NR	<GWQS	NR	NR	NR

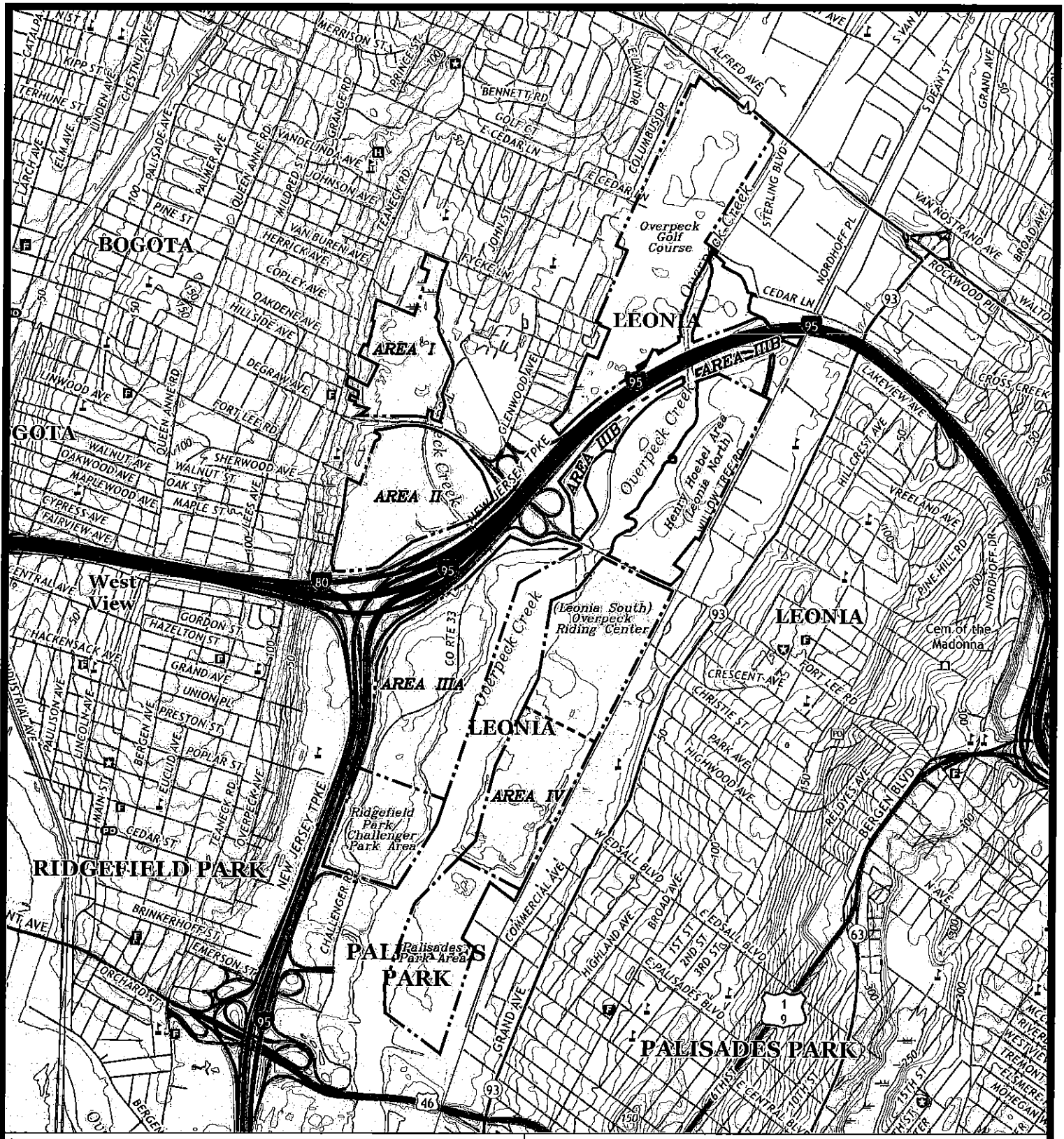
TABLE 6: GROUNDWATER ANALYTICAL RESULTS SUMMARY - MAY 2017 - FIELD & TRIP BLANKS

Overpeck Park Landfill
Teaneck, NJ 07666
NJDES Permit # NJG1086422, PI ID: 545650

	Client ID	Trip Blank	FB050917	TB050917	FB051217	TB051217	FB052517	TB052517
	Lab Sample ID	460-133022-7	460-133169-6	460-133169-7	460-133379-2	460-133379-3	460-134025-3	460-134025-4
	Sampling Date	5/8/2017	5/9/2017	5/9/2017	5/12/2017	5/12/2017	5/25/2017	5/25/2017
	Matrix	Water	Water	Water	Water	Water	Water	Water
	Dilution Factor	1	1	1	1	1	1	1
	Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
	GWQS	Result	Result	Result	Result	Result	Result	Result
GCSVOA-8082A-PCBS								
Total PCBs	0.5	NR	NR	NR	<GWQS	NR	NR	NR
GCSVOA-NJDEP EPH								
Total EPH (C9-C40)	NA	NR	NR	NR	<0.2	NR	NR	NR

GWQS - Ground Water Quality Standard
ND - Indicates the analyte was analyzed for but not detected.
NA - No criterion derived for this contaminant.

Result exceeds criterion
Positive result detected below criterion



PREPARED BY

CME ASSOCIATES

CONSULTING AND MUNICIPAL ENGINEERS

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

SCALE

2000 1000 0 2000

1" = 2000'

COMPASS

N W E S

TITLE

FIGURE 1
SITE LOCATION MAP
OVERPECK COUNTY PARK
BERGEN COUNTY
NEW JERSEY

CLIENT **BERGEN COUNTY DEPARTMENT OF PARKS**
ONE BERGEN COUNTY PLAZA
HUDSON STREET, HACKENSACK, NJ 07601

SOURCE USGS WEEHAWKEN, CENTRAL PARK, & YONKERS, NY-NJ, AND HACKENSACK, NJ 7.5-MINUTE SERIES QUADRANGLES; US TOPO 2016

PROJECT NO.	SCALE	DATE
IBC00276.05	1" = 2000'	8/3/2017

P:\BERGEN COUNTY\Overpeck Park\CAD\Overpeck Park\Areas - All\Groundwater Results\01 - Site Location Map.dwg 08/03/17 10:00:46AM, rpiznin, LAYOUT:8.5X11

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: 4 (AREA 2)
DATE: 5-1-17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): _____ Horiba Serial #: 21961

PROJECT: Overpeck Park : Area 2
LOCATION: Leonia, NJ

PARAMETER	VOLUME EXTRACTED											
	INITIAL											
Time	3 30	3 40	3 50	4.00	4:10							
Specific Conductivity (mS/cm)	0.794	0.797	0.795	0.794	0.797							
pH (pH units)	7.09	6.99	6.95	6.94	6.93							
Temperature (degrees C)	12.89	11.40	11.26	11.21	11.26							
Turbidity (NTU)	9.4	1.8	0.0	0.0	0.0							
Color	clear	clear	clear	clear	clear							
Odor	~~organic~~	Organic	Organic	Organic	organic							
Dissolved Oxygen (mg/l)	3.83	1.54	1.16	1.09	2.02							
Salinity (ppt)	0.4	0.4	0.4	0.4	0.4							
ORP	-102	-98	-102	-104	-106							

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 7.53 (inner casing)
Initial depth to water (feet btc): 4.55
Height of water column in riser h (feet): 2.98
Volume of water in well (gallons): 1.95

Total volume to be purged (gallons): 5.84

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic
Sampling Method: Bailer
Final depth to water (feet): 4.83
Purged dry? Yes____ No X
Time start / Time sampled: 3:30 / 4:20
Product thickness and/or sheen? Yes____ No X

Depth to water (outer casing) = 4.85 ft
Depth of well (outer casing) = 7.85 ft

TARGET PARAMETERS: Ammonia, Nitrate, Nitrite, Nitrogen
TAL Metals w/ Hg, TCL VOC+10 + 4 SIM, TDS

COMMENTS:
flow rate ≈ 0.25 gallons/minute

on chain as Area 2-4

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: AREA 2 - 5
DATE: 5-1-17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): _____ Horiba Serial #: 210L1

PROJECT: Overpeck Park Area 2
LOCATION: Leonia, NJ

PARAMETER	VOLUME EXTRACTED											
	INITIAL											
Time	2:10	2:25	2:40	2:55								
Specific Conductivity (mS/cm)	0.997	1.01	1.13	1.19								
pH (pH units)	7.62	7.37	7.05	6.96								
Temperature (degrees C)	14.21	12.75	13.04	13.08								
Turbidity (NTU)	26.4	0.0	0.0	0.0								
Color	clear	clear	clear	clear								
Odor	ND	ND	ND	ND								
Dissolved Oxygen (mg/l)	3.47	1.35	1.17	1.80								
Salinity (ppt)	0.5	0.5	0.6	0.6								
ORP	49	15	-39	-55								

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 15.20
Initial depth to water (feet btc): ~~4.66~~ 4.35
Height of water column in riser h (feet): 10.85
Volume of water in well (gallons): 7.09

Total volume to be purged (gallons): 21.26

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic
Sampling Method: Bailer
Final depth to water (feet): 4.95
Purged dry? Yes ___ No X
Time start / Time sampled: 2:10 / 3:15
Product thickness and/or sheen? Yes ___ No X

TARGET PARAMETERS: Ammonia, Nitrate, Nitrite, Nitrogen, TAL Metals w/ Hg, TCL VOC +10, +SIM, TDS

COMMENTS: 4.60 ft = depth to water casing
Flow rate = 0.25 to 0.3 gallons/minute

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: 6 (AREA 2)
DATE: 5/1/17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): _____ Horiba Serial #: 21061

PROJECT: Overpeck Park Area 2
LOCATION: Leonia, NJ

PARAMETER	VOLUME EXTRACTED										
	INITIAL										
Time	11:40	11:50	12:00	12:20	12:40	13:00					
Specific Conductivity (mS/cm)	1.53	1.52	1.52	1.52	1.51	1.51					
pH (pH units)	7.38	7.10	7.09	7.07	7.08	7.08					
Temperature (degrees C)	12.23	11.95	11.98	12.02	12.76	12.83					
Turbidity (NTU)	183	168	165	92.8	61.2	57.4					
Color	ND (yellowish)	clear	clear	clear	clear	clear					
Odor		ND	ND	ND	ND	ND					
Dissolved Oxygen (mg/l)	3.02	1.86	1.60	1.35	1.73	1.54					
Salinity (ppt)	0.8	0.8	0.8	0.8	0.8	0.8					
ORP	-108	-90	-91	-93	-100	-92					

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 21.10
Initial depth to water (feet btc): 7.15 (inner casing)
Height of water column in riser h (feet): 13.95
Volume of water in well (gallons): 9.11

Total volume to be purged (gallons): 27.33

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic
Sampling Method: Bailer
Final depth to water (feet): 13.60
Purged dry? Yes___ No X
Time start / Time sampled: 11:40 / 13:15
Product thickness and/or sheen? Yes___ No X

TARGET PARAMETERS: Ammonia, Nitrogen, Nitrate, Nitrite, TAL Metals w/ Hg (Mercury), TCL VOC + 10 + SIM, TDS

COMMENTS: 7.40 ft ~~from~~ to water casing
silt on bottom

0.25 gallons/minute purge flow

On chain as Area 2-6

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: Area 2-3
DATE: 5-2-17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): _____ Horiba Serial #: 21061

PROJECT: Overpeck Park: Area 2
LOCATION: Leonia, NJ

PARAMETER	VOLUME EXTRACTED											
	INITIAL											
Time	9.40	9:50	10:00	10:10								
Specific Conductivity (mS/cm)	1.25	1.12	1.10	1.11								
pH (pH units)	7.02	6.81	6.81	6.80								
Temperature (degrees C)	15.41	13 15	13 07	12.93								
Turbidity (NTU)	56.6	2.5	0.0	0.9								
Color	clear	clear	clear	clear								
Odor	organic	organic	organic	organic								
Dissolved Oxygen (mg/l)	6.24	2.14	1.46	1.27								
Salinity (ppt)	0.6	0.6	0.5	0.5								
ORP	-104	-102	-107	-110								

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 11.60 ~~7.53 (outer)~~
Initial depth to water (feet btc): 7.53 (inner)
Height of water column in riser h (feet): 4.07
Volume of water in well (gallons): 2.66

Total volume to be purged (gallons): 7.97

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic
Sampling Method: Bailer
Final depth to water (feet): 7.55
Purged dry? Yes___ No X
Time start / Time sampled: 9:40 / 10:20
Product thickness and/or sheen? Yes___ No X

TARGET PARAMETERS: Ammonia, Nitrogen, Nitrate, Nitrite, TAL Metals w/ Hg, TCL VOC+10+CSIM, TDS

COMMENTS: 7.97ft (outer casing DTW)
12.03 ft (outer casing depth of well)
0.25 gallons / minute ≈ flow rate

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: MW-18
DATE: 5-2-17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): _____ Horiba Serial #: 21061

PROJECT: Overpeck Park : Area 3B
LOCATION: _____

PARAMETER	VOLUME EXTRACTED											
	INITIAL											
Time	1:15	1:35	1:55	2:15	2:30							
Specific Conductivity (mS/cm)	1.65	1.67	6.44	1.81	1.94							
pH (pH units)	6.60	6.47	6.44	6.45	6.44							
Temperature (degrees C)	22.72	21.24	19.56	17.24	13.98							
Turbidity (NTU)	8.4	8.5	22.5	24.1	5.2							
Color	colorless	colorless	colorless	colorless	colorless							
Odor	yes, possibly petro/organic	petro/orgo	petro/orgo	petro/orgo	petro/orgo							
Dissolved Oxygen (mg/l)	4.02	1.46	0.92	1.06	1.00							
Salinity (ppt)	0.8	0.8	0.9	0.9	0.9							
ORP	-53	-56	-66	-72	-73							

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 22.60
Initial depth to water (feet btc): 7.85 (outer casing)
Height of water column in riser h (feet): 14.75
Volume of water in well (gallons): 9.63

Total volume to be purged (gallons): 28.90

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic
Sampling Method: Bailer
Final depth to water (feet): 8.28
Purged dry? Yes ___ No X
Time start / Time sampled: 1:15 / 2:45
Product thickness and/or sheen? Yes ___ No X

TARGET PARAMETERS: Ammonia Nitrogen, Nitrate, Nitrite, TAL Metals w/ Hg, TCL VOC+10+SIM, TDS

COMMENTS: inner casing is uneven
flow rate ≈ 0.3 gallons/minute

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: MW-19
DATE: 5-2-17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): _____ Horiba Serial #: 21061

PROJECT: Overpeck Park: Area 3B
LOCATION: _____

PARAMETER	VOLUME EXTRACTED										
	INITIAL										
Time	3:00	3:10	3:20	3:30	3:40	3:50					
Specific Conductivity (mS/cm)	1.95	2.04	2.03	2.02	2.01	2.01					
pH (pH units)	6.83	6.54	6.54	6.55	6.54	6.54					
Temperature (degrees C)	17.23	16.03	16.08	16.04	16.01	16.03					
Turbidity (NTU)	47.9	53.6	37.4	31.1	24.5	10.0					
Color	clear	clear	clear	clear	clear	clear					
Odor	ND	ND	ND	ND	ND	ND					
Dissolved Oxygen (mg/l)	2.80	1.33	1.15	1.10	1.06	1.04					
Salinity (ppt)	1.0	1.0	1.0	1.0	1.0	1.0					
ORP	-36	-43	-50	-54	-57	-59					

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 21.00
Initial depth to water (feet btc): 11.00 (outer)
Height of water column in riser h (feet): 10.5
Volume of water in well (gallons): 1.86

Total volume to be purged (gallons): 20.57

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic
Sampling Method: Bailer
Final depth to water (feet): 11.55
Purged dry? Yes____ No X
Time start / Time sampled: 3:00 / 4:00
Product thickness and/or sheen? Yes____ No X

TARGET PARAMETERS: Ammonia, Nitrogen, Nitrate, Nitrite, TAL Metals w/ Hg, TCL VOC+10+SIM, TDS

COMMENTS: 10.55 (inner casing measurement) 0.4+ gallons/minute

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: PMW-21
DATE: 5/3/17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): _____ Horiba Serial #: 21061

PROJECT: Overpeck Park
LOCATION: Palisades Park, NJ

PARAMETER	VOLUME EXTRACTED										
	INITIAL										
Time	9:00	9:10	9:20	9:30	9:40	9:50					
Specific Conductivity (mS/cm)	1.09	1.15	1.22	1.25	1.25	1.25					
pH (pH units)	7.08	6.64	6.53	6.50	6.50	6.50					
Temperature (degrees C)	15.01	13.18	11.95	11.74	11.55	11.60					
Turbidity (NTU)	63.7	41.6	8.9	6.3	5.7	5.6					
Color	colorless	colorless	colorless	Clear	Clear	Clear					
Odor	ND	ND	ND	ND	ND	ND					
Dissolved Oxygen (mg/l)	3.26	1.96	1.64	1.20	1.22	1.09					
Salinity (ppt)	0.5	0.6	0.6	0.6	0.6	0.6					
ORP	97	41	6	-5	-11	-17					

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 18.60
Initial depth to water (feet btc): 8.00 (inner)
Height of water column in riser h (feet): 10.00
Volume of water in well (gallons): 6.53

Total volume to be purged (gallons): 19.59

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic
Sampling Method: Bailer
Final depth to water (feet): 9.00
Purged dry? Yes ___ No X
Time start / Time sampled: 9:00 / 9:55
Product thickness and/or sheen? Yes ___ No X

TARGET PARAMETERS: TAL+30, EPH, Hexavalent Chrom., pH

COMMENTS:
8.90 (outer casing DTW)
18.90 (outer casing total depth)
Silty @ bottom

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: PMW-25
DATE: 050317
Instrument: Horiba U-52 Pine Serial # (From sensor, not meter screen): _____ Horiba Serial #: 21061

PROJECT: Overpeck Park
LOCATION: Palisades Park, NJ

PARAMETER	VOLUME EXTRACTED											
	INITIAL			Dried								
Time	11:00	11:15	11:30	11:45	12:00							
Specific Conductivity (mS/cm)	2.07	2.12	2.06	2.06								
pH (pH units)	7.47	7.24	7.26	7.25								
Temperature (degrees C)	15.56	13.06	14.52	14.37								
Turbidity (NTU)	165	159	96.	58.								
Color	colorless	colorless	Colorless	Colorless								
Odor	ND	ND	ND	ND								
Dissolved Oxygen (mg/l)	1.95	1.45	1.72	1.69								
Salinity (ppt)	1.1	1.1	1.0	1.0								
ORP	95	79	69	57								

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 26.15
Initial depth to water (feet btc): 8.40
Height of water column in riser h (feet): 17.75
Volume of water in well (gallons): 11.59

Total volume to be purged (gallons): 34.77

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic
Sampling Method: Bailer
Final depth to water (feet): *12.85
Purged dry? Yes X No
Time start / Time sampled: 11:00 / 14:00
Product thickness and/or sheen? Yes ___ No X

TARGET PARAMETERS: TAL+30, EPH, Hexavalent Chrom., pH

COMMENTS: flow rate ≈ 0.4 gallons/minute
Well dried after 11:45 reading (~16-17 gallon purged)
Slow recharge.
Mobe to PMW-30; will collect PMW-25 on return trip.

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: PMW-30
DATE: 5-3-17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): _____

PROJECT: Overpeck Park
LOCATION: Palisades Park, NJ
Horiba Serial #: 21061

PARAMETER	VOLUME EXTRACTED											
	INITIAL											
Time	12:05	12:20	12:40	13:00	13:20							
Specific Conductivity (mS/cm)	1.89	1.57	1.37	1.35	1.35							
pH (pH units)	6.54	6.79	6.78	6.65	6.63							
Temperature (degrees C)	14.12	14.12	14.01	13.58	13.60							
Turbidity (NTU)	146	77.0	54.3	5.0	5.0							
Color	clear	clear	clear	clear	clear							
Odor	none	none	none	none	none							
Dissolved Oxygen (mg/l)	3.74	1.10	0.92	1.10	0.99							
Salinity (ppt)	0.7	0.7	0.7	0.6	0.6							
ORP	-57	-77	-82	-67	-59							

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 21.10
Initial depth to water (feet btc): 7.10
Height of water column in riser h (feet): 14.00
Volume of water in well (gallons): 9.14

Total volume to be purged (gallons): 27.41

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic
Sampling Method: Bailer
Final depth to water (feet): 7.11
Purged dry? Yes___ No X
Time start / Time sampled: 12:05 / 13:30
Product thickness and/or sheen? Yes___ No X

TARGET PARAMETERS: TAL+30, EPH, Hexavalent Chrom., pH

COMMENTS: 0.4 gallons/minute

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: Area 2-1
DATE: 5/4/17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): 2115C

PROJECT: Overpeck L-F.
LOCATION: Area 2 (Along Degraw Ave.)
Horiba Serial #:

PARAMETER	VOLUME EXTRACTED (1 volume *)										
	INITIAL										
Time	15:20	15:30	15:40	15:45	15:50	16:00	16:10				
Specific Conductivity (mS/cm)	1.87	1.89	1.89	1.89	1.89	1.89	1.89				
pH (pH units)	6.93	6.77	6.76	6.68	6.67	6.65	6.65				
Temperature (degrees C)	11.03	9.96	9.81	9.66	9.63	9.62	9.60				
Turbidity (NTU)	428	31.4	27.6	27.5	12.4	12.1	12.2				
Color	Clear	Clear	Clear	Clear	Clear	Clear	Clear				
Odor	Organic	light Organic	Organic light	Organic light	Organic light	NONE	None				
Dissolved Oxygen (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Salinity (ppt)	0.9	0.9	0.9	0.9	0.9	0.9	0.9				
ORP	-104	-107	-108	-109	-110	-110	-110				

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 16'
Initial depth to water (feet btc): 3.90
Height of water column in riser h (feet): 12.10
Volume of water in well (gallons):

Total volume to be purged (gallons): ~23.5 gallons.

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163" Water (ft) 4": 0.653" Water (ft) 6": 1.469" Water (ft)

Purge Method: Peristaltic Pump
Sampling Method: Bailer
Final depth to water (feet): 4.82
Purged dry? Yes___ No X
Time start / Time sampled: [redacted] 15:20/16.20
Product thickness and/or sheen? Yes___ No X

TARGET PARAMETERS: T

COMMENTS: Purging @ 0.4 gpm ⇒ 1 gal/2.5 min.
~ 1 hr purge for Stabilization (look for it after 20 min ⇒ 1 well volume).
Stop @ 16:10, Collect samples
Area 2-1 - Complete at 16:20

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: Area 2-3
DATE: 5/14/17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): _____ Horiba Serial #: _____

PROJECT: Overpeck LF
LOCATION: Area 2

PARAMETER	VOLUME EXTRACTED										
	INITIAL										
Time	12:15	12:25	12:35	12:45	12:50	12:55					
Specific Conductivity (mS/cm)	3.59	2.59	1.12	1.10	1.09	1.09					
pH (pH units)	6.56	6.47	6.66	6.65	6.65	6.65					
Temperature (degrees C)	16.58	14.35	12.20	12.18	12.05	11.98					
Turbidity (NTU)	8.8	0.0	10.0	2.3	2.0	2.0					
Color	Clear	Clear	Clear	Clear	Clear	Clear					
Odor	None*	None*	None*	None*	None*	None*					
Dissolved Oxygen (mg/l)	0.0	0.0	0.96	1.01	0.99	0.98					
Salinity (ppt)	1.9	1.2	0.6	0.6	0.5	0.5					
ORP	-101	-121	-137	-139	-140	-141					

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): _____
Initial depth to water (feet btc): 7.52
Height of water column in riser h (feet): _____
Volume of water in well (gallons): _____

Total volume to be purged (gallons): _____

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: ~~Bailer~~ Peristaltic
Sampling Method: Bailer
Final depth to water (feet): 7.65
Purged dry? Yes____ No X
Time start / Time sampled: 12:15 / 13:00
Product thickness and/or sheen? Yes____ No____

TARGET PARAMETERS: _____

COMMENTS: * Odor - none: Organic/swampy
Purging ~ 0.25 gpm
Start Sampling @ 13:00
Complete Sampling 13:20, Move out to Area 2 Parking @ 13:35

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: AREA 2-4
DATE: 5-4-17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): _____

PROJECT: Overpeck Park
LOCATION: Leonia, NJ
Horiba Serial #: 21061

PARAMETER	VOLUME EXTRACTED											
	INITIAL				2:35							
Time	2:15	2:20	2:25	2:30	~~2:35~~	~~2:40~~	~~2:45~~					
Specific Conductivity (mS/cm)	0.826	0.838	0.845	0.846	0.84L							
pH (pH units)	7.13	7.05	7.00	6.99	6.98							
Temperature (degrees C)	12:36	11.12	10.81	10.69	10.67							
Turbidity (NTU)	7.5	0.7	0.0	0.0	0.0							
Color	colorless	colorless	colorless	colorless	colorless							
Odor	organic	organic	organic	organic	organic							
Dissolved Oxygen (mg/l)	1.67	1.32	1.13	1.05	1.02							
Salinity (ppt)	0.4	0.4	0.4	0.4	0.4							
ORP	-87	-89	-92	-94	-95							

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 7.57
Initial depth to water (feet btc): 4.70
Height of water column in riser h (feet): 2.87
Volume of water in well (gallons): 1.87

Total volume to be purged (gallons): 5.6

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic
Sampling Method: Bailer
Final depth to water (feet): 4.70
Purged dry? Yes___ No X
Time start / Time sampled: 2:15 / 2:45
Product thickness and/or sheen? Yes___ No X

TARGET PARAMETERS: _____

COMMENTS: Reading stabalized so ended purge and sampled

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: Area 2 - 6
DATE: 5/4/17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): 21150 Horiba Serial #: [redacted]

PROJECT: Overpeck Park / L.F.
LOCATION: Area 2

PARAMETER	VOLUME EXTRACTED											
	INITIAL											
Time	10:05	10:25	10:45	11:00	11:15							
Specific Conductivity (mS/cm)	1.32	1.34	1.33	~~1.33~~ 1.33	1.33							
pH (pH units)	7.86	7.61	7.13	7.03	7.01							
Temperature (degrees C)	13.47	12.86	13.29	12.97	12.68							
Turbidity (NTU)	87.4	54.3	18.8	18.2	13.4							
Color	Clear	Clear	Clear	Clear	Clear							
Odor	None	None	None	None	None							
Dissolved Oxygen (mg/l)	0.95	0.0	0.0	0.0	0.00							
Salinity (ppt)	0.7	0.7	0.7	0.7	0.7							
ORP			-108	-101	-99.							

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet):
Initial depth to water (feet btc): 7.5
Height of water column in riser h (feet):
Volume of water in well (gallons):

Total volume to be purged (gallons):

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic
Sampling Method: Bailer
Final depth to water (feet): 9.03
Purged dry? Yes___ No X
Time start / Time sampled: 10:05 / 11:25
Product thickness and/or sheen? Yes___ No X

TARGET PARAMETERS: TAL +30, EPH, Cr^{+6}, pH.

COMMENTS: Initial Slug - Reddish Brown Silty, Clears in few minutes. 0.25 gpm.

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: 5
DATE: 5-4-17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): _____ Horiba Serial #: 2106j

PROJECT: Overpeck Park
LOCATION: Leonia, NJ

PARAMETER	VOLUME EXTRACTED										
	INITIAL										
Time	12:35	12:45	12:55	13:05	13:15	13:25	13:35				
Specific Conductivity (mS/cm)	1.03	1.04	1.05	1.08	1.37	1.23	1.32				
pH (pH units)	7.80	7.54	7.39	7.23	7.09	7.01	6.99				
Temperature (degrees C)	12.98	12.51	12.55	12.53	12.42	12.64	12.68				
Turbidity (NTU)	44.4	41.4	38.8	8.2	4.2	2.7	2.7				
Color	colorless	colorless	colorless	colorless	colorless	colorless	colorless				
Odor	ND	ND	ND	ND	ND	ND	ND				
Dissolved Oxygen (mg/l)	2.36	1.79	1.50	1.27	1.44	1.11	1.06				
Salinity (ppt)	0.5	0.5	0.5	0.5	0.6	0.6	0.6				
ORP	73	60	29	-7	-27	-41	-49				

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 15.20
Initial depth to water (feet btc): 4.55 (inner)
Height of water column in riser h (feet): 10.65
Volume of water in well (gallons): 6.95

Total volume to be purged (gallons): 20.86

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic
Sampling Method: Bailer
Final depth to water (feet): 4.79
Purged dry? Yes ___ No X
Time start / Time sampled: 12:35 / 13:45
Product thickness and/or sheen? Yes ___ No X

TARGET PARAMETERS: _____

COMMENTS: flow rate ≈ 0.3 gallons/minute
very difficult to get tubing into well; kept getting snagged

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: PMW-27
DATE: 5-4-17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): _____ Horiba Serial #: 21061

PROJECT: Overpeck Park
LOCATION: Palisades Park, NJ

PARAMETER	VOLUME EXTRACTED											
	INITIAL											
Time	9:40	9:55	10:10	10:25	10:40							
Specific Conductivity (mS/cm)	2.32	2.71	2.62	2.53	2.49							
pH (pH units)	6.86	6.75	6.70	6.69	6.67							
Temperature (degrees C)	19.76	12.92	13.28	13.56	13.58							
Turbidity (NTU)	237	227	152	109	88.5							
Color	colorless	colorless	colorless	colorless	colorless							
Odor	organic	organic	organic	organic	organic							
Dissolved Oxygen (mg/l)	3.23	2.01	1.54	1.52	1.12							
Salinity (ppt)	1.2	1.4	1.3	1.3	1.3							
ORP	62	-20	-29	-40	-45							

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 23.08
Initial depth to water (feet btc): 9.24
Height of water column in riser h (feet): 13.84
Volume of water in well (gallons): 9.04

Total volume to be purged (gallons): 27.11

Formula for Calculating Purge Volume: $\pi (D^2/4)\,h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic
Sampling Method: Bailer
Final depth to water (feet): 9.28
Purged dry? Yes___ No X
Time start / Time sampled: 9:40 / 10:50
Product thickness and/or sheen? Yes___ No X

TARGET PARAMETERS: _____

COMMENTS: very silty bottom
flow rate ≈ 0.4+ gallons/minute

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: AREA 2-2
DATE: 5-5-17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): _____

PROJECT: Overpeck Park
LOCATION: Leonia, NJ
Horiba Serial #: 21061

PARAMETER	VOLUME EXTRACTED										
	INITIAL										
Time	3:05	3:15	3:25	3:40	3:55	4:10	4:20				
Specific Conductivity (mS/cm)	4.15	4.02	3.61	3.50	3.38	3.29	3.27				
pH (pH units)	6.74	6.57	6.51	6.51	6.51	6.51	6.51				
Temperature (degrees C)	11.31	10:88	10:92	11:02	11:08	11:20	11:22				
Turbidity (NTU)	27.3	7.5	6.5	4.8	4.1	4.0	3.9				
Color	clear	colorless	colorless	colorless	colorless	colorless	colorless				
Odor	NS	ND	ND	ND	ND	ND	ND				
Dissolved Oxygen (mg/l)	2.76	1.81	1.36	1.70	1.11	1.04	1.52				
Salinity (ppt)	2.2	2.1	1.9	1.8	1.7	1.7	1.7				
ORP	190	175	148	130	112	97	97				

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 15.46
Initial depth to water (feet btc): 4.15
Height of water column in riser h (feet): 11.31
Volume of water in well (gallons): 7.38

Total volume to be purged (gallons): 22.16

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic
Sampling Method: Bailer
Final depth to water (feet): 4.15
Purged dry? Yes___ No X
Time start / Time sampled: 3:05 / 4:30
Product thickness and/or sheen? Yes___ No X

TARGET PARAMETERS: TAL+30, EPH, Hexavalent Chrom., pH

COMMENTS: flow rate ≈ 0.35 gallons/minute

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: PMW-22
DATE: 5/5/17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): 21150

PROJECT: Overpeck L F
LOCATION: Area 4
Horiba Serial #:

PARAMETER	VOLUME EXTRACTED										
	INITIAL										
Time	9:00	9:15	9:30	9:45	10:00	10:15	10:20	10:25			
Specific Conductivity (mS/cm)	0.941	0.856	0.852	0.828	0.852	0.856	0.856	0.856			
pH (pH units)	7.63	7.58	7.61	7.59	7.56	7.55	7.53	7.53			
Temperature (degrees C)	13.45	12.57	12.35	12.14	11.78	11.77	11.68	11.65			
Turbidity (NTU)	2.4	2.0	2.0	1.8	1.8	1.8	1.7	1.8			
Color	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear			
Odor	ND	ND	ND	ND	ND	ND	ND	ND			
Dissolved Oxygen (mg/l)	4.3	0.5	0.5	0.2	0.0	0.0	0.0	0.0			
Salinity (ppt)	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4			
ORP	98	109	113	115	116	118	119	118			

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 24'
Initial depth to water (feet btc): 4.10
Height of water column in riser h (feet): 19.90
Volume of water in well (gallons): ~13 gals.

Total volume to be purged (gallons): ~39 gals
or Stabilization

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic Pump
Sampling Method: Bailer
Final depth to water (feet): 8.65
Purged dry? Yes ___ No X
Time start / Time sampled: 9:00 / 10:55
Product thickness and/or sheen? Yes ___ No X

TARGET PARAMETERS: TCL+30, TAL Metals, EPH, Cr^{+6}, pH.

COMMENTS: Stability option → after 13-14 gallons (1 volume)
Stable after ~80 min → 25-28 gallons purged
purge rate = 0.35 gpm

Start Collecting (10:30-10:55)

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Ref (AMA) 32494

Monitoring Well Stabilization Test

WELL NO: PMW-23
DATE: 5/5/17
PROJECT: Overpeck Park/LF
LOCATION: Area 4/Equestrian Center
Instrument: Horiba U-52 Pine Serial # (From sensor, not meter screen): 21150 Horiba Serial #:

PARAMETER	VOLUME EXTRACTED										
	INITIAL										
Time	14:30	14:45	15:00	15:15	15:20	15:25	15:30				
Specific Conductivity (mS/cm)	0.272	0.262	0.261	0.262	0.263	0.263	↓				
pH (pH units)	7.81	7.72	7.76	7.78	7.78	7.77					
Temperature (degrees C)	10.92	11.01	11.16	11.29	11.38	11.36					
Turbidity (NTU)	62.5	2.5	1.9	0.5	0.5	0.3					
Color	Clear	Clear	Clear	Clear	Clear	Clear	START SAMPLE				
Odor	None	None	None	None	None	None					
Dissolved Oxygen (mg/l)	15.72	11.24	7.76	0.0	0.0	0.0					
Salinity (ppt)	0.1	0.1	0.1	0.1	0.1	0.1					
ORP	64.0	57.0	50.0	23.0	14.0	12.0					

Depth to water measured from north side of the top of riser pipe

Formula for Calculating Purge Volume: π (D^2/4) h x 7.48 gallons/cf

Well Diameter D (feet): 4"
Depth of well (feet): 24.50
Initial depth to water (feet btc): 5.95
Height of water column in riser h (feet):
Volume of water in well (gallons):

Total volume to be purged (gallons): ~36 gallons (for stabilization after 1 volume).

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic Pump
Sampling Method: Bailer
Final depth to water (feet): 6.57
Purged dry? Yes___ No X
Time start / Time sampled: 14:30
Product thickness and/or sheen? Yes___ No X

TARGET PARAMETERS: TCL+30, TAL Metals, EPH, Cr^{+6}, pH

COMMENTS: Purging at ~0.3 gpm. Discharge through a portable C-filter
About 2 hr purge or stabilization after 12-13 gallons (1 volume, approx 40 minutes).

15:30 - Start Sampling.
15:50 Complete sampling

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: PMW-24
DATE: 5/5/17
Instrument: Horiba U-52 Pine Serial # (From sensor, not meter screen): 21150 Horiba Serial #:
PROJECT: Overpeck Park/LF
LOCATION: Area 4 - Equestrian Center

PARAMETER	VOLUME EXTRACTED										
	INITIAL										
Time	12:05	12:20	12:35	12:50	13:05	13:25					
Specific Conductivity (mS/cm)	1.62	1.11	1.45	1.10	1.11	1.12					
pH (pH units)	8.26	6.39	7.24	6.96	6.87	6.74					
Temperature (degrees C)	12.44	10.05	10.09	11.10	9.78	10.07					
Turbidity (NTU)	18.6	32.6	16.5	22.4	17.11	9.6					
Color	Clear	Clear	Clear	Clear	Clear	Clear					
Odor	None	None	None	None	None	None					
Dissolved Oxygen (mg/l)	22.4	0.0	0.0	8.45	0.0	0.0					
Salinity (ppt)	0.5	0.5	0.5	0.4	0.5	0.5					
ORP	136	171	154	122	120	119					

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 21.5
Initial depth to water (feet btc): 5.2
Height of water column in riser h (feet): 16.3
Volume of water in well (gallons):

Total volume to be purged (gallons): ~32 gals.

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic Pump
Sampling Method: Bailer
Final depth to water (feet): 6.35
Purged dry? Yes___ No X
Time start / Time sampled: 12:05 / 13:30
Product thickness and/or sheen? Yes___ No X

TARGET PARAMETERS: TCL+30 TAL Metals EPH, Cr^{+6}, pH

COMMENTS: Very heavy rains, purging @ 0.4 gpm.

12:30 ⇒ Area-wide Flash-Flood warnings.

QK on site = 13:00

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: MW-1
DATE: 5/8/17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): 21150 Horiba Serial #:

PROJECT: Overpeck Park / L.F.
LOCATION: Area 1

PARAMETER	VOLUME EXTRACTED										
	INITIAL										
Time	10:15	10:30	10:45	11:00	11:15	11:30	11:45				
Specific Conductivity (mS/cm)	0.948	0.959	0.964	0.967	0.991	0.990	0.991				
pH (pH units)	7.62	7.36	7.11	7.01	6.76	6.71	6.72				
Temperature (degrees C)	12.16	11.74	11.43	11.17	10.92	9.78	9.76				
Turbidity (NTU)	48.4	36.7	12.9	8.9	9.0	6.5	5.3				
Color	Clear	Clear	Clear	Clear	Clear	Clear	Clear				
Odor	ND	ND	ND/light organic	ND	ND/light organic	Light organic	Light Odor				
Dissolved Oxygen (mg/l)	9.46	5.17	4.62	2.61	0.00	0.0	0.0				
Salinity (ppt)	0.5	0.5	0.5	0.5	0.5	0.5	0.5				
ORP	-5	-19	-41	-54	-68	-70	-71				

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 22.00
Initial depth to water (feet btc): 4.27
Height of water column in riser h (feet):
Volume of water in well (gallons):

Total volume to be purged (gallons): ~36 gallons

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic Pump
Sampling Method: Bailer
Final depth to water (feet): 5.78
Purged dry? Yes___ No X
Time start / Time sampled: 10:15 / 12:00
Product thickness and/or sheen? Yes___ No X

TARGET PARAMETERS: TCL+30, TAL, EPH, Cr^{+6}, pH.

COMMENTS:

Purging @ 0.35 gpm. ~100 min purge or Stability after 12-13 gallons.
~~Light organic Odor~~ developed after 40-45 minutes of purging.
Purge water discharged through portable C-filter.

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: MW-2
DATE: 5-8-17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): _____

PROJECT: Overpeck Park
LOCATION: Leonia, NJ
Horiba Serial #: 21061

PARAMETER	VOLUME EXTRACTED										
	INITIAL										
Time	10:35	10:40	10:45	10:50	10:55	11:00	11:05	11:10			
Specific Conductivity (mS/cm)	0.521	0.726	0.837	0.865	0.919	0.933	0.970	1.01			
pH (pH units)	7.70	7.21	7.17	7.16	7.16	7.16	7.16	7.15			
Temperature (degrees C)	11.51	10.63	10.56	10:58	10:59	10 66	10.72	10.70			
Turbidity (NTU)	832	363	118	94.8	78.3	62.4	55.0	74.5			
Color	clear	clear	clear	clear	clear	clear	clear	clear			
Odor	ND	ND	ND	ND	ND	ND	ND	ND			
Dissolved Oxygen (mg/l)	1.52	4.30	3.67	3.49	3.22	3.03	2.95	3.98			
Salinity (ppt)	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5			
ORP	173	190	196	198	200	200	201	204			

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 2"
Depth of well (feet): 23.20
Initial depth to water (feet btc): 5.02
Height of water column in riser h (feet): 18.18
Volume of water in well (gallons): 2.96

Total volume to be purged (gallons): 8.89

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic
Sampling Method: Bailer
Final depth to water (feet): 5.06
Purged dry? Yes___ No X
Time start / Time sampled: 10:35 / 11:20
Product thickness and/or sheen? Yes___ No X

TARGET PARAMETERS: TCL+30, TAL, EPH, Cr^{+6}, pH.

COMMENTS: flow rate ≈ 0.25 gallons/minute.
ran purged water through flow cell and carbon filter

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: MW-3
DATE: 5-8-17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): _____ Horiba Serial #: 2106J

PROJECT: Overpeck Park
LOCATION: Leonia, NJ

PARAMETER	VOLUME EXTRACTED										
	INITIAL	~~1:40~~		1:10	1:25	1:40	1:55	2:10			
Time	12:35	12:40	12:55	~~1:55~~							
Specific Conductivity (mS/cm)	0.947	0.990	0.991	0.992	0.986	0.988	0.990 7.67	0.990			
pH (pH units)	7.87	7.74	7.69	7.67	7.66	7.66	~~7.68~~	7.67			
Temperature (degrees C)	13.45	11.39	11.37	11.59	11.59	11.63	11.68	11.74			
Turbidity (NTU)	52.0	39.6	9.2	4.7	2.9	2.5	2.2	1.3			
Color	colorless	colorless	colorless	colorless	colorless	colorless	colorless	colorless			
Odor	ND	ND	ND	ND	ND	ND	ND	ND			
Dissolved Oxygen (mg/l)	5.42	3.75	3.27	3.10	4.41	3.68	3.04	2.95			
Salinity (ppt)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5			
ORP	187	191	190	188	185	183	181	178			

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 22.40
Initial depth to water (feet btc): 1.86
Height of water column in riser h (feet): 20.54
Volume of water in well (gallons): 13.41

Total volume to be purged (gallons): 40.24

Formula for Calculating Purge Volume: $\pi (D^2/4)\ h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic
Sampling Method: Bailer
Final depth to water (feet): 2.40
Purged dry? Yes___ No X
Time start / Time sampled: 12:35 / 2:15
Product thickness and/or sheen? Yes___ No X

TARGET PARAMETERS: TCL+30, TAL, EPH, Cr^{+6}, pH.

COMMENTS: flow rate ≈ 0.4 gallons/minute
passed purged water through flow cell and carbon filter

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: MW-4
DATE: 5/8/17
Instrument: Horiba U-52 Pine Serial # (From sensor, not meter screen): 21061 Horiba Serial #:
PROJECT: Overpeck Park / L.F.
LOCATION: Area 1

PARAMETER	VOLUME EXTRACTED										
	INITIAL										
Time	15:30	15:45	16:00	16:15	16:30	16:45	17:00				
Specific Conductivity (mS/cm)	0.809	0.832	0.835	0.834	0.833	0.827	0.829				
pH (pH units)	8.02	7.89	7.86	7.87	7.89	7.87	7.87				
Temperature (degrees C)	11.84	10.27	10.22	10.33	10.36	10.23	10.92				
Turbidity (NTU)	168	124	123	143	159	183	121				
Color	Clear	clear	clear	clear	clear	clear	Clear				
Odor	ND	ND	ND	ND	ND	ND	ND				
Dissolved Oxygen (mg/l)	5.04	2.92	2.70	3.44	3.01	2.89	1.94				
Salinity (ppt)	0.4	0.4	0.4	0.4	0.4	0.4	0.4				
ORP	182	182	182	182	182	184	184				

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 21.35
Initial depth to water (feet btc): 0.88
Height of water column in riser h (feet): 20.47
Volume of water in well (gallons): 13.3

Total volume to be purged (gallons): ≃40.0 gallons.

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic Pump.
Sampling Method: Bailer
Final depth to water (feet): 8.25
Purged dry? Yes___ No X
Time start / Time sampled: 15:30 / 17:10
Product thickness and/or sheen? Yes___ No X

TARGET PARAMETERS: TCL+30, TAL, EPH, Cr^{+6}, pH.

COMMENTS: Purging at 0.4 gpm.
Purge water discharged through portable C-filter

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: MW-5
DATE: 5/8/17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): 21061

PROJECT: Overpeck Park / LF
LOCATION: Area 1
Horiba Serial #:

PARAMETER	VOLUME EXTRACTED											
	INITIAL											
Time	12:45	12:55	13:15	13:25	13:45							
Specific Conductivity (mS/cm)	0.644	0.662	0.666	0.671	0.671							
pH (pH units)	7.87	7.53	7.44	7.45	7.44							
Temperature (degrees C)	12.72	9.65	9.50	9.50	9.51							
Turbidity (NTU)	18.4	3.3	0.0	0.0	0.0							
Color	Clear	Clear	Clear	Clear	Clear							
Odor	ND	ND	ND	ND	ND							
Dissolved Oxygen (mg/l)	1285	0.0	0.0	0.0	0.0							
Salinity (ppt)	0.3	0.3	0.3	0.3	0.3							
ORP	50	63	82	93	95							

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 21.10
Initial depth to water (feet btc): 13.40
Height of water column in riser h (feet): 17.70
Volume of water in well (gallons):

Total volume to be purged (gallons): ≈36 gallons

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic Pump
Sampling Method: Bailer
Final depth to water (feet): 4.01
Purged dry? Yes___ No X
Time start / Time sampled: 12:45 / 14:10
Product thickness and/or sheen? Yes___ No X

TARGET PARAMETERS: TCL+30, TAL, EPH, Cr^{+6}, pH.

COMMENTS: Purging @ 0.4 gpm, ≈90 minutes or stabilization after 12-13 gallon (1 volume)
Stable after 1 hr (24 gallons); start collecting samples (13:50 - 14:10)

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: MW-11D
DATE: 5/9/17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): 21061 Horiba Serial #: ______

PROJECT: Overpeck Park / LF
LOCATION: Area 3A

PARAMETER	VOLUME EXTRACTED										
	INITIAL	40	* 90	[illegible]	[illegible]	230					
Time	14:05	14:25	14:45	15:05	15:25	15:45					
Specific Conductivity (mS/cm)	0.190	0.190	0.192	0.203	0.204	0.205					
pH (pH units)	9.19	9.46	9.43	8.90	8.87	8.83					
Temperature (degrees C)	13.75	13.64	13.60	13.57	13.56	13.45					
Turbidity (NTU)	29.5	8.1	7.8	6.4	6.1	3.2					
Color	Clear	Clear	Clear	Clear	Clear	Clear					
Odor	ND	ND	ND	ND	ND	ND					
Dissolved Oxygen (mg/l)	8.75	5.58	5.11	2.80	1.41	1.15					
Salinity (ppt)	0.1	0.1	0.1	0.1	0.1	0.1					
ORP	149	146	145	156	155	151					

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 105'
Initial depth to water (feet btc): 5.3
Height of water column in riser h (feet): ~100 ft
Volume of water in well (gallons): 65 gallons

Total volume to be purged (gallons): 195 gallons

Formula for Calculating Purge Volume: $\pi (D^2/4) h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Submersible Pump
Sampling Method: Bailer
Final depth to water (feet): 6.8
Purged dry? Yes___ No X
Time start / Time sampled: 1405 / 16:00
Product thickness and/or sheen? Yes___ No X

TARGET PARAMETERS: TCL VOA+10+SVM+15, TAL Metals w/Hg, Ammonia, Nitrogen, Nitrite/Nitrate, TDS.

COMMENTS: Purging 2.2 - 2.5 gpm/min - Varies
Assume Avg. 2.3
Purge Discharge - through portable C-filter.
Collected samples at (15:45 - 16:00).

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: MW-12D
DATE: 5/9/17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): 21150

PROJECT: Overpeck Park
LOCATION: Teaneck, NJ
Horiba Serial #:

PARAMETER	VOLUME EXTRACTED										
	INITIAL										
Time	3:00	3:15	3:30	3:45	4:00	4:15					
Specific Conductivity (mS/cm)	1.07	1.06	1.06	1.05	1.05	1.05					
pH (pH units)	7.66	7.64	7.64	7.64	7.65	7.65					
Temperature (degrees C)	13.33	13.62	13.52	14.04	14.06	13.64					
Turbidity (NTU)	113	70.4	61.6	64.3	60.0	55.4					
Color	colorless	colorless	colorless	colorless	colorless	colorless					
Odor	ND	ND	ND	ND	ND	ND					
Dissolved Oxygen (mg/l)	1.04	0.00	0.00	0.00	0.00	0.00					
Salinity (ppt)	0.5	0.5	0.5	0.5	0.5	0.5					
ORP	138	132	126	118	112	111					

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet):	4"
Depth of well (feet):	122'
Initial depth to water (feet btc):	11.08
Height of water column in riser h (feet):	110.92
Volume of water in well (gallons):	72.43
Total volume to be purged (gallons):	217.29

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163" Water (ft) 4": 0.653" Water (ft) 6": 1.469" Water (ft)

Purge Method:	Monsoon Pump Low Flow
Sampling Method:	Bailer
Final depth to water (feet):	12.70
Purged dry?	Yes___ No X
Time start / Time sampled:	3:00 / 4:25
Product thickness and/or sheen?	Yes___ No X

COMMENTS: flow rate ≈ 3.0 gallons/minute
pump set up to 90'
on the ascend, pump and tubing got caught at 45'. Some obstruction is present. Discharge through a portable C-filter.

TARGET PARAMETERS: TCL VOA+10+5lib, Ammonia, Nitrogen, TAL Metals w/Hg, Nitrite/Nitrate, TDS

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: MW-14D
DATE: 5/9/17
Instrument: **Horiba U-52**
Pine Serial # (From sensor, not meter screen): 21061

PROJECT: Over Peck Park / LF
LOCATION: Area 3A
Horiba Serial #:

PARAMETER	VOLUME EXTRACTED										
	INITIAL										
Time	11:20	11:30	11:40	11:50	12:00						
Specific Conductivity (mS/cm)	0.697	0.699	0.700	0.700	0.703						
pH (pH units)	7.58	7.49	7.48	7.49	7.49						
Temperature (degrees C)	13.68	13.71	13.73	13.75	13.76						
Turbidity (NTU)	195	54	30	18.0	13.0						
Color	Clear	Clear	Clear	Clear	Clear						
Odor	ND	ND	ND	ND	ND						
Dissolved Oxygen (mg/l)	5.28	1.76	1.55	1.46	1.41						
Salinity (ppt)	0.3	0.3	0.3	0.3	0.3						
ORP	212	212	211	210	208						

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 54.65
Initial depth to water (feet btc): 15.10
Height of water column in riser h (feet):
Volume of water in well (gallons):

Total volume to be purged (gallons): ~ 8 gallons

Formula for Calculating Purge Volume: $\pi (D^2/4) h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Submersible pump
Sampling Method: Bailer
Final depth to water (feet): 21.37
Purged dry? Yes___ No X
Time start / Time sampled: 11:20 / 12:20
Product thickness and/or sheen? Yes___ No X

TARGET PARAMETERS: Ammonia Nitrogen, Nitrite, Nitrate, TAL Metals w/ Hg, TCL VOC+10-SVOC + TDS

COMMENTS: ~ 2 gpm ⇒ 40 min ⇒ Collected on [illegible]
[illegible] through portable C-filter

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: MW-17D
DATE: 5-9-17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): 21150

PROJECT: Overpeck Park
LOCATION: Teaneck, NJ
Horiba Serial #:

PARAMETER	VOLUME EXTRACTED										
	INITIAL										
Time	10:40	10:55	11:10	11:25	11:40	11:55	12:10	12:20			
Specific Conductivity (mS/cm)	0.174	0.175	0.174	0.174	0.169	0.167	0.162	0.160			
pH (pH units)	7.80	7.51	7.55	7.61	7.84	8.05	8.32	8.34			
Temperature (degrees C)	12.89	12.67	12.58	12.39	12.25	12.32	12.25	12.35			
Turbidity (NTU)	37.9	9.2	4.8	7.0	25.2	199	280	288			
Color	colorless	colorless	colorless	colorless	colorless	colorless	brown tint	brown tint			
Odor	ND	ND	ND	ND	ND	ND	ND	ND			
Dissolved Oxygen (mg/l)	1.54	0.00	0.00	0.00	1.90	2.05	0.00	0.45			
Salinity (ppt)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
ORP	91	124	130	134	132	124	115	111			

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 103'
Initial depth to water (feet btc): 3.47
Height of water column in riser h (feet): 99.53
Volume of water in well (gallons): 64.99

Total volume to be purged (gallons): 194.98

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Monsoon Pump Low Flow
Sampling Method: Bailer
Final depth to water (feet): 3.44
Purged dry? Yes___ No X
Time start / Time sampled: 10:40 / 12:30
Product thickness and/or sheen? Yes___ No X

TARGET PARAMETERS: TCL VOA+10+SIM Ammonia, Nitrogen, Nitrite/Nitrate, TAL Metals w/Hg, TDS

COMMENTS: Some obstruction in well @28ft pump set up to there. Water level meter fits through. Pump at 2" under 2" diameter doesn't fit.

flow rate ≈ 2 gallons/minute Discharge through a portable C-filter.

Degrees: 40.872469 Lat
-74.008115 Lon
UTM 583580.6 e
4,525,073.6 n

ICON Engineering - A Division of CME Associates
Lab Cert. No 12032

Monitoring Well Stabilization Test

WELL NO: MW-6
DATE: 5-12-17
Instrument: **Horiba U-52** Pine Serial # (From sensor, not meter screen): 21247 Horiba Serial #:

PROJECT: Overpeck L.F.
LOCATION: Area 1

PARAMETER	VOLUME EXTRACTED										
	INITIAL	5g.	10g.	15gal.	20gal.	25gal.	30gal.				
Time	14:30	14:45	15:00	15:15	15:30	15:45	16:00				
Specific Conductivity (mS/cm)	0.501	0.511	0.517	0.528	0.531	0.549	0.548				
pH (pH units)	7.15	7.16	7.22	7.29	7.32	7.37	7.36				
Temperature (degrees C)	16.54	14.32	14.78	13.90	13.61	12.17	12.16				
Turbidity (NTU)	19.2	12.4	21.8	26.7	26.6	23.0	11.7				
Color	Clear	Clear	Clear	Clear	Clear	Clear	Clear				
Odor	ND	ND	ND	ND	ND	ND	ND				
Dissolved Oxygen (mg/l)	7.86	2.45	1.29	0.82	0.74	0.81	0.87				
Salinity (ppt)	0.2	0.2	0.2	0.3	0.3	0.3	0.3				
ORP	230	240	245	252	253	251	256				

Depth to water measured from north side of the top of riser pipe

Well Diameter D (feet): 4"
Depth of well (feet): 19.87
Initial depth to water (feet btc): 2.95
Height of water column in riser h (feet):
Volume of water in well (gallons):

Total volume to be purged (gallons): ~32 gallons.

Formula for Calculating Purge Volume: $\pi (D^2/4)\, h \times 7.48$ gallons/cf

2": 0.163* Water (ft) 4": 0.653* Water (ft) 6": 1.469* Water (ft)

Purge Method: Peristaltic Pump
Sampling Method: Bailer
Final depth to water (feet): 7.35 & recharging rapidly.
Purged dry? Yes___ No X
Time start / Time sampled: 14:30 / 16:05
Product thickness and/or sheen? Yes___ No X

TARGET PARAMETERS:

COMMENTS: Purging at 0.3-0.35 gpm.
Looking for stabilization after 12-13 gallons or 90 min. purge.
Collected sample @ 16:05

ICON Engineering - A Division of CME Associates

WELL NO: Area 2-1 [redacted]
DATE: 5/25/17

Monitoring Well Stabilization Data

PROJECT: Overpeck L.F.
LOCATION: Area 2 (Along Degraw Ave.).

Instrument: Horiba U-52: _____ Pine Serial # (From sensor, not meter screen): _____ Horiba Serial #: _____

PARAMETER	INITIAL	VOLUME EXTRACTED								
Depth To Water (ft)	2.93									
Time	10:15	10:25	10:35	10:45	10:55	11:05	11:15			
Temperature (degrees C)	10.85	9.92	9.74	9.65	9.63	9.65	9.66			
pH (pH units)	7.02	6.85	6.76	6.65	6.67	6.65	6.64			
ORP (ORPmV)	-95	-101	-104	-105	-106	-106	-107			
Specific Conductivity (mS/cm)	2.04	1.89	1.88	1.88	1.88	1.87	1.87			
Turbidity (NTU)	28.4	19.7	12.3	19.7	16.4	15.9	15.3			
Dissolved Oxygen (mg/l)	3.0	0.6	0.0	0.0	0.0	0.0	0.0			
Salinity (ppt)	1.0	0.8	0.9	0.9	0.9	0.9	0.9			
Color	Clear	Clear	Clear	Clear	Clear	Clear	Clear			
Odor	Organic	Organic	Light Org.	Light Org.	None	None	None			

Depth to water measured from north side of the top of riser pipe:

Formula for Calculating Purge Volume: π (D"/4) h x 7.48 gal/cf

3 x Well Volume:

2" well: 0.49 x h (ft)	4" well: 1.95 x h (ft)	6" well: 4.45 x h (ft)

Well Diameter D (inch): 4"
Depth of well (feet): 16.0
Initial depth to water (ft): 2.93
Height of water (h) column in Well (ft): 13.07
Volume of water in well (gallons): _____
Total to be purged (gallons): ~25 gallons

Purge Method: Peristaltic Pump
Sampling Method: Bailer
Final depth to water (feet): 3.00
Purged dry? Yes___ No X
Time start / Time sampled: 10:15 / 11:15-11:30
Product thickness and/ or sheen? Yes___ No X

TARGET PARAMETERS: Ammonia, Nitrogen, Nitrite, Nitrate, TDS, 1-4 Dioxane
COMMENTS: Purging at 0.35-0.4 gpm (Avg. varied); assumed 0.35 gpm
Note: Area under water by the end of sampling

APPENDIX 2

LABORATORY ANALYTICAL REPORTS

APPENDIX 3

NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM
EXCEEDANCE REPORT FOR SANITARY LANDFILLS

New Jersey Department of Environmental Protection
Solid & Hazardous Waste Management Program

NJPDES-DGW Exceedance Report for Sanitary Landfills

Facility Name: Overpeck Park Landfill NJPDES-DGW Permit #: NJG0186422

Sampling Date: May 4 - 25, 2017 Reporting Period: April 2017 to June 2017
Month/Year to Month/Year

NJ Lab Cert. #: 12028 Applicable GW Classification: Class IIA

During the above monitoring event, did any analytical parameter exceed the applicable Ground Water Quality Criteria (GWQC)?
No _____ Yes X
(if yes, specify details in the table below)

Parameter	Well ID	Units	GWQC	Lab Result
1,4-Dioxane	Area2-3 (MW-3)	µg/L	0.4	0.92
1,4-Dioxane	PS-1	µg/L	0.4	16
1,4-Dioxane	MW-18	µg/L	0.4	2.5
1,4-Dioxane	MW-19	µg/L	0.4	0.45
Aluminum	MW-2	µg/L	200	667
Aluminum	MW-4	µg/L	200	895
Aluminum	MW-6	µg/L	200	569
Aluminum	MW-17D	µg/L	200	9,410
Aluminum	MW-14D	µg/L	200	996
Aluminum	MW-12D	µg/L	200	541
Aluminum	PS-1	µg/L	200	417
Aluminum	PMW-24	µg/L	200	227
Arsenic	MW-1	µg/L	3	5.5
Arsenic	MW-6	µg/L	3	3.7
Arsenic	Area2-6 (MW-6)	µg/L	3	4.9
Arsenic	MW-17D	µg/L	3	6.1
Arsenic	MW-12D	µg/L	3	3.3
Arsenic	MW-11D	µg/L	3	4.4
Arsenic	MW-19	µg/L	3	3.9
Arsenic	PMW-22	µg/L	3	3.2
Arsenic	PMW-24	µg/L	3	5.3
Arsenic	PMW-25	µg/L	3	10.7
Benzene	PS-1	µg/L	1	3.2
Benzene	PMW-27	µg/L	1	4.7
Chlorobenzene	PMW-27	µg/L	50	52.0
Iron	MW-1	µg/L	300	8,350.0
Iron	MW-2	µg/L	300	866.0
Iron	MW-4	µg/L	300	1,070.0
Iron	MW-6	µg/L	300	775.0
Iron	Area2-1 (MW-1)	µg/L	300	63,800.0
Iron	Area2-2 (MW-2)	µg/L	300	862.0
Iron	Area2-3 (MW-3)	µg/L	300	56,900.0
Iron	Area2-4 (MW-4)	µg/L	300	17,900.0
Iron	Area2-5 (MW-5)	µg/L	300	9,970.0
Iron	Area2-6 (MW-6)	µg/L	300	8,030.0
Iron	MW-17D	µg/L	300	12,600.0
Iron	MW-14D	µg/L	300	1,810.0
Iron	MW-12D	µg/L	300	1,100.0
Iron	PS-1	µg/L	300	26,000.0
Iron	MW-18	µg/L	300	37,200.0
Iron	MW-19	µg/L	300	41,900.0
Iron	PMW-24	µg/L	300	4,780.0
Iron	PMW-23	µg/L	300	335.0
Iron	PMW-27	µg/L	300	18,500.0
Iron	PMW-21	µg/L	300	11,000.0
Iron	PMW-26	µg/L	300	8,700.0

Parameter	Well ID	Units	GWQC	Lab Result
Iron	PMW-30	µg/L	300	17,500.0
Lead	Area2-1 (MW-1)	µg/L	5	11.3
Lead	Area2-3 (MW-3)	µg/L	5	7.3
Lead	Area2-4 (MW-4)	µg/L	5	8.3
Lead	MW-17D	µg/L	5	8.5
Lead	MW-14D	µg/L	5	5.5
Lead	MW-19	µg/L	5	9.1
Lead	PMW-30	µg/L	5	6.8
Manganese	MW-1	µg/L	50	4520
Manganese	MW-2	µg/L	50	144
Manganese	Area2-1 (MW-1)	µg/L	50	650
Manganese	Area2-2 (MW-2)	µg/L	50	670
Manganese	Area2-3 (MW-3)	µg/L	50	746
Manganese	Area2-4 (MW-4)	µg/L	50	431
Manganese	Area2-5 (MW-5)	µg/L	50	3180
Manganese	Area2-6 (MW-6)	µg/L	50	2460
Manganese	MW-17D	µg/L	50	509
Manganese	MW-14D	µg/L	50	138
Manganese	MW-12D	µg/L	50	285
Manganese	PS-1	µg/L	50	1140
Manganese	MW-18	µg/L	50	1070
Manganese	MW-19	µg/L	50	1120
Manganese	PMW-22	µg/L	50	189
Manganese	PMW-24	µg/L	50	651
Manganese	PMW-23	µg/L	50	216
Manganese	PMW-27	µg/L	50	65.9
Manganese	PMW-21	µg/L	50	681
Manganese	PMW-25	µg/L	50	147
Manganese	PMW-30	µg/L	50	1350
Sodium	MW-1	µg/L	50000	82400
Sodium	Area2-2 (MW-2)	µg/L	50000	344000
Sodium	Area2-4 (MW-4)	µg/L	50000	58500
Sodium	Area2-6 (MW-6)	µg/L	50000	113000
Sodium	MW-12D	µg/L	50000	53300
Sodium	PS-1	µg/L	50000	701000
Sodium	MW-18	µg/L	50000	80600
Sodium	MW-19	µg/L	50000	50800
Ammonia	Area2-3 (MW-3)	µg/L	3	7
Ammonia	PS-1	µg/L	3	33
Ammonia	MW-18	µg/L	3	105
Ammonia	MW-19	µg/L	3	22
Total Dissolved Solids	Area2-1 (MW-1)	µg/L	500	724
Total Dissolved Solids	Area2-2 (MW-2)	µg/L	500	2510
Total Dissolved Solids	Area2-3 (MW-3)	µg/L	500	584
Total Dissolved Solids	Area2-5 (MW-5)	µg/L	500	708
Total Dissolved Solids	Area2-6 (MW-6)	µg/L	500	884
Total Dissolved Solids	MW-12D	µg/L	500	864
Total Dissolved Solids	PS-1	µg/L	500	3380
Total Dissolved Solids	MW-18	µg/L	500	1,090
Total Dissolved Solids	MW-19	µg/L	500	1,480

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this

Signature:

Print Name: James Koth

Title: Bergen County Parks Department Director